April 2025

# Construction and Operational

# Proposed Large-Scale Development at LDA Wilton, Sarsfield Road, Cork

## On behalf of

## The Land Development Agency ('LDA')

MALONE O'REGAN ENVIRONMENTAL

QUALITY
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# Form ES - 04

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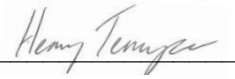
**Checked By: Henry Tennyson** **Signed:** 

**Approved By: Gus Egan** **Signed:** 

## Revision Record

| Issue No. | Date | Description | Remark | Prepared | Checked | Approved |
|---|---|---|---|---|---|---|
| 01 | 21/08/24 | Preliminary Report | Final | MH | HT | GE |
| 02 | 10/01/25 | Updated Preliminary Report | Final | MH | HT | GE |
| 03 | 23/01/25 | Updated Preliminary Report | Final | MH | HT | GE |
| 04 | 05/02/25 | Updated Project Description | Final | MH | HT | GE |
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**Construction and Operational**

**Proposed Large-Scale Development at LDA Wilton, Sarsfield Road, Cork**

**Land Development Agency**

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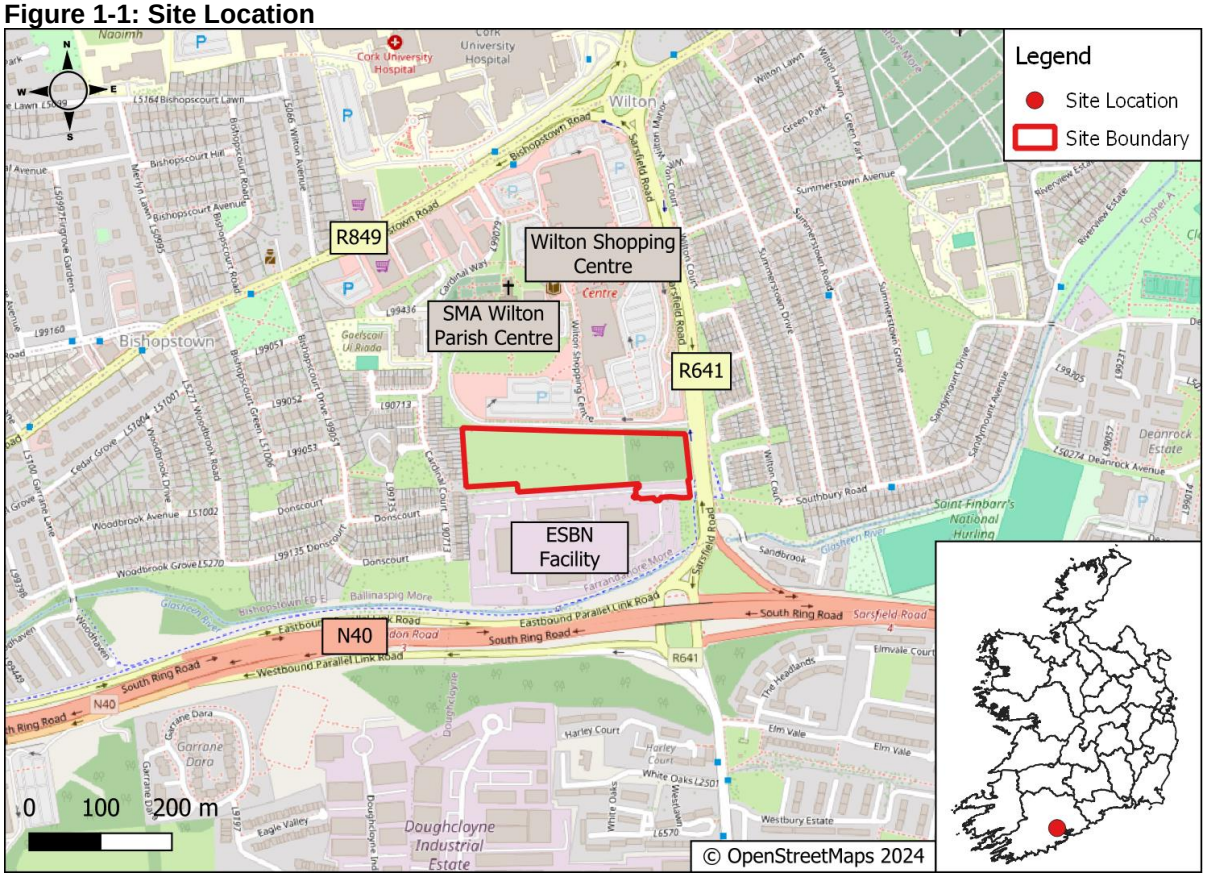
# 1 INTRODUCTION

Malone O'Regan Environmental ('MOR Environmental') was commissioned by the Land Development Agency ('the Applicant') to prepare a Construction and Operational Waste Management Plan ('C&OWMP'). The C&OWMP will accompany the planning application for the housing development and all associated works ('the Proposed Development') on lands at Farrandahadore More, Sarsfield Rd, Wilton, Cork. The location of the Proposed Development ('the Site') is shown in Figure 1-1.

**Figure 1-1: Site Location**




## 1.1 Scope and Objective

The purpose of the C&OWMP is to outline the manner in which construction and operational waste will be managed throughout the construction and operation phases of the Proposed Development in order to achieve compliance with the relevant waste legislation. This will ensure that waste management activities from the Site will not have an adverse impact on the environment.

This C&OWMP has been prepared 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 [1];
- Waste Action Plan for a Circular Economy [2]; and,
- Cork City Development Plan 2022-2028 [3].

This document has been prepared with the cognisance of the "Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition

Projects" [4]. In these Guidelines, the category and quantity of waste generated by the Proposed Development is estimated and recommendations for the management of the various waste streams are made.

## 1.2 Environmental Policy

The project will be carried out in accordance with the developer's and appointed contractor's resource and waste policies, objectives and procedures.

### 1.2.1 Waste Policy and Legislation

Directive 2008/98/EC [5], also known as the Waste Framework Directive, establishes an overall policy on waste in the EU. The Directive outlines key concepts such as waste, recovery, and disposal, establishes the necessary requirements for waste management, and establishes principles for handling waste in a way that does not negatively impact the environment or human health.

The waste hierarchy is encouraged throughout the Directive and will be adhered to during the construction and demolition phase of the Proposed Development.

#### 1.2.1.1 National Waste Policy and Legislation

Ireland's National Waste Policy 2020-2025: A Waste Action Plan for a Circular Economy [2] focuses on preventing waste generation and resource consumption and to extend the productive life of products and goods within Irish society and economy. The Waste Action Plan outlines methods for reducing and managing waste from construction and demolition ('C&D'). The Plan outlines areas in which the C&D sector will need to achieve over the coming years, and where possible, the Proposed Development will assist in reaching these objectives, such as promoting waste prevention, following the best available techniques and expanding the range of recycled products.

#### 1.2.1.2 Local Waste Policy and Legislation

The Southern Region Waste Management Plan 2015-2021 [1], operated over ten local authorities comprising Carlow, Clare, Cork County, Cork City, Limerick City & County, Kerry, Kilkenny, Tipperary, Waterford City & County, and Wexford. The Plan sets out the strategic and policy context for the region, reviews the waste management strategies implemented before its publication, and assesses waste projections and plans for future waste management strategies.

One of the goals set out in the Plan is to "*reduce and where possible eliminate landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of the recovery of residual wastes*" by 2030 [1].

The Southern Region Waste Management Plan 2015-2021 [1] sets out 8 strategic objectives, which represent the local authorities statement of intent. The strategic objectives have been developed for key policy areas over the duration of the plan.

Objective A outlines the intent to align with EU and national waste policies by applying the waste hierarchy to the management of waste streams. Objective A states, "*The region will implement EU and national waste and related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes".*

Objective F sets out enforcement and regulation actions for waste enforcement in the region, the plan states "*The region will implement a consistent and coordinated system for regulation and enforcement of waste activities in cooperation with other environmental regulators and enforcement bodies".*

### 1.2.2 Cork City Development Plan 2022 – 2028

The Cork City Development Plan 2022-2028 [3] presents a six-year plan for the city's growth and development. Chapter 9 of the development plans outlines the waste management policy, which is based on the EU waste hierarchy prevention, preparing for reuse, recycling, energy recovery and sustainable disposal, which is a core waste management principle outlined in this report demonstrated in section 5.

The development plan includes a number of objectives that the Cork County Council has outlined regarding waste and waste management, which has been considered in preparing this report.

Objective 5.13 of the Cork City Development Plan states that " *all development proposals should minimise waste and maximise the recycling and re-use opportunities during the construction and operation phases.*"

Objective 9.12 of the Cork City Development Plan presents the following commitments:

- *To support the sustainable waste management in line with the objectives of the Southern Region Waste Management Plan 2015-2021 and the National Waste Management Plan for a Circular Economy (NWMPCE) when published, which will replace the existing Regional Waste Management Plan.*
- *To facilitate the transition to a circular economy facilitating the value recovery and recirculation of resources in order to generate minimal waste.*
- *Continue to fulfil duties under the Waste Management (certification of historic unlicensed waste disposal and recovery activity) Regulations 2008 (S.I. No 524 of 2008), including those in relation to the identification and registration of closed landfills.*
- *To encourage the recycling of construction and demolition waste and the reuse of aggregate and other materials in future construction projects. Applications for large infrastructure projects shall be accompanied by a Construction and Environmental Management Plan that includes details of how construction and demolition waste generated is to be managed and, where reuse/recycling is not practicable, disposed of, in line with legislative requirements."*

## 1.3 Waste Management Objectives

The Waste Management Objectives for the Construction and Operational 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; and,
- Prevent any other environmental pollution such as soil or water contamination.

The C&OWMP is a "live" document and should be reviewed and updated throughout all stages of construction and operation.

# 2 DESCRIPTION OF THE PROPOSED DEVELOPMENT

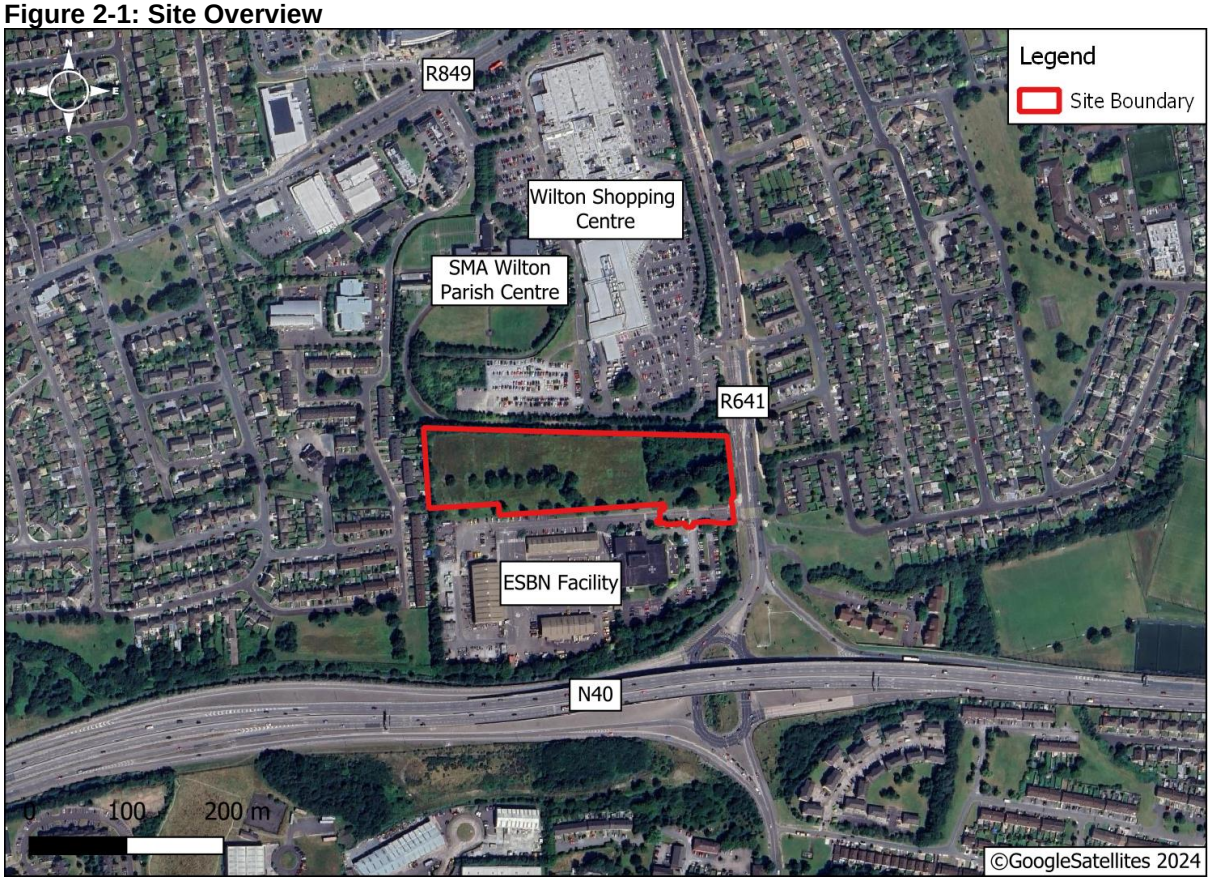
## 2.1 Site Context

The Site is located on a ca. 2.61ha site, which is located ca. 3km southwest of Cork City. The Site is accessed via the ESB Networks facility entrance and a gate, which is along the regional road R641 also known as Sarsfield Road that connects to the N40 'Cork South Ring Road'.

The Site is comprised of an area of amenity grassland and a section scrub in the northeast corner. A hedgerow / treeline borders the north and west of the Site, along with a section of scrub.

The Site is located in the centre of Wilton, to the west of Sarsfield Road (R641). The surrounding area is largely made up of residential, commercial and institutional uses. The Site is bordered to the north by the access road to the SMA Wilton Parish Centre and its associated buildings and lands. Wilton Shopping Centre and car park is located immediately to the east of the SMA Wilton Parish Centre and its associated buildings. To the west of the Site and east of the Sarsfield Road comprises of large areas of residential premises, both semi-detached and terraced. The Site is bound to the south by the Wilton Electricity Supply Board Networks ('ESBN') Facility. See Figure 2-1 below.

**Figure 2-1: Site Overview**




## 2.2 Proposed Development

The Proposed Development will consist of the following:

> *'The Land Development Agency ('LDA') intends to apply to Cork City Council for permission for a Large Residential Development with a total application site area of c. 2.61ha, on lands adjoining the ESB Networks DAC Office, at Farrandahadore More, Sarsfield Road, Wilton, Cork City. The development will provide 348 no. residential*

*units and a 156 sqm childcare facility, revised access arrangements to Sarsfield Road and all associated development above and below ground.'*

Full details of the above Proposed Development can be found in the Planners Report submitted as part of this planning application.

## 2.3 Drainage

### 2.3.1 Surface Water Drainage

#### 2.3.1.1 Existing Surface Water Drainage

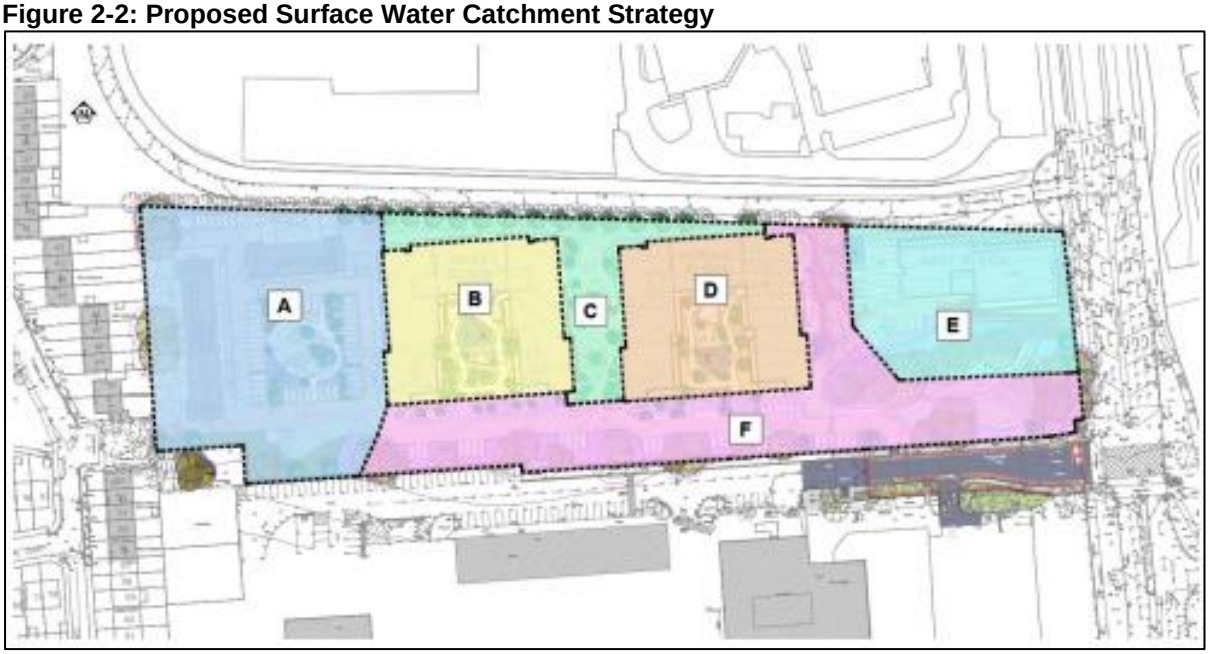
Following a desktop review of the available drainage records, along with a visual site inspection, it is noted there is no formal surface water drainage serving the site. There are a number of existing road gullies within the site boundary on the existing ESB Networks facility access road to the southeast which appear to connect to an existing combined sewer which flows eastwards.

Beyond the site boundary to the east, there is an existing 600mm diameter surface water pipe located below Sarsfield Road, which flows in a southerly direction, ultimately discharging to the Glasheen River. To the west, there is an existing 600mm diameter surface water pipe at Cardinal Court, which also flows in a southerly direction to a separate outfall to the Glasheen River.

#### 2.3.1.2 Proposed Surface Water Drainage

It is proposed that the 2.61ha catchment area be split into five sub-catchments, as shown in Figure 2-2. The above strategy has been arrived at on the basis of the limited available open space available for one central attenuation facility. Due to various constraints, such as existing mature tree root protection zones and the need to avoid placing tanks below roads to be taken in charge in future, the above strategy allows for localised attenuation, with smaller structures, within each sub-catchment. Restricted flows from sub-catchments A, B, C & D will all ultimately drain via sub-catchment F and discharge finally at a rate limited to Qbar for the site (13.21l/s), to the existing 600mm diameter surface water network at Sarsfield Road.

**Figure 2-2: Proposed Surface Water Catchment Strategy**



### 2.3.2 Foul Drainage

The proposed foul drainage system will be designed to take discharges from the new residential units. There is a small amount of commercial space on site, namely the proposed creche facility within the middle block.

The foul network will be designed in accordance with Uisce Eireann's current Code of Practice for Wastewater Infrastructure. The foul network will comprise of 150mm, 225mm and 300mm diameter SN8 pipework, and will be designed for a minimum velocity of 0.75m/s (self-cleansing) and maximum peak velocity of 2.5m/s.

It is proposed to connect to the existing Irish Water network at an existing manhole on the 225mm foul sewer at Sarsfield Road and to upgrade the existing sewer from 225mm to 300mm downstream of this (ca. 12m in length) until its junction with the existing 525mm diameter combined sewer.

**Figure 2-3: Proposed Development Site Layout**

# 3 CONSTRUCTION WORKS

## 3.1 Construction Programme

The anticipated duration of the construction of the Proposed Development will be confirmed upon the appointment of the main contractor.

## 3.2 Construction Management Plan

During the construction phase, the methods of working will comply with all relevant legislation and best practices in reducing the environmental impacts of the works. Although construction phase impacts are generally of a short-term duration and are localised in nature, the impacts will be reduced as far as practicable through compliance with relevant guidance outlined in section 1.1. Construction phase times will be as follows:

- 7:00am to 6:00pm Monday to Friday;
- 8:00am to 2:00pm on Saturdays; and,
- No work on Sundays or public holidays.

Construction works outside these hours will be limited to works necessary for health and safety reasons, to protect the environment or with prior agreement with the Planning Authority.

## 3.3 Construction Compound

To ensure the efficient management of the construction works, a temporary construction compound will be set up for the duration of the construction works. During the construction of the Proposed Development, it is expected that the site compound will be located in the east of the Site.

## 3.4 Construction Traffic and Site Access

During the construction works, construction vehicles, i.e., Heavy Goods Vehicles (‘HGVs’), are proposed to approach the Site via the existing access road of the R641, which currently serves the ESB site to the south.

# 4 RESPONSIBILITIES AND TRAINING

A member of the construction management team will be appointed as the Project Resource and Waste Manager to ensure compliant, efficient and documented resource and waste management during the construction phase. A member of the facility management team will be appointed for the project's operational phase. Each member of the construction and operational staff, including sub-contractors, will require training in resource and waste management procedures appropriate to their role. Each person will be responsible for complying with the C&OWMP and related resource and waste management procedures.

**Table 4-1: Roles and Responsibilities**

| Role | Responsibility |
|---|---|
| Client | • Responsible for appointing and directing an appropriately qualified design team. |
| Contractor | • Responsible for appointing a Resource and Waste Manager;<br>• Managing the construction phase of the project; was responsible for the project's overall environmental performance;<br>• Responsible for reporting incident responses and, where required, communicating the incident details to relevant regulatory authorities;<br>• Monitoring of the construction processes against the project objectives;<br>• Liaison with all staff and local stakeholders dealing with any complaints or queries from the public; and,<br>• Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the C&OWMP and other environmental reports. |
| Architect, Engineer and Quantity Surveyor | • Responsible for the design of the project, including setting environmental targets;<br>• Liaison with the planning authority, client and contractor to ensure that requirements are communicated; and,<br>• Ensure compliance with environmental legislation, consents, objectives, targets and other environmental commitments, including those arising from the C&OWMP and other environmental reports. |
| Resource and Waste Manager | • The Resource and Waste Manager will be given responsibility and authority to select a resource and waste team, if required, i.e., site staff members that will aid them in the organisation, operation and recording of resource and waste management systems on the Site. The Resource and Waste Manager will be responsible for overseeing, recording and providing feedback to the Client on everyday waste management at the Site. Authority will be given to the Resource and Waste Manager to delegate responsibilities to sub-contractors where necessary and coordinate with suppliers, service providers and sub-contractors to prioritise on-site waste prevention and recycling;<br>• They will be responsible for appropriately training all relevant site personnel for their role in implementing the C&OWMP and related waste management procedures. These procedures will include litter prevention and mitigation measures to ensure that all waste is disposed of legally, economically, and safely;<br>• The Resource and Waste Manager will be required to ensure that only appropriately permitted waste collection contractors are used to collect waste from the Site;<br>• The Resource and Waste Manager will be trained in how to establish and maintain a waste record-keeping system, perform an audit, and establish targets for waste management on site. They will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused onsite, and know how to implement the C&OWMP. They will also be responsible for conducting waste audits from time to time; and, |

| Role | Responsibility |
|---|---|
| | • The Resource and Waste Manager will be available for any Local Authority or other audits as required. They will also update the C&OWMP as required. |
| Site staff, including sub-contractors | • It will be the responsibility of all relevant site construction / operational staff and sub-contractors to ensure that waste is segregated and stored appropriately in line with the C&OWMP and related waste management procedures; and,<br>• A basic awareness course will be given to all site staff and relevant sub-contractors to outline the C&OWMP, to detail the segregation of waste materials at source and litter prevention requirements. This may be incorporated with other site training sessions e.g. general site induction. This basic course 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 or their nominated deputy. |

# 5 WASTE MANAGEMENT

## 5.1 Construction Phase

### 5.1.1 Minimisation, Reuse and Recycling of Construction Waste

All wastes generated onsite will be collected by a suitably licensed waste contractor and sent to an appropriately permitted or licensed facility for onward processing, in line with the Waste Management Act (as amended).

Construction waste will arise on the project mainly from excavation activities. It is expected that while there will be unavoidable construction waste, material surpluses, and damaged materials that will need to be disposed of, the Site Manager shall ensure that materials are ordered so that the quantity delivered and the storage are not conducive to the creation of unnecessary waste.

Construction waste materials will be collected in a designated storage area for subsequent separation and disposal at a remote facility. Packaging will be source segregated for recycling and returned to the suppliers. Excavation soil and construction waste-derived aggregates are considered suitable for certain on-site construction applications.

Concrete waste will be minimal and will be generated from the construction process. This waste will be source segregated and will either be stored in piles for further processing on-site or will be used as a lean mix in conjunction with hard-core fill. Where necessary, hardened concrete waste will be sent to a waste recovery facility and recovered for hardcore off-site. As the concrete waste will be the excess left as a result of ordering, there will not be any reinforcing steel to recycle. Masonry waste resulting from the construction process will also be sent to a waste recovery facility and recovered for hardcore off-site.

### 5.1.2 Soil

Excavated soil/stone will be carefully stored in segregated piles on the site for subsequent reuse within the development where it is deemed acceptable by the site engineer to do so. Excess material will be removed from the Site to a suitably permitted recovery / disposal site, or an Article 27 by-product notification will be submitted to the Environmental Protection Agency (‘EPA’) for approval.

### 5.1.3 Assignment of Responsibilities

The Resource and Waste Manager appointed by the Construction Management will have overall responsibility for the implementation of the Project C&OWMP. The Construction Waste Manager will be assigned the authority to instruct all site personnel to comply with the specific provisions of the Plan. At the operational level, the Site Foreman from each sub-contractor on the Site shall be assigned the direct responsibility to ensure that the discrete operations stated in the Project C&OWMP are performed on an ongoing basis.

### 5.1.4 Training

Copies of the C&OWMP will be made available to all relevant personnel on-site and included in the site induction information. All site personnel and sub-contractors will be instructed about the objectives of the C&OWMP and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation and material reuse techniques apply, each member of staff will be given instructions on how to comply with the project C&OWMP.

### 5.1.5 Waste Auditing

The main contractor will manage the development and implementation of the C&OWMP during the construction phase, including monitoring/mitigation measures. The Waste Manager shall arrange for full details of all movements and treatment of construction waste discards to be

recorded during each phase of the Project. Each consignment of waste taken from the site will be subject to documentation, which will conform with the requirements of Table 5-1 and ensure the material's full traceability to its final destination.

**Table 5-1: Waste Details to be Included in Transportation Dockets**

| Details | Particulars |
|---|---|
| Name of project of origin | Insert Address. |
| Material being transported | Identify the material being transport e.g., soil and stone, timber. |
| Quantity of material | Record the quantity in tonnes (use three place decimals). |
| Date of material movement | Record the date. |
| Name of permitted carrier | Record the driver's name, vehicle registration and permit number. |
| Material Destination | Record site address and permit number if applicable. |
| Proposed Use | Record the proposed use, recovery or disposal. |

Details of the inputs of materials to the construction site and the outputs of wastage arising from the Project will be investigated and recorded in a Waste Audit, which will identify the amount, nature and composition of the waste generated on the site. The Waste Audit will examine the manner in which the waste is produced and will provide a commentary highlighting how management policies and practices may inherently contribute to the production of construction and demolition waste. The measured waste quantities will be used to quantify the costs of management and disposal in a Waste Audit Report, which will also record lessons learned from these experiences which can be applied to future projects. The total cost of construction waste management will be measured and will take into account the purchase cost of materials (including imported soil), handling costs, storage costs, transportation costs, revenue from sales, disposal costs, etc. Costs will be calculated for the management of a range of construction waste materials using the format shown in Table 5-2 below.

**Table 5-2: Example Record form for Costs of Construction Waste Management**

| Material | Estimated quantities | Units | Associated costs |
|---|---|---|---|
| **Quantity of waste material** | | | |
| **Purchase Costs i.e., Import Costs** | | | |
| **Material Handling Costs** | | | |
| **Material Storage Costs** | | | |
| **Material Transportation Costs** | | | |
| **Revenue from Material Sales** | | | |
| **Material Disposal Costs** | | | |
| **Material Treatment Costs** | | | |

| Material | Estimated quantities | Units | Associated costs |
|---|---|---|---|
| **Total Waste MATERIAL Management Costs** | | | |
| **Unit Waste MATERIAL Management Cost** | | | |

A separate table is required to be compiled in respect of each waste material replacing "MATERIAL" with the relevant item. Final details of the quantities and types of construction waste arising from the Project will be forwarded to Council's Environmental Department.

### 5.1.6 Hazardous Wastes

It is not anticipated that there will be any hazardous wastes generated on-site; however, if required, the management of hazardous waste will comply with current legislation:

- The Waste Management Acts ('WMA') 1996 (as amended); and,
- Waste Management Regulations 1998 (as amended).

Hazardous waste which may be produced or encountered on site includes:

- Soils contaminated with waste oils or fuels;
- Waste oils and fuels; and,
- Used aerosol containers.

Hazardous wastes will be kept separate from other construction waste materials to avoid further contamination. Hazardous wastes will be stored on-site in suitable receptacles for subsequent separation and disposal at a suitably permitted remote facility.

## 5.2 Operational Phase

### 5.2.1 Estimated Waste Generation

The estimated volume of waste that will be generated during the Operational Phase of the Proposed Development has been determined using the BS5906:2005 Waste Management in Buildings – Code of Practice [6]. The standard has been utilised to calculate the waste production of each individual resident and the waste storage capacity required.

The BS5906:2005 Waste Management in Buildings – Code of Practice [6] uses the following formula to calculate domestic weekly waste arisings:

*number of dwellings x {(volume arising per bedroom [70L] x average number of bedrooms) + 30}*

#### 5.2.1.1 Apartment Units

The predicted waste arisings for each of the apartment blocks using the BS5906:2005 Waste Management in Buildings – Code of Practice [6] have been outlined below.

**Table 5-3: Predicted Waste Arisings from the Western Block**

| Unit Type | Number of Units | Number of Bedrooms | Volume of waste per Bedroom (Litre) | Weekly Total (Litre) |
|---|---|---|---|---|
| 1 Bedroom Apartment | 52 | 1 | 70 | 3,670 |
| 2 Bedroom Apartment | 64 | 2 | 70 | 8,990 |
| **Total** | | | | **12,660** |

**Table 5-4: Predicted Waste Arisings from the Middle Block**

| Unit Type | Number of Units | Number of Bedrooms | Volume of waste per Bedroom (Litre) | Weekly Total (Litre) |
|---|---|---|---|---|
| 1 Bedroom Apartment | 59 | 1 | 70 | 4,160 |
| 2 Bedroom Apartment | 75 | 2 | 70 | 10,530 |
| **Total** | | | | **14,690** |

**Table 5-5: Predicted Waste Arisings from the Eastern Block**

| Unit Type | Number of Units | Number of Bedrooms | Volume of waste per Bedroom (Litre) | Weekly Total (Litre) |
|---|---|---|---|---|
| 1 Bedroom Apartment | 43 | 1 | 70 | 3,040 |
| 2 Bedroom Apartment | 41 | 2 | 70 | 5,770 |
| **Total** | | | | **8,810** |

#### 5.2.1.2 Townhouses

The predicted waste arisings for the Townhouses using the BS5906:2005 Waste Management in Buildings – Code of Practice [6] have been outlined in Table 5-6 below.

**Table 5-6: Predicted Waste Arisings from the Townhouses**

| Unit Type | Number of Units | Number of Bedrooms | Volume of waste per Bedroom (Litre) | Weekly Total (Litre) |
|---|---|---|---|---|
| Townhouses | 16 | 3 | 70 | 798 |
| **Total** | | | | **798** |

#### 5.2.1.3 Creche

The BS5906:2005 Waste Management in Buildings—Code of Practice [6] defines waste arising from "*premises forming part of a university or school or other educational establishment*" as "*household waste*." The standard does not provide typical weekly waste arising from a facility such as a creche. Therefore, an office was used as the closest comparison under which a single person typically produces 50 litres of waste weekly.

The predicted waste arisings for the Creche have been outlined in Table 5-7 below.

**Table 5-7: Predicted Waste Arisings from the Creche**

| Unit Type | Capacity of Creche | Volume of waste per person (Litre) | Weekly Total (Litre) |
|---|---|---|---|
| Creche | 45 | 50 | 2,250 |

### 5.2.2 Waste Segregation

According to the EPAs 'Household Waste Statistics for Ireland' (2024) [7]. The typical wastes collected in residential development respective bins during 2022 are as follows:

- Dry Mixed Recycling (22%);
- Mixed Non-Recycling / General Waste (61%); and,
- Organic Material (17%).

In addition to the common waste type outlined above, a residential development generally also generates the following wastes in small quantities:

- Glass;
- Electrical Waste: Electronic Equipment such as televisions, printers, radios, mobile phones and batteries;
- Chemicals: Paints, glues, resins, detergents;
- Textiles; and,
- Furniture.

Utilising the waste generation breakdown provided by the EPA 'Household Waste Statistics for Ireland' (2024) [7] and predicted waste arising from each unit outlined in section 5.2.1, Table 5-8 below presents the predicted volumes of each waste type generated from each unit in the Proposed Development.

**Table 5-8: Predicted Typical Weekly Waste Arisings Breakdown for the Proposed Development**

| Waste Type | Weekly Total per West Block (Litre) | Weekly Total per Middle Block (Litre) | Weekly Total per East Block (Litre) | Weekly Total per Townhouse (Litre) | Weekly Total Creche (Litre) |
|---|---|---|---|---|---|
| Dry Mixed Recycling | 2,785 | 3,232 | 1,938 | 11 | 495 |
| Mixed Non-Recycling | 7,723 | 8,961 | 5,374 | 30 | 1,373 |
| Organic Material | 2,152 | 2,497 | 1,498 | 8 | 383 |

Segregation of waste of domestic waste shall occur at source through the provision of 3 no. bin types to facilitate waste segregation in each accommodation unit. An example is shown below in Figure 5-1.

Residents of the Proposed Development will be required to segregate waste into the following main waste categories:

- Dry Mixed Recyclables;
- Mixed Non-Recyclables / General Waste; and,
- Organic Waste.

Residents will be required to take their segregated waste materials to the designated waste storage area and deposit their segregated waste into the appropriate bins.

**Figure 5-1: Example of Bin Segregation**

### 5.2.3 Waste Storage

Each apartment block in the Proposed Development will have its own waste storage area. Waste arisings from the creche will be stored in the middle block. Appendix A shows the ground floor layout of each apartment block and the location of the waste storage areas.

The townhouses have available storage for 2 no. 240L bins, one recycling bin, and one general waste bin. The screened bin stores will be located at the front of the mid-row townhouses, while the end terrace townhouses will have rear garden storage. Appendix B shows the proposed waste storage locations for the townhouses. However, due to new legislation in Ireland as of 1st January 2024 as required by the European Union (Household Food Waste and Bio-waste) (Amendment) Regulations 2023 (S.I. No. 679/2023) [8] "*All households must have access to a brown bin service for the collection of food and garden waste*"; therefore, it is recommended that an organics bin is included for all townhouses.

Table 5-9 below outlines waste storage available as part of the Proposed Development. Waste arising from the creche will be stored in the middle block and, therefore, is included in the waste-arising storage calculations for the middle block.

**Table 5-9: Bin Storage Available for each Unit Type**

| Unit Type | Bin Availability |
|---|---|
| West Block | 4 x 1100L Bins |
| Middle Block (including Creche) | 4 x 1100L Bins |
| East Block | 3 x 1100L Bins |
| Townhouses | 2 x 240L Bins per townhouse |

A breakdown of bins that are proposed to be included in each unit type which utilises storage space provided is outlined in Table 5-10 below, it is also proposed that 1 no. organics bin is provided for each townhouse; consideration should be given to the use of smaller 140L bins to allow for the increased number of bins in the screened storage area.

**Table 5-10: Proposed Bin Type in Each Unit Type Waste Storage Area**

| Unit Type | West Block | Middle Block and Creche | East Block | Townhouses |
|---|---|---|---|---|
| Dry Mixed Recycling | 1 x 1100L | 1 x 1100L | 1 x 1100L | 1 x 240L per townhouse |
| Mixed Non-Recycling | 2 x 1100L | 2 x 1100L | 1 x 1100L | 1 x 240L per townhouse |
| Organic Material | 1 x 1100L | 1 x 1100L | 1 x 1100L | 1 x 240L per townhouse |

The weekly storage requirements for each waste type have been calculated considering the BS5906:2005 Waste Management in Buildings—Code of Practice [6]. The required storage for each unit type is outlined in Table 5-11 below.

**Table 5-11: Weekly Waste Arising Storage Requirements for the Proposed Development**

| Waste Type | Number of 1100L bins required per week West Block | Number of 1100L bins required per week Middle Block and Creche | Number of 1100L bins required per week East Block (Litre) | Number of 240L bins required per week per Townhouse |
|---|---|---|---|---|
| Dry Mixed Recycling | 3 | 3 | 2 | 0.05 |
| Mixed Non-Recycling | 7 | 9 | 5 | 0.13 |
| Organic Material | 2 | 3 | 1 | 0.04 |

General design considerations should be considered in the provision of waste storage area at the Proposed Development:

- Signage shall be installed to inform residents of their obligations to reduce waste, segregate waste within the home and dispose of waste in the correct bin will be clearly posted within the waste storage area;
- All bulk waste storage bins shall be clearly labelled with exactly what type of waste materials may be deposited within them;
- Sufficient communal storage area to satisfy the three-bin system;
- In larger apartment schemes, consideration should also be given to the provision of separate collection facilities for other recyclables such as glass and plastics;
- Waste storage areas must be adequately ventilated so as to minimise odours and potential nuisance from vermin/flies and taking account the avoidance of nuisance for habitable rooms nearby;
- Provision in the layout for sufficient access for waste collectors, the proximity of, or ease of to, waste storage areas from individual apartments, including access by disabled people;
- Waste storage areas should not pose any safety risks to users and should be well-lit and have a non-slip surface;
- Waste storage areas should not be on the public street and should not be visible to or accessible by the general public. Appropriate visual screening should be provided, particularly in the vicinity of apartment buildings;
- The waste storage area shall be fitted with sensor lighting;
- The waste storage area shall be fitted with CCTV cameras;

- The waste storage areas shall include ground drainage to allow for their regular cleaning and disinfection; and,
- A battery box shall also be provided.

An example of a communal waste storage area is shown in Figure 5-2 below.

**Figure 5-2: Example of a communal waste storage area.**


### 5.2.4 Waste Collection

In order to fulfil the waste-arising storage requirements for each apartment blocks outlined in Table 5-11 above while considering the available storage presented in Table 5-9 a collection frequency of 5 no. occasions a week would be required to provide suitable waste storage for the Proposed Development, Table 5-12 below outlines the available storage based on 5 no. collections a week.

**Table 5-12: Available Waste Arising Storage Based on 5 No. Weekly Bin Collections**

| Unit Type | West Block | Middle Block and Creche | East Block (Litre) |
|---|---|---|---|
| Dry Mixed Recycling | 5 | 5 | 5 |
| Mixed Non-Recycling | 10 | 10 | 5 |
| Organic Material | 5 | 5 | 5 |

Considering these calculations assume full occupancy of the Proposed Development, it can be considered the ‘worst-case’ scenario, and therefore, it is expected that actual waste generation will be lower and proposed collection frequencies may be reduced.

As presented in Table 5-11 The townhouses will be provided with ample waste storage; therefore, it is proposed that each waste type be collected bi-weekly.

Residents of the Proposed Development will be responsible for taking glass waste to a bottle bank facility.

Numerous private contractors provide waste collection services in the Cork City area. All waste contractors servicing the proposed development must hold a valid waste collection permit for the specific waste types collected. All waste collected must be transported to registered/permitted/licensed facilities only.

The nominated waste contractors will collect waste on agreed-upon days and times. The Proposed Developments Management staff will bring all bulk waste bins from the communal bin storage areas to the designated bin collection areas within the development at road level.

Emptied bins shall be returned to the bin storage areas immediately following collection.

### 5.2.5 Additional Waste Materials

In addition to the typical waste materials that are generated on a daily basis, there will be some additional waste types generated from time to time that will need to be managed separately. A non-exhaustive list is presented below.

#### 5.2.5.1 Plastic Bottles

Most drink containers can be recycled via the deposit return scheme, such as bottles, cans and tins made from plastic once they are between 150ml and 3 litres in size and have the Re-turn logo on them. You Containers can be returned at the shops using a Reverse Vending Machine ('RVM'). Locations of RVM machines can be found via the Re-turn website (www.re-turn.ie).

#### 5.2.5.2 Green Waste

Green waste may be generated from external landscaping and internal plants/flowers, which can be placed in organic waste bins. If substantial green waste is generated from external landscaping, this can be removed by a landscape contractor or brought to a civic amenity centre.

#### 5.2.5.3 Batteries

A take-back service for waste batteries and accumulators (e.g. rechargeable batteries) is required to comply with the S.I. No. 283/2014 - European Union (Batteries and Accumulators) Regulations 2014, as amended. Per these regulations, consumers can bring their waste batteries to their local civic amenity centre or can return them free of charge to retailers which supply the equivalent type of battery, regardless of whether or not the batteries were purchased at the retail outlet and irrespective of whether or not the person depositing the waste battery purchases any product or products from the retail outlet.

#### 5.2.5.4 Waste Electrical and Electronic Equipment ('WEEE')

The WEEE Directive (Directive 2002/96/EC) and associated Waste Management ('WEEE') Regulations have been enacted to ensure a high level of electronic and electrical equipment recycling. In accordance with the regulations, consumers can bring their waste electrical and electronic equipment to their local recycling centre. In addition, consumers can return WEEE within 15 days to retailers when they purchase new equipment on a like-for-like basis. Retailers are also obliged to collect WEEE within 15 days of delivery of a new item, provided the item is disconnected from all mains, does not pose a health and safety risk and is readily available for collection.

#### 5.2.5.5 Printer Cartridge / Toners

Waste printer cartridges/toners generated by residents can usually be returned to the supplier for free or brought to a civic amenity centre.

#### 5.2.5.6 Chemicals

Chemicals (such as solvents, paints, adhesives, resins, detergents, etc) are largely generated from building maintenance works. Such works are usually completed by external contractors who are responsible for the off-site removal and appropriate recovery / recycling / disposal of any waste materials generated.

Any waste cleaning products or waste packaging from cleaning products that are classed as hazardous (if they arise) generated by the residents should be brought to a civic amenity centre.

#### 5.2.5.7 Light Bulbs

Light bulbs generated by residents should be taken to the nearest civic amenity centre for appropriate storage and recovery / disposal.

#### 5.2.5.8 Textiles

Where possible, waste textiles should be recycled or donated to a charity organisation for reuse. Residents will be responsible for disposing of waste textiles appropriately.

#### 5.2.5.9 Waste Cooking Oil

If the residents generate waste cooking oil, this can be brought to a civic amenity centre or placed in the organic bin.

#### 5.2.5.10 Furniture & Other Bulky Waste Items

Furniture and other bulky waste items (such as carpet, etc.) may occasionally be generated by the residents. If residents wish to dispose of furniture, this can be brought a civic amenity centre.

### 5.2.6 Training

Copies of the C&OWMP will be made available to all relevant personnel on-site and included in the site induction information. All site personnel and sub-contractors will be instructed about the objectives of the C&OWMP and informed of the responsibilities which fall upon them as a consequence of its provisions. Where source segregation and material reuse techniques apply, each member of staff will be given instructions on how to comply with the project C&OWMP.

### 5.2.7 Assignment of Responsibilities

The Proposed Developments management company shall be responsible for the implementation of all aspects of the C&OWMP. The management company shall employ an appropriately qualified and experienced staff member responsible for all waste management aspects at the Proposed Development. All accommodation units shall be provided with a waste management information document, which shall clearly state the methods of source waste segregation, storage, and recycling initiatives that shall apply to the management of the development.

The Proposed Developments management company shall be responsible for managing all domestic waste generated by apartment residents and ensuring correct storage before collection by an appropriately waste-permitted waste collection company.

A daily inspection of the waste storage areas shall be carried out and shall sign a daily checklist which shall be displayed within the area.

The Proposed Developments management company shall maintain and clean all waste storage areas to prevent odours and the attraction of vermin.

# 6 MONITORING AND IMPLEMENTATION OF THE C&OWMP

## 6.1 Complaints, Comments and Enquiries

Any complaint related to the Site will be dealt with by the Site Manager. The source of the complaint will be investigated immediately. If possible, the source of the complaint will be stopped, moved or modified immediately. All complaints must be recorded including details of the complaint and any required corrective actions.

## 6.2 Site Visits and Evaluation of Compliance

An Environmental clerk of works ('ECoW') will undertake periodic site inspections as required during the works. The aim of these visits will be to ensure compliance with procedures and mitigation measures set out in the C&OWMP.

This will be done by means of a Site inspection and the auditing of different aspects of the works including documentation. Checklists for compliance will be drawn up; corrective actions will be required for any non-compliances identified, and follow-up surveys will be scheduled to ensure compliance.

All monitoring results and reports detailing the compliance or otherwise, of the works will be maintained at the Site office. In the event of an incident, an incident report will be completed and that will document both the cause of the incident and the corrective action taken to address the incident. These incident forms will be available for inspection at the Site office.

## 6.3 Control of Records

Environmental records, including waste management records, will be maintained in accordance with the respective company procedure and legal requirements. The records are to be maintained, in either hard copy or electronic format as required by the individual procedure that the records relate to, in such a way that they are readily identifiable, retrievable and protected against damage, deterioration or loss. The procedure that the records relate to also specifies the retention time for the records and who has the authority to dispose of them.

# 7 IMPLEMENTATION, REVIEW AND TRAINING

The Appointed Construction Project Manager and Operational Facility Manager will develop an updated site-specific C&OWMP(s) prior to the commencement of Site works and ensure compliance with it. Each subcontractor will appoint a point of contact for matters related to environmental protection.

Copies of the C&OWMP(s) will be available to all on-site personnel. All Site personnel and sub-contractors will be instructed about the objectives of the C&OWMP and informed of the responsibilities which fall upon them as a consequence of its provisions.

All staff will receive environmental awareness training as part of their Site induction to ensure they know their responsibilities under the C&OWMP. This will include:

- Site induction, including relevant environmental issues;
- Method statement and risk assessment briefings;
- Toolbox talks, including instruction on incident response procedures; and,
- Key task-specific environmental issue briefings.

The C&OWMP(s) will be reviewed as needed if the scope of works changes significantly or if the need is identified following a site audit.

## 7.1 Training Awareness and Competence

Site personnel shall be trained appropriately to ensure they are competent to perform tasks that have the potential to cause a significant environmental impact as part of the Proposed Development. Competence is defined in terms of appropriate education, training and experience.

All managers and supervisors will be briefed on the C&OWMP.

Method Statements will be prepared for specific activities prior to the works commencing and will include environmental management / best practice measures and emergency preparedness appropriate to the activity. The Site Manager or nominated deputy will review key Method Statements prior to their issue.

Method Statement briefings will be given before personnel carry out key activities for the first time.

# 8 CONCLUSIONS

This C&OWMP document outlines the management procedures to enable the Appointed Site Manager to respond to potential environmental risks from construction and operational activities on-site.

The appointed Contractors and Management Companies will be required to develop an updated C&OWMP prior to the commencement of each phase, which will, if necessary, be submitted to the Planning Authority for approval.

The implementation of all of the management measures outlined in this C&OWMP will ensure that the construction programme will be completed without significant adverse effects on the surrounding environment and minimise waste disposal in so far as is possible.

# REFERENCES

[1] SWR, “Southern Region Waste Managemnt Plan 2015 - 2021,” Southern Waste Region, 2017.

[2] Government of Ireland, “Waste Action Plan for a Circular Economy,” Government of Ireland, 2020.

[3] Cork City Council, “Cork City Development Plan 2022-2028,” Cork City Council, Cork, 2022.

[4] EPA, “Best Practice Guidelines on the Preparation of Resource & Waste Management Plans for Construction and Demolition Projects,” EPA, 2021.

[5] European Union, “Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain directives,” EU, 2008.

[6] British Standards Institution, “Waste management in buildings — Code of practice,” BSI, London, 2005.

[7] Environmental protection Agency, “Household Waste Statistics for Ireland,” EPA, Wexford, 2024.

[8] European Union, “S.I. No. 679/2023 - European Union (Household Food Waste and Bio - Waste) (Amendment) Regulations 2023,” European Union, Brussels, 2023.

# APPENDICES

# APPENDIX A

WILTON SHOPPING CENTRE
CAR PARK

WILTON SHOPPING CENTRE
OVERFLOW CAR PARK

FOR BOUNDARY TREATMENT DETAILS,
SEE LANDSCAPE ARCHITECTS' DRAWING NO.
**7848-PHL-00-ZZ-DR-L-1001**

EAST BLOCK
ESB SUBSTATION &
OFFLOAD ROOM

GATED SECONDARY
ENTRANCE FROM
STREET TO EAST BLOCK

SITE NOTICE
LOCATION

FOR BOUNDARY TREATMENT DETAILS,
SEE LANDSCAPE ARCHITECTS' DRAWING NO.
**7848-PHL-00-ZZ-DR-L-1001**

SITE NOTICE
LOCATION
CARDINAL COURT

SITE NOTICE
LOCATION

FOR DETAILS ON PROPOSED JUNCTION,
SEE CIVIL ENGINEER'S DRAWING NO.
**23215-BMD-ZZ-XX-DR-C-11100**

FOR BOUNDARY TREATMENT DETAILS,
SEE LANDSCAPE ARCHITECTS' DRAWING NO.
**7848-PHL-00-ZZ-DR-L-1001**

TOWNHOUSE BLOCK A

TOWNHOUSE BLOCK B

WEST BLOCK
FFL +14.000

MIDDLE BLOCK
FFL +13.500

EAST BLOCK
FFL +14.900

CRECHE
FFL +13.275

FORMAL SQUARE

BIKE SHELTER 60 SPACES

BIKE SHELTER 60 SPACES

BIKE SHELTER 60 SPACES

GENERATOR COMPOUND

COVERED BIN STORE

RETAINING WALL

WAREHOUSE

WAREHOUSE

ESB NETWORKS
BUILDING

ESB COMPOUND

CARDINAL COURT

SARSFIELD ROAD

Cork
Corcaigh

ORIGINAL SHEET SIZE = A1

| REV | DATE | DRN | NOTES |
|---|---|---|---|
| B | 05.12.2024 | AK | LAYOUT & SITE BOUNDARY REVISED |
| A | 14.11.2024 | AK | ISSUED FOR COMMENT |

NOTES

**LEGEND**

- SITE BOUNDARY
- EXISTING TREES
- PROPOSED TREES
- ROOT PROTECTION AREA
- RETAINING WALL
- APARTMENT BLOCK ENTRANCE

**SITE METRICS**

| | |
|---|---|
| **SITE AREA:** | 2.61HA |
| **PUBLIC OPEN SPACE:** | 3545m² |
| **PODIUM DECKS:** | 1487m² |
| **DENSITY:** | 133 DWELLINGS/HA |

SEE LANDSCAPE ARCHITECTS' DRAWINGS FOR DETAILS ON PLANTING AND SURFACE TREATMENTS

**PARKING**

148 PARKING SPACES
90 UNDER-PODIUM
58 IN LANDSCAPE

0.43 PARKING RATIO

503 BICYCLE PARKING SPACES

**NORTH**

JOB
LDA WILTON, SARSFIELD ROAD
LRD

CLIENT
LAND DEVELOPMENT AGENCY

**PLANNING PERMISSION**

DRAWING
PROPOSED SITE LAYOUT - GROUND LEVEL

DATE NOVEMBER 2024 | SCALE 1:500@A1
DRN AK | REVISION A
CHECKED PM

DWG NUMBER
WLT-06 SW-ZZ- DR-RAU-A 1003

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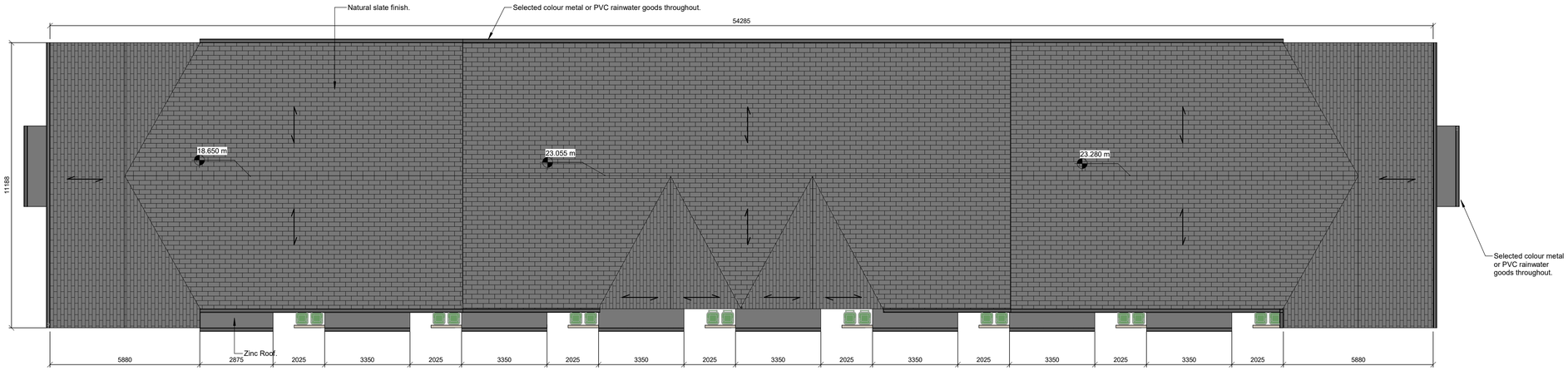
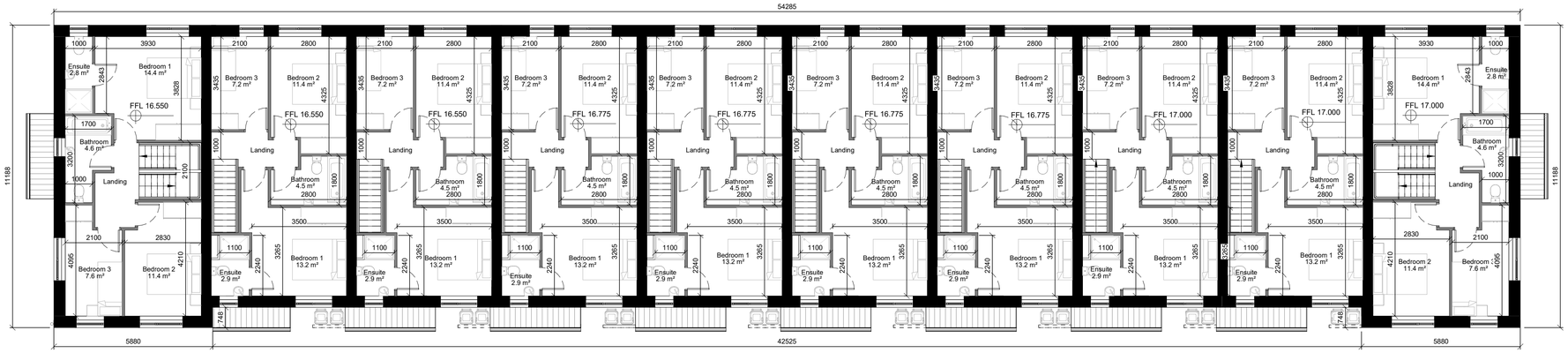
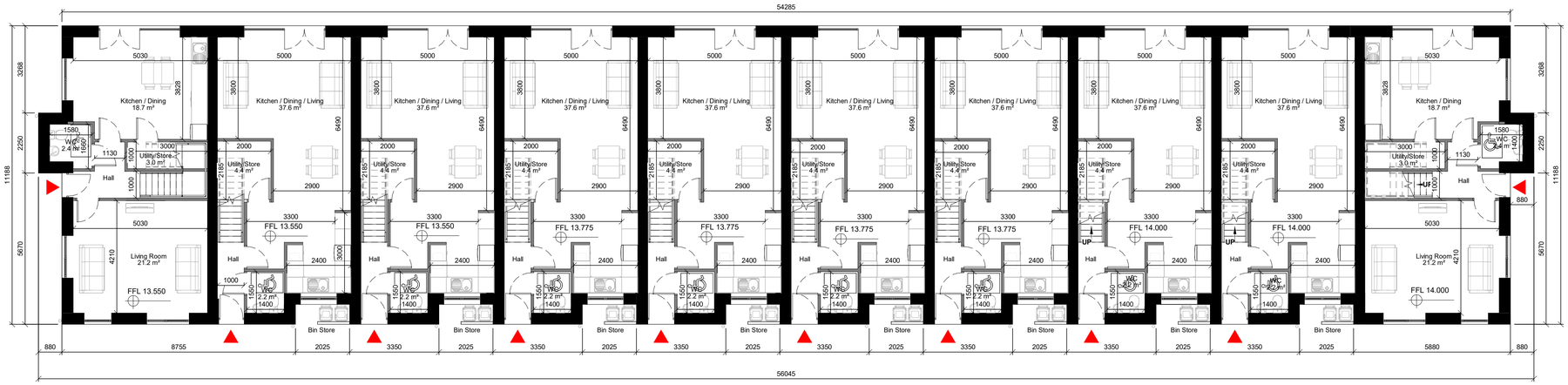
# APPENDIX B




RF - Roof Plan
1 : 100




L01 - First Floor
1 : 100




L00 - Ground Floor
1 : 100

**Notes:**

- Do not scale from this drawing. Use figured dimensions in all cases.
- Verify dimensions on site and report any discrepancies to the Architect immediately.
- This drawing to be read in conjunction with the Architect's Specification.
- © This drawing is copyright and may only be reproduced with the Architect's permission.

**Drawing Notes:**

**LEGEND**

▶ ENTRANCE

**NORTH**

Issues & Revisions

| Rev. | Date | Drwn | Details of Issue / Revision |
|---|---|---|---|

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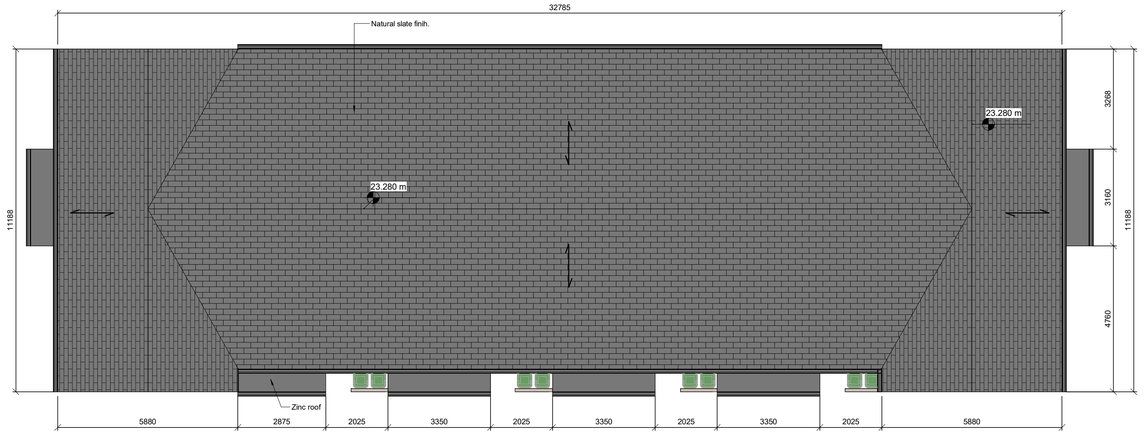
Client Details:
**LDA**

Project Details:
**LDA Wilton Sarsfield Road LRD**

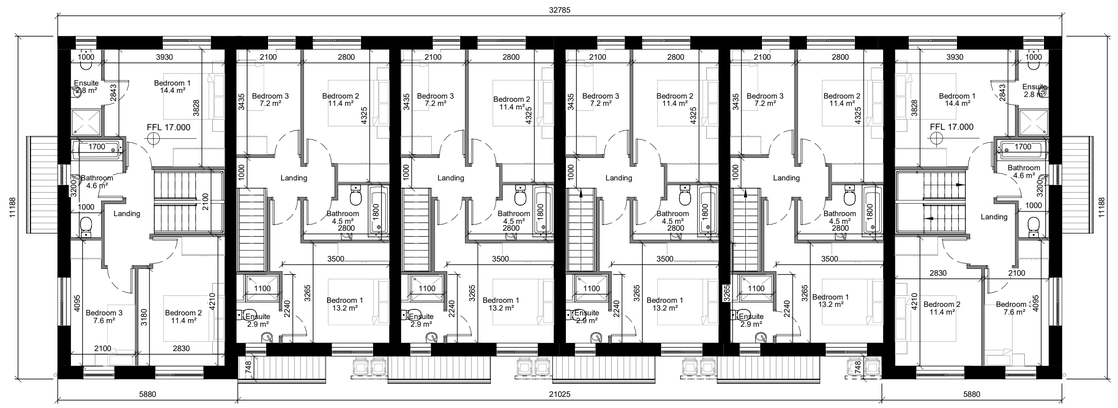
Drawing Title:
**Townhouse Block A Floor Plans**

| Job No. | Sheet Size: | Scale @A1: | Status | Purpose of Issue |
|---|---|---|---|---|
| **P23-081C** | A1_L | 1 : 100 | **P02** | **S32B SUBMISSION** |

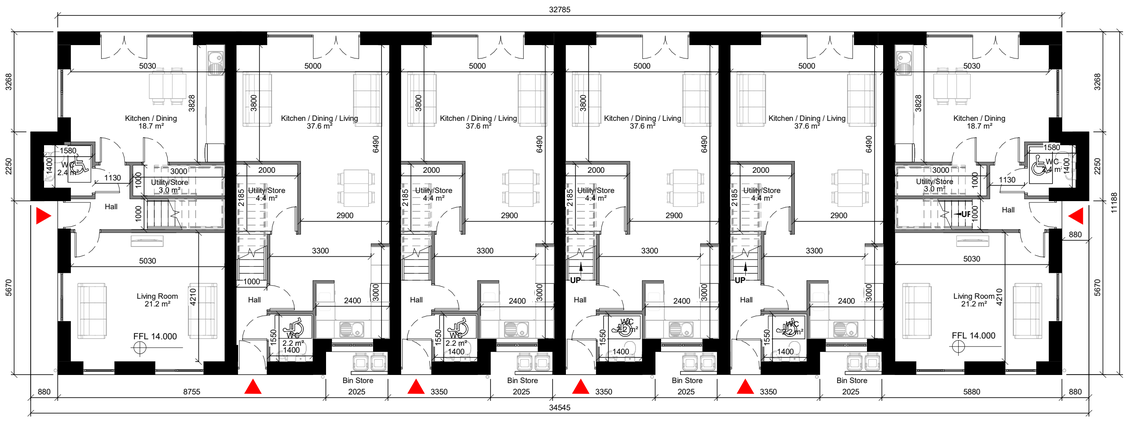
| Issue Date: | Drawn By: | Reviewed By: | Project - System - Spatial Zone - Level - Type - Originator - Role - Number | Revision |
|---|---|---|---|---|
| AUGUST 2024 | AK | PM | **WLT-02-TH2-L00-DR-RAU-AR-1102** | |




RF - Roof Ridge
1 : 100




L01 - First Floor
1 : 100




L00 - Ground Floor
1 : 100

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**Drawing Notes:**

**LEGEND**

ENTRANCE

**NORTH**

Issues & Revisions

| Rev. | Date | Drwn | Details of Issue / Revision |
|---|---|---|---|

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Client Details:
**LDA**

Project Details:
**LDA Wilton Sarsfield Road LRD**

Drawing Title:
**Townhouse Block B Floor Plans**

| Job No. | Sheet Size: | Scale @A1: | Status | Purpose of Issue |
|---|---|---|---|---|
| **P23-081C** | A1_L | 1 : 100 | **P02** | **S32B SUBMISSION** |

| Issue Date: | Drawn By: | Reviewed By: | Project - System - Spatial Zone - Level - Type - Originator - Role - Number | Revision |
|---|---|---|---|---|
| AUGUST 2024 | AK | PM | **WLT-02-TH1-L00-DR-RAU-AR-1101** | |