FEHILY TIMONEY

DESIGNING AND DELIVERING
A SUSTAINABLE FUTURE

PROPOSED DEVELOPMENT OF A HEALTHCARE WASTE MANAGEMENT FACILITY AT BLARNEY BUSINESS PARK

Resource and Waste Management Plan (RWMP)

Prepared for:

SRCL Ireland Ltd (T/A Stericycle)

Stericycle®

We protect what matters.

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GLOSSARY

Term	Definition	Source
By-Product	A substance or object, resulting from a production process, the primary aim of which is not the production of that item, may be regarded as not being waste but as being a by-product only if the following conditions are met: (a) further use of the substance or object is certain. (b) the substance or object can be used directly without any further processing other than normal industrial practice. (c) the substance or object is produced as an integral part of a production process; and (d) further use is lawful in that the substance or object fulfils all relevant product, environmental and health protection requirements for the specific use and will not lead to overall adverse environmental or human health impacts.	Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3
Disposal	Means any operation which is not recovery, even where the operation has as a secondary consequence the reclamation of substances or energy.	Waste Framework Directive 2008/98/EC
Economic Operator	See Producer.	Waste Framework Directive 2008/98/EC
Prevention	Measures taken before a substance, material or product has become waste, that reduce: (a) the quantity of waste, including through the re-use of products or the extension of the life span of products. (b) the adverse impacts of the generated waste on the environment and human health; or (c) the content of harmful substances in materials and products.	Waste Framework Directive 2008/98/EC
Producer	Product or By-Product generator	Communication from the Commission to the Council and the European Parliament on the Interpretative Communication on waste and by-products
Product	All material that is deliberately created in a production process. In many cases it is possible to identify one (or more) 'primary' products, this or these being the principal material(s) produced.	Communication from the Commission to the Council and the European Parliament on Interpretative Communication on waste and by-products

Term	Definition	Source
Recovery	Any operation, the principal result of which is waste serving a useful purpose by replacing other materials which would otherwise have been used to fulfil a particular function, or waste being prepared to fulfil that function, in the plant or in the wider economy. Annex II sets out a non-exhaustive list of recovery operations.	Waste Framework Directive 2008/98/EC
Recycling	Any recovery operation by which waste materials are reprocessed into products, materials or substances, whether for the original or other purposes. It includes the reprocessing of organic material but does not include energy recovery and the reprocessing into materials that are to be used as fuels or for backfilling operations.	Waste Framework Directive 2008/98/EC
Reuse	Any operation by which products or components that are not waste are used again for the same purpose for which they were conceived.	Waste Framework Directive 2008/98/EC
Uncontaminated soil	Virgin soils, or soils which do not exhibit any of the 'properties of waste which render it hazardous'	Communication from the Commission to the Council and the European Parliament on the Interpretative Communication on waste and by-products
Waste	Means any substance or object which the holder discards or intends or is required to discard.	Waste Framework Directive 2008/98/EC
Waste Producer	Anyone who produces waste	Waste Framework Directive 2008/98/EC

1. INTRODUCTION AND PROJECT BACKGROUND

SRCL Ireland Ltd (trading as and hereinafter referred to as 'Stericycle' or the 'Applicant') has commissioned Fehily Timoney (FT) to prepare a Resource Waste Management Plan (RWMP) as part of its proposed development of a Healthcare Waste Treatment and Transfer Facility at an existing vacant light-industrial/warehouse building located at Block 8003, Blarney Business Park, Shean Upper, Blarney, County Cork, T23 EYH5.

The proposed development will comprise the installation and operation of a Healthcare Waste Treatment and Transfer Facility at the existing vacant light-industrial/warehouse building at the development site. This facility will accept up to 15,000 tonnes of packaged healthcare waste per annum for management and will provide healthcare waste management capacity for the southern and western regions of Ireland.

This RWMP has been prepared in accordance with the EPA's Best Practice Guidelines for construction and demolition (C&D) waste management which promotes a systematic and sustainable approach to managing C&D waste throughout the project lifecycle.

This plan aims to implement the principles of the Circular Economy Action Plan by avoiding the use of unnecessary resources in the first place and once used, to maximize the use of those resources. The RWMP acknowledges the value of all materials and strives to prevent them from becoming waste. When waste is unavoidable, the RWMP ensures that its management during the proposed development is undertaken in accordance with the current legal and industry standards, including: The Waste Management Act as amended, and associated Regulations, Protection of the Environment Act 2003 as amended, and the Litter Pollution Act 2003, as amended.

This RWMP is designed to maximize recycling, reuse, and recovery of waste, prioritizing diversion from landfills wherever possible. This plan aligns with the Waste Hierarchy Principles of the Waste Framework Directive[1] (see Figure 1-1 below), by promoting and driving the effective management of materials to reduce unnecessary use of new products, optimize the use of secondary materials, and promote on site reuse to prevent waste generation. Additionally, this document provides guidance for the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

The purpose of this RWMP is also to provide information necessary to ensure that the management of waste at the proposed development is undertaken in accordance with legal and policy framework for construction and demolition (C&D) waste in Ireland. It presents estimates of the type and volume of waste expected to be generated at the site and makes recommendations for the management of various waste streams.

According to the Waste Directive, waste is defined as any substance or object that the holder discards, intends to discard or is required to discard. This definition is a key element in the waste management. Contractors on site should minimize discarding and prioritize reuse, only disposing of materials when necessary.

This plan is limited to solid resources and wastes.

[1] Waste Framework Directive - European Commission

Figure 1-1: Waste Hierarchy (Source: Waste Framework Directive)

1.1 Live Document

This RWMP report shall be considered as a 'live document' that shall be reviewed and updated as appropriate prior to the commencement of any construction works onsite. It shall be reviewed on appointment of the Resource Manager and Project Manager. It shall be reviewed and updated upon any significant design changes, waste management legislation, or as a result of any comments or corrective actions from any audits and inspections.

Documentation and reporting required as part of this RWMP as outlined in Section 5 of this report will be updated on an ongoing basis prior to and during the works.

1.2 Legislation and Guidance

This following legislation and guidance documents have been referred to during the preparation of this document:

- Waste Framework Directive 2008/98/EC;
- Landfill Directive 1999/31/EC;
- Annex II to Directive 1999/31/EC (the Landfill Directive), Council Decision of 19 December 2002 (203/33/EC), criteria and procedures for the acceptance of waste at landfills outlined therein will be applied to any waste dispatched off-site. This includes basic characterisation of the materials, testing for total pollutant content and leaching behaviour, and on-site verification prior to dispatch;
- European Communities (Waste Directive) Regulations, 2020 (as amended);
- Waste Management (Facility Permit and Registration) Regulations 2007 (as amended);
- The Waste Management (Collection Permit) Regulations, 2007 (as amended);
- The Local Government (Water Pollution) Acts, 1977 & 1990;
- The Waste Management Act, 1996 and amendments;
- Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998);
- Waste Management (Trans frontier Shipment of Waste) Regulations, 1998 (S.I. No. 149 of 1998);

- A Resource Opportunity – Waste Management Policy in Ireland;
- Best Practice Guidelines for the Preparation of Resource and Waste Management Plans for Construction and Demolition Projects;
- National Hazardous Waste Management Plan 2021 – 2027;
- Guidance on Soil and Stone By-products in the context of article 27 of the European Communities (Waste Directive) Regulations 2011, Version 3;
- By-Product Guidance Note, A Guide to by-products and submitting a by-product notification under Article 27 of the European Communities (Waste Directive) Regulations 2011 (S.I. No. 126 of 2011);
- A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020 – 2025;
- National Waste Management Plan for a Circular Economy 2024 - 2030;
- Waste Minimisation in Construction (SPU SP 133);
- Waste Classification, List of Waste and Determining if Waste is Hazardous or Non-hazardous; and
- Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed.

1.3 National and Regional Policy

The Waste Management Act 1996 requires Local Authorities to make a waste management plan either individually or collectively for their functional areas. In 2015 local authorities established three Regional Waste Management Planning Offices to develop and implement three regional waste management plans on their behalf. Following an evaluation, it was recommended that a single plan be prepared to replace the existing regional plans. This Plan has been prepared to support and supplement the wider policy base and includes specific targets, policies and actions to enable the waste and resource sector to meet the circularity challenge and accelerate the transition to a circular economy.

This National Waste Management Plan for a Circular Economy sets out a framework for the prevention and management of waste in Ireland for the period 2024 to 2030.

The proposed development is located in Cork City Council which is now governed by the National Waste Management Plan for a Circular Economy 2024-2030.

The strategic vision of the Plan is to rethink the approach to managing waste, and to move towards a 'circular economy' approach where resources are reused or recycled as much as possible and the overall generation of waste is minimised. The Plan has set out a number of specific and measurable performance targets in relation to construction and demolition waste which includes:

- Achieve a 2% reduction per annum is proposed for total construction and demolition waste to achieve a cumulative 12% reduction by 2030 (Baseline of 9 million tonnes).
- Achieve 70% of C&D waste sent for reuse, recycling and other recovery of construction and demolition waste (excluding natural soils and stones and hazardous wastes).

2. PROJECT INFORMATION

2.1 Site Description

The proposed development site is located at Blarney Business Park in the north-west of the Cork City area (ca. 7.2 km north-west of Cork City Centre). It is directly east of the settlement of Blarney.

Blarney Business Park is an established business park characterised by commercial, light-industrial and industrial land use. Construction of the Business Park commenced in the mid-2000's. In 2018, Blarney Business Park was acquired by the developer JCD Group Ireland and it has been developed significantly since then.

The proposed development site is ca. 1.32 hectares and is located at the centre of the business park. A light-industrial/warehouse building and associated site infrastructure has been constructed on-site.

The site and business park can be accessed directly from the N20 Cork to Limerick Road, which runs to the immediate west of the site. The Cork to Limerick railway line runs directly north of the business park.

The Shean Upper Stream is situated ca. 230 m south-west of the site. This drains in a southerly direction into the Clogheenmilcon Fen ca. 690 m to the south the site. Clogheenmilcon Sanctuary Walk travers the area of the fen. The fen drains into the Blarney River at a point ca. 930 m to the south-west of the site.

Dispersed rural one-off housing and agricultural land delineated by hedgerow surrounds the business park in all cardinal directions. Areas of forestry are present in the area surrounding the business park, to the west, south-west and south. Ring Wood is situated 415 m to the west of the site.

Residential estates and associated land use that lie within the settlement of Blarney are situated to the north-west, west and south-west of the site. The nearest sensitive human receptors to the site are residential dwellings situated at Aisling Geal 470 m north-west of the site.

2.2 Project Description

The proposed development will comprise the installation and operation of Healthcare Waste Treatment and Transfer Facility at the proposed development site. The facility will accept up to 15,000 tonnes of packaged healthcare waste per annum for management and will provide healthcare waste management capacity for the southern and western regions of Ireland. The proposed development constitutes a change of use of the site.

The following additions/alterations to existing infrastructure on-site will be made to facilitate the proposed development:

1. The installation of plant and facilities inside the existing light-industrial/warehouse building on-site to accommodate healthcare waste management operations and associated commercial activities.
2. The installation of a multi-flue stack (1.5 m x 2.0 m) at the existing roof of the building.
3. Modifications to increase the height of 2 x rear station doors from 3.0 m to 4.0 m.

Waste management activities on-site will be undertaken entirely within the existing building on-site.

2.3 Planning Application

This RWMP has been prepared by FT on behalf of Stericycle to support their planning application for the proposed development.

According to the 'Best Practice Guidelines for the Preparation of Resource Management Plans for Construction and Demolition Projects' (EPA, 2021), planning authorities are advised to require the submission of an RWMP for all construction and demolition projects as best practice to inform the planning consent process. The level of detail required in the RWMP should correspond to the scale and complexity of the project and following tiers are recommended:

- Tier 1 (Smaller scale projects = simplified RWMP):
  - New residential development of less than 10 dwellings.
  - Retrofit of 20 dwellings or less.
  - New commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 1,250 m^2.
  - Retrofit of commercial, industrial, infrastructural, institutional, educational, health and other developments with an aggregate floor area less than 2,000 m^2.
  - Demolition projects generating in total less than 100 m^3 in volume of C&D waste.
  - Projects above these thresholds are classed as Tier-2 projects.
- Tier 2 (Larger scale projects = bespoke RWMP):
  - Strategic Infrastructure Developments.
  - Strategic Housing Developments.
  - Infrastructure projects (road, rail, gas, energy).
  - Any project above the thresholds listed in Tier 1.

The proposed development is classed as a Tier 2- project, requiring a bespoke RWMP. The principal reason for this is that the development is above the threshold where the retrofit of the industrial unit has an aggregate floor area greater than 2,000 m^2.

2.4 Scale of the Development

2.4.1 Proposed Healthcare Waste Treatment and Transfer Facility

A Healthcare Waste Treatment and Transfer Facility will be installed inside the existing building on-site. This facility will accept packaged healthcare waste for on-site treatment and/or transfer off-site for recovery/recycling or disposal, as the case may, at third-party waste management facilities. It will also accept packed hazardous waste for transfer off-site for third party waste management facilities. It will have a 50-year lifespan.

This facility will be comprised of the following components:

- A Healthcare Waste Treatment Plant, consisting of a shredder; a steam injection auger, an overband magnet and associated handling, conveyance and water systems;
- a gas fired steam generation boiler to supply the steam auger;
- a Bin Washing System for re-usable containers;
- an air abatement system to treat waste gases arising at the treatment plant. This system will consist of a high efficiency particulate air (HEPA) filter, a coalescing vessel and a carbon filter bed;
- a stack emission point to air (via the roof of the existing building), which will emit waste gases from the treatment process and the gas fired steam raising plant;
- an emission point to sewer, where effluent arising from treatment process condensate and bin washing will be discharged;
- a Waste Re-packaging Facility for healthcare and hazardous waste being subject to re-packaging and transfer;
- designated waste storage areas/facilities for waste pending treatment; waste pending re-packaging and transfer; treated waste residues for transfer; and re-packaged waste for transfer. These storage areas/facilities will have impermeable surfaces and sealed drainage and all waste is stored in fully enclosed, leak-proof containers; and,
- a Sharps Container Management Facility.

2.4.2 Proposed Ancillary Facilities for Existing Building

The following ancillary facilities will be installed inside the existing building on-site to accommodate waste management operations and ancillary commercial activities.

- A main store;
- a cold store;
- a canteen;
- staff welfare facilities;
- office areas;
- a conference room;
- a laboratory;
- a mezzanine storage area
- a server room;
- a cleaners closet;
- a break out area; and
- a staff lobby.

2.4.3 Alterations to Existing Site Infrastructure

Existing site infrastructure on-site will be utilised by the Applicant to operate the proposed Healthcare Waste Treatment and Transfer Facility.

It is not proposed to increase the size of the existing water, gas, electricity, wastewater or stormwater connections to the site. Existing utility connections at the site are sufficient for accommodating the proposed development.

Some further minor alterations will be made to existing ancillary site infrastructure to accommodate the proposed Healthcare Waste Treatment and Transfer Facility. These are described below.

2.4.4 Multi-Flue Stack

A multi-flue stack (1.5 m x 2.0 m) will be installed at the roof of the existing building. Three flues be housed by this stack – a 600 mm for the proposed treatment process abatement plant, a 300 mm flue from the proposed gas fired steam raising plant, and a 300 mm flue that will serve to ventilate steam from the proposed bin wash process.

2.4.5 Modifications to Existing Station Doors

2 no. existing station doors to the rear of the existing building will be increased in height from 3.0 m to 4.0 m to accommodate unloading and acceptance of packaged healthcare waste from vehicles at these doors.

2.4.6 Proposed Firewater Retention System

A firewater retention system will be constructed/installed within the existing building on-site for the purpose of containing any firewater that may be generated in the event of a fire on-site. This system is depicted in Drawing Reference 2896-P-101 accompanying this planning application and will consist of the following:

- A concrete bund wall surrounding the outer perimeter of the facility building. This wall will 375 mm high.
- Automated Hazardous Material and Firewater Containment Barriers at access point gaps in the bund wall. This barrier will raise to a heigh of 375 mm when activated. It will be automatically triggered in the event of an emergency, spill or fire on-site. The specific systems will be Anhamm Liquid Stop Barriers which are self-closing, stainless steel barriers with chemical and age resistant Polytetrafluoroethylene (PTFE) seals.
- An automatic shut off penstock on a pneumatic valve to the foul drain from the facility.

In the event of a fire, these components will act in combination to ensure the internal area of the building can act as firewater retention structure. The system will provide complete retention of any firewater which could be generated in the event of a fire on-site. It has been designed in accordance with EPA Guidance on Retention Requirements for Firewater Run-off (EPA, 2019), and to retain ‘worst-case’ firewater volumes that could be generated in a fire at the facility.

The system will be constructed/installed and periodically inspected, tested and maintained in accordance with EPA requirements defined in the Industrial Emissions licence for the operational facility and Best Available Techniques defined for waste management facilities.

2.5 Construction of the Proposed Development

The construction works for the proposed development are minor, limited and small-scale in nature.

The installation of plant and facilities inside the existing building on-site will constitute the vast majority of the construction works to take place. Only minor construction works will be undertaken externally as part of the proposed development.

The proposed development does not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks.

2.5.1 Construction Programme

It is estimated that the construction phase of the proposed development will be 6 months in duration.

2.5.2 Construction Hours

Construction work will generally be carried out during daylight hours. Construction work will be confined to the following times (unless otherwise agreed with the Local Authority):

- Between 7:00 AM and 6:00 PM, Monday to Friday, and 8:00 AM to 2:00 PM on Saturdays. No construction work is permitted on Sundays or bank holidays.

2.5.3 Overview of Construction Works

The following construction works will be undertaken on-site as part of the proposed development:

- The installation of a temporary, small-scale construction compound inside the building on-site, including a site office, staff welfare facilities, material/product storage areas, waste storage areas and portable toilets.
- The carrying out of minor additions/alterations to existing ancillary site infrastructure located externally on-site; including the installation of a multi-flue stack at the roof of the existing building, and modifications to 2 no. existing station doors to the rear of the existing building.
- Haulage of plant, equipment and furnishings to the site.
- Temporary storage of plant, equipment and materials for building fit out on-site.
- The installation of the waste processing and handling plant and ancillary plant/equipment/facilities at the operational area inside the building. This will include the carrying out of minor concreting works for the footings for plant supports
- The construction/installation of a bin washing area/system and associated drainage system inside the building.
- The delineation/installation of waste storage areas/facilities.
- The installation of the Sharps Container Management Facility and associated ancillary equipment and facilities.
- The installation of firewater retention facilities inside the building. This will include the laying of a concrete pathway perimeter/bund wall and automatic raising barriers at rear entrances to the facility, and the installation of an automatic shut off penstock on a pneumatic valve to the foul drain from the facility.
- The installation/fit out of ancillary building facilities, including staff welfare facilities, office areas etc.

- The haulage of construction waste arising during the works from the site to off-site waste facilities for management.
- Decommissioning of the construction site, clean-up of the site and facility commissioning.

2.5.4 Construction Plant

A combination of the following mobile plant will be used during construction:

- Forklifts
- Mobile Elevated Working Platforms
- Mini-cranes
- Telehandlers

This mobile plant will be operated inside the building on-site for the vast majority of time, as the vast majority of construction works will take place inside the building.

2.6 Potential Resource Arisings

The proposed works at the site do not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks that may generate significant levels of waste.

Only minor levels of construction waste will be generated during the construction works. Therefore, it is not anticipated that materials will be generated on-Site which have the potential to be used as a resource on-site or elsewhere.

2.7 Non-Hazardous Waste Arisings

Non-hazardous C&D wastes that may arise on-site during the proposed development include:

- Minor quantities of incidental construction waste such as mixed municipal, organic waste, mixed dry recyclables and concrete.
- Metal, including steel, aluminium, and lead e.g. metal strapping.
- Timber off-cuts, broken pallets, damaged formwork, sheeting, hoarding etc.
- Plastics, e.g. packaging, material off cuts.
- Broken glass.
- Broken plasterboard or off cuts.

2.8 Potentially Hazardous Wastes Arising

All waste on this project will be managed as per the relevant waste management legislation and will be assessed using the Waste Hierarchy principles of Prevent, Reduce, Reuse, Recycle, Recover, and Dispose. The potentially hazardous wastes which could arise on site during the proposed development include:

- Chemicals, including solvents.
- Fuel/oil.
- Batteries.
- Electrical equipment.
- Paint.

3. ROLES AND RESPONSIBILITIES

3.1 Key Responsibilities

All parties involved in the Project will have responsibility for resource and waste management. Responsibility will vary at different stages of the project lifecycle. Key responsibilities are outlined in Table 3-1.

Table 3-1: Resource and Waste Management - Key Responsibilities

Responsible Party	Responsibility	Project Stage	Progress
Stericycle	Appointment of competent Design Team and Principal Contractor	All project stages	In progress
	Establish ambition and performance targets for Project	Project initiation	In progress
	Development of an RWMP	Preliminary design/ Planning stage	In progress
	Refinement and updating of the RWMP.	Detailed design stage	In progress
	Responsibility for material management and waste management from 'cradle to grave', including documentation of same	All project stages	In progress
Principal Contractor	Appoint competent and authorised contractors for managing material/waste generated during construction	Prior to commencement of construction	To be completed
	Appoint trained, competent Resource Manager	Prior to commencement of construction	To be completed
	Management of material and waste in accordance with provision of RWMP and planning conditions	Construction	To be completed

3.2 Specific Responsibilities

Specific responsibilities in relation to the construction project and resource and material management for the principal parties involved in the project are defined below:

3.2.1 Client

The client - Stericycle is responsible for the following:

- Employ competent designers and contractors to carry out the work.
- Development and updating of the RWMP throughout all project stages.
- Addressing material and waste management and sustainability requirements during the construction tendering process.
- Submitting and agreeing a final RWMP with the local authority prior to the commencement of works.
- Carrying out material and waste management in accordance with RWMP provisions.
- Carrying out of waste management in accordance with all relevant waste legislation, including the Waste Management Act 1996, as amended; Regulation 27 of the European Communities (Waste Directive) Regulations 2011, as amended, the Waste Management (Collection Permit) Regulations 2007, as amended, and the Waste Management (Facility Permit and Registration) Regulations 2007, as amended.
- Maintaining records of material and waste management activities, as per the requirements of this RWMP.

3.2.2 RWMP Team

FT will provide Stericycle ongoing RWMP advice and guidance on the following:

- Maintaining, updating and administering the RWMP, including material/waste quantities and management methods, through the detailed design, tendering and pre-construction construction stages.
- Incorporating relevant conditions imposed in the planning permission into the RWMP.
- Working with Client and the Contractor prior to and during the construction stage of the development, providing consultancy support on resource and waste management.

3.2.3 Contractor

The Contractor is responsible for the following:

- Reviewing, implementing and administering the RWMP during construction.
- Appoint a trained, competent Resource Manager.
- Procure hauliers/appropriately authorised waste collection contractors to haul material/waste off-site.
- Where practicable, identify reuse opportunities for material generated during construction - prior to commencement of relevant works.
- Coordinate completion of Regulation 'By-product' Notifications where necessary.
- Ensure off-site material reuse is undertaken in accordance with Regulation.
- Identify and utilise on-site reuse opportunities should such opportunities be foreseen during detailed design or arise during construction.
- Ensuring waste is managed in accordance with waste hierarchy principles.
- Management of material and waste in accordance with provision of RWMP and planning conditions.

- Track material and waste management, maintain appropriate records (as per this RWMP) and take all practicable measures to achieve the targets for material and waste management defined in this RWMP.
- Monitor compliance with the RWMP and take corrective action where necessary.
- Monitor material/waste management performance of hauliers, waste collection contractors and sub-contractors.

3.2.4 Designers

The duties of Designers are in addition to those under Section 16 of the Safety, Health and Welfare at Work Act, 2005 which requires Designers to ensure that the project is capable to being constructed to be safe, can be maintained safely and complies with all relevant health and safety legislation.

The Designers are responsible for the following:

- Ensure the design of the proposed development supports resource efficiency and the proper management of waste in accordance with waste hierarchy principles.

3.2.5 Project Supervisor Design Process (PSDP)

The duty of the Project Supervisor for the Design Process (PSDP) is to ensure co-ordination of the work of designers throughout the project.

The PSDP is responsible for the following:

- Communicate and work with design team to support resource efficiency and proper and safe waste management in accordance with the provisions of this RWMP.

3.2.6 Project Supervisor Construction Stage (PSCS)

The role of the Project Supervisor Construction Stage (PSCS) is to manage and co-ordinate health and safety matters during the construction stage. The PSCS is appointed before the construction work begins and remains in that position until all construction work on the project is completed.

The PSCS is responsible for the following:

- Communicate and work with the construction team to support resource efficiency and proper and safe waste management in accordance with the provisions of this RWMP.

Figure 3-1 provides detail on design and construction related roles and responsibilities during the construction project. It defines all other parties involved in the design and construction of the project that have a role to play in managing material and waste in accordance with this RWMP.

3.2.7 Subcontractors

Sub-contractors are responsible for the following:

- Adherence with the provisions of this RWMP and management of material/waste in accordance with waste Hierarchy principles and all relevant waste management legislation.

Roles and Responsibilities under Stericycle's RWMP for the construction of its Proposed Health Waste Treatment and Transfer Facility.

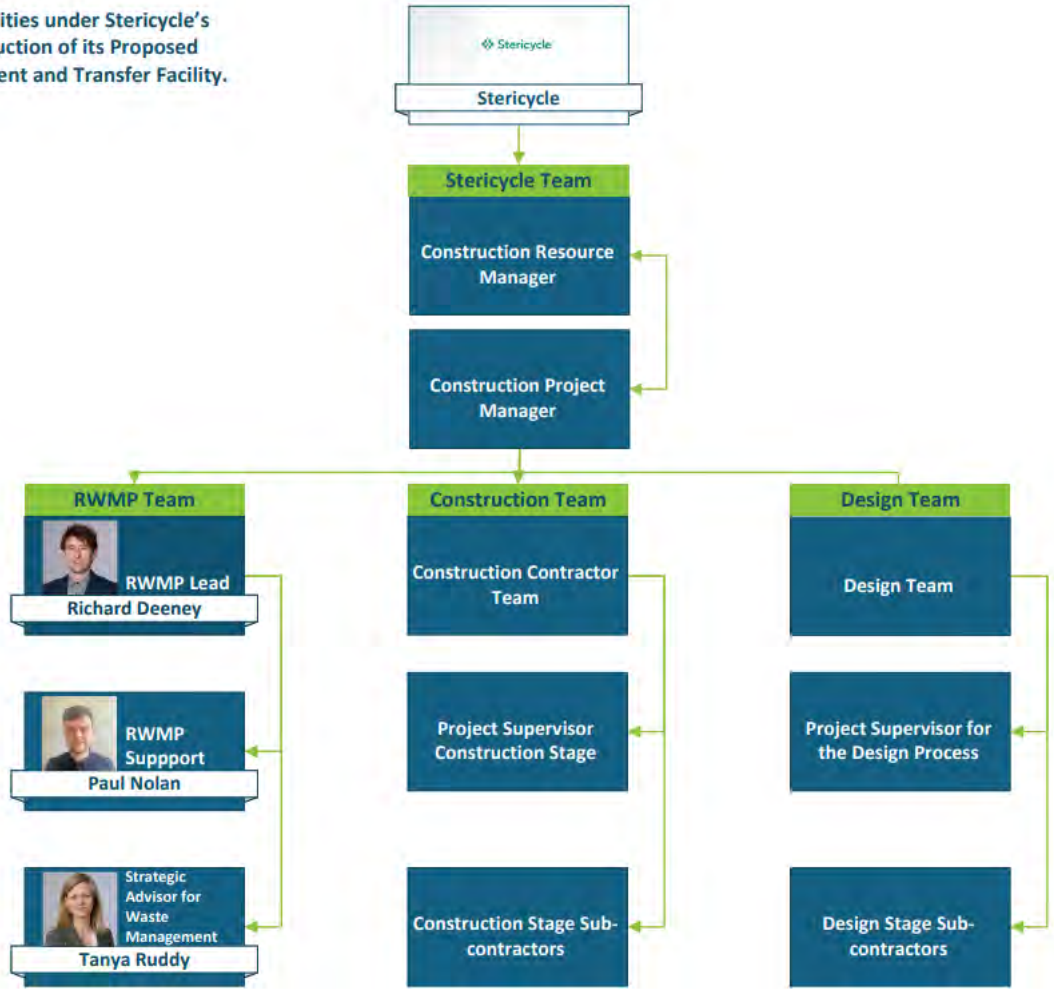

Figure 3-1: Roles and Responsibilities under Stericycle's RWMP

4. CONSTRUCTION PHASE KEY MATERIALS AND QUANTITIES

Building on the design principles, the Contractor will focus on the principles of optimising resources and reducing waste on this construction project through:

- Prevention
- Reuse
- Recycling
- Green Procurement Principles
- Off-Site Construction
- Materials Optimisation
- Flexibility and Deconstruction

Management of all resources and waste throughout the proposed development will be in accordance with EU, National, and Regional waste management policy and the principles of the Waste Hierarchy shown in Figure 1-1. Waste materials generated will be segregated on-site. Where the on-site segregation of certain waste types is not practical, off-site segregation will be carried out. There will be skips and receptacles provided to facilitate segregation at source where feasible. The appointed waste contractor will collect and transfer the wastes as receptacles are filled.

All waste arisings will be handled by an appropriately authorized waste contractor holding a current waste collection permit that covers the types of waste the contractor intends on collecting from the site. All waste arisings requiring disposal off-site will be reused, recycled, recovered, or disposed of at appropriately authorised waste management facilities.

4.1 Predicted Quantity of Material/Waste

The predicted quantity of materials/waste that will arise during the construction project (estimated utilising preliminary design detail) phase are presented in Table 4-1. These figures will be re-considered and updated at detailed design stage, at pre-construction and during construction, as necessary.

Only minor levels of construction waste will be generated during the construction works.

The works do not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks that may generate significant levels of waste.

There will be no oil/fuel storage or vehicle/plant maintenance activities undertaken on-site during construction.

Table 4-1: Predicted quantity of material/waste

Material/Waste	Estimated Quantities
Timber	< 33 tonnes
Sanitary effluent	< 25.44 m^3 [2]
Plastic and cardboard	< 5.5 tonnes
Metal	< 5.5 tonnes
Paint, paint containers and associated materials	< 2 tonnes
Cladding	< 2 tonnes
Minor quantities of incidental construction waste (mixed municipal, organic waste, mixed dry recyclables, concrete, timber, plaster, tile, glass, metal, dust, debris, waste electrical or electronic equipment)	< 55 tonnes

These estimates will be compared to actual waste figures as the project progresses.

Sub-contractors on site may generate waste in relatively low quantities. The transportation of non-hazardous waste by persons not directly involved with the waste business, at weights less than or equal to two tonnes, and in vehicles not designed for the carriage of waste, are exempt from requiring a waste collection permit. Any subcontractors engaged that do not generate more than two tonnes of waste at any one time can transport this waste off-site in their work vehicles. However, they are required to ensure that the receiving facility has the appropriate authorisation (Certificate of Authorisation, Waste Facility Permit or EPA Industrial Emissions/Waste Licence).

The following sections outline steps to move material up and out of the waste hierarchy to contribute to improving these statistics.

4.2 Prevention and Minimisation

Key to implementing an effective waste prevention and minimisation policy on site is the management of material. Materials will be bulk-ordered in a timely manner and on a need-to-purchase basis, to prevent over-ordering and excess supply and waste. The RWMP will be updated continuously to provide for proper storage and handling of construction material to maximise usage and minimise waste. Materials delivered to site will be inspected to ensure that they are defect-free and suitable for use.

[2] Assumed 4 no. Portaloo's with a capacity of 265 litres each services once a week for the duration of the 6 month construction period.

4.2.1 Prevention

At construction stage, methods of preventing waste include:

- Ordering just enough materials
- Damage avoidance
- Planned construction methods to avoid over-ordering, waste generation and to avoid mistakes which would result in waste generation (method statements).
- Planning for reuse:
  - On site, e.g. reusing scaffolding, formwork, hoarding etc. from previous jobs.
  - Off site, e.g. plan to reuse scaffolding, formwork, hoarding etc at next jobs.
  - Off-Site as a by-product or end of waste process.
- Store pallets separately for packaging take back, do not place in waste timber skip.
- Use reusable shuttering system.

4.2.2 Minimisation

Under a RWMP, minimisation can be taken to mean both the minimisation of resource use and minimisation of waste generation.

Resource use and waste can be minimised through:

- Integrating sustainability criteria into any tenders to promote sustainable approaches and methodologies for the construction.
- Promoting 'just in time' deliveries of materials and product to the construction site.
- Considering resource efficiency during detailed design (i.e. promoting the use of standardised materials, where practicable, promoting off-site manufacturing of construction components, designing construction to minimize waste and offcuts).
- Utilising construction materials/products that are durability and readily recyclable.
- Choices of construction materials.

4.3 Reuse

The works do not involve any demolition, land-take, the construction of any additional buildings or structures on-site, site clearance or groundworks that may require significant levels of resources (e.g., concrete, steel, aggregate, fuel), therefore there will be minimal if any material suitable for reuse on-site.

There is limited potential for the reuse of other materials that will be generated on site during construction given the nature of this material, the lack of economic opportunities for reuse outside the waste management sector, and the relatively small quantum of the waste to be generated during the project.

- Metal
- Plastic
- Plasterboard

This waste will be sent to waste management facilities for appropriate recovery and recycling, however.

Timber materials (scaffolding, formwork, hoarding, pallets etc.) will be reused unless damaged or degraded through reuse.

4.4 Recycling and Recovery

Segregation of waste streams will be implemented on-site to maximise recycling and recovery. The Contractor will ensure that recyclable materials will be separated at source whenever possible. Individual waste streams will be segregated using separate bins, storage containers, or clearly designated stockpiling areas. Reusable and recyclable materials will be stored separately to residual wastes to avoid cross-contamination.

The waste contractor will be appointed by Stericycle to collect waste materials generated at the site. The waste contractor will be required to report end destinations of all waste materials taken off site by recovery, recycling or disposal.

Recycling is preferred to recovery under the waste hierarchy. Recycling is dependent on a market to purchase recyclables for processing. Recovery is limited to replacing the need for another product, e.g. using soil and stone as backfill to restore a quarry.

Segregated waste generated during the construction stage will have potential to be sent for recycling, such as:

- Metal
- Paper and cardboard
- Plastics
- Organic waste
- Wood
- Glass
- WEEE
- Batteries and accumulators
- Packaging waste
- Bulbs
- Plasterboard
- Fuels or solvents (e.g. at a hazardous waste management facility)

These materials will be tracked to the end point in the waste management system, i.e. recycling facility or recyclables buyer with guarantee such as an Irish compliance scheme which exists for WEEE including bulbs, batteries or packaging waste.

In cases where the quality of the material is insufficient or market is unavailable, materials generated on site may be sent for recovery of mixed waste streams at an energy recovery facility where appropriate.

4.5 Waste Disposal

In cases where waste cannot be recovered, it will be sent to an appropriately authorised facility for disposal. It will be an objective to avoid the disposal of waste at a landfill entirely where practicable. This is considered to be achievable in the context of the current waste management sector and market. Waste being dispatched for landfill disposal will, where necessary, be tested in accordance with the receiving facility requirements. At a minimum, the waste will be classified in accordance with the 'Waste Classification List of Waste and Determining if Waste is Hazardous or Non-hazardous' guidelines. The classification will confirm the applicable Waste Acceptance Citeria (WAC) and ultimately (subject to approval from the landfill) determine the suitable disposal location to an inert landfill, a non-hazardous landfill or a hazardous waste landfill.

Waste that cannot be reused or recycled will be directed for energy recovery rather than to landfill where possible.

4.6 Supply Chain and Green Procurement

The Contractor will set up a local logistics centre to support storage and Just in Time delivery of materials. This will:

- Mitigate traffic queuing and engine idling.
- Facilitate material lay down in designated areas close to use.
- Facilitate packaging take back.
- Mitigate over-ordering resulting in waste.

The use of all purchased materials from non-sustainable sources will be minimized. Materials from sustainable sources or materials with a recycled content will be specified where possible.

Preference will be given to materials that have a declared recycled content or are covered by a recognised Type I certification scheme such as Forestry Stewardship Council.

4.7 Off-Site Construction

The following items can be constructed or prepared off site to reduce residual waste generation on site and to prevent material and energy losses.

- Waste processing plant and infrastructure
- Structural steel
- Prefabricated composite panels for walls and roofing
- Steel platforms
- Pipework
- Secondary retention systems (bunding)

4.8 Materials Optimisation

Most of the decisions will be made at design stage. At the construction stage, the Contractor will identify additional specific opportunities to optimise material usage. Examples of materials optimisation, as per the EPA guidance, include:

1. Reduce the overall material use in the design of structures, reduce the weight of structures to lower the loading, allowing for thinner structural members and foundations, which will require less concrete and less reinforcement.
2. Simplify the design, layout, building form, structural system, building services and construction sequencing where appropriate and feasible.
3. Standardise design details and specified materials and reduce the number of materials specified where appropriate to facilitate process repeatability and minimise the number of variables and bespoke elements to enable manufacturing and installation efficiencies.
4. Design material dimensions using appropriate structural and planning grids where appropriate, considering manufacturer's product sizes. If standards sizes do not work, contact the manufacturers and suppliers to ensure materials are pre-sized and pre-cut to specific design specifications and requirements.
5. Coordinate the design, i.e. structural and service zones, to prevent cutting and jointing of materials, which create offcuts.
6. Use Building Information Modelling (BIM) to carry out 3D design coordination analysis to prevent dimensional conflicts through clash detection.
7. Introduce design 'freezes' to encourage clear Client design briefs and early engagement of the supply chain, i.e. main Contractor, specialist sub-contractors, manufacturers and suppliers.

4.9 Targets/Key Performance Indicators

The following resource and waste management targets/key performance indicators have been defined for this project.

1. Fully recycle or recover 100% of waste generated during this project.
2. Achieve zero waste to landfill under this project (0% of waste generated to be disposed of at landfill), where practical.

Table 4-2: Targets/Key Performance Indicators for Materials/Waste

Materials/Waste	Estimated Quantities to be Generated (T)	KPI
Timber off-cuts, broken pallets, damaged formwork, sheeting, hoarding etc.	< 33 tonnes	100% recycled
Plastic and cardboard	< 5.5 tonnes	100% recycled
Metal, including steel, aluminium, and lead e.g. metal strapping	< 5.5 tonnes	100% recycled
Paint, paint containers and associated materials	< 2 tonnes	100% recycled
Cladding	< 2 tonnes	100% recycled
Minor quantities of incidental construction waste (mixed municipal, organic waste, mixed dry recyclables, concrete, timber, plaster, tile, glass, metal, dust, debris, waste electrical or electronic equipment)	< 55 tonnes	100% recovered/reused

4.9.1 Record of Performance

It is an objective of this RWMP to document both design and construction decisions that result in significant savings in resource or which prevent or minimise waste. Through interaction with the Contractor, Stericycle and FT, it is proposed to record:

- Materials savings
- Waste prevention
- Waste minimisation
- Reuse

5. SITE MANAGEMENT

5.1 Resource Manager

The Resource Manager has overall responsibility for the implementation of this plan and will be assisted by the overall Project Manager on site. Their responsibilities are defined below. The Resource Manager will be trained on using the best methods for segregation and storage of recyclable materials on-site. The Project Manager will be responsible for the procurement of materials for the contract and identifying any opportunities for reuse or use of secondary materials.

5.2 Training and Awareness

All construction staff will be provided in training on good material/waste management practices and on the provision of this RWMP generally. All training and induction in relation to resource management will be delivered by the Resource Manager. Copies of this RWMP will be made available to all relevant personnel. All project meetings will have resource efficiency and waste management as items on the agenda. Any issues regarding material/waste management will be addressed in this forum with subcontractors encouraged to raise any issues. The waste hierarchy will be promoted on-site through toolbox talks and poster campaigns. This RWMP will also form part of the standard site induction which will be delivered to all site operatives prior to them being allowed to work on-site.

5.3 Material/Waste Movements

All waste movements off-site will be recorded in a dedicated Material/Waste Dispatch Log. The Resource Manager will maintain these records in hard copy and electronically. Copies of all waste contractors Waste Collection Permit and destination Waste Facility authorisations (certificates of registration, waste facility permits, licences) will be held on file and reviewed to ensure they have not expired.

There is a requirement for all waste contractors to have a waste collection permit issued by the National Waste Collection Office (NWCPO). Waste shall only be transported from the site by hauliers with a valid NWCPO issued Waste Collection Permit (WCP) which authorises the transport of the applicable List of Waste (LoW) Code. All permits should be reviewed prior to removal of any waste from site. Prior to the removal of any waste from the site, written confirmation should be obtained from the receiving waste facility that waste accepted at these sites will be in accordance with all waste management legislation and conditions of the relevant licence or permit.

5.4 Supply Chains

The use of all purchased materials from non-sustainable sources will be minimised. Materials from sustainable sources or materials with a recycled content will be specified where possible. It shall be the Contractor's policy to endeavour to use 100% Chain of Custody certified timber on every project.

Generally, preference will be given to materials that have a declared recycled content or are covered by a recognised Type I certification scheme such as FSC.

5.5 Record Keeping

All material and waste management related documentation will be recorded in a dedicate filing system. The following information will be retained/procured from sub-contractors as necessary:

- Records of material and waste management decisions.
- Training and awareness records
- Records of all waste leaving the site including:
  - Waste dockets
  - The date and time of the waste movement off-site
  - The waste collection contractor and their Waste Collection Permit details
  - The vehicle registration
  - The driver's name
  - The type of waste (LoW code)
  - Quantity of the waste (in tonnes or litres as appropriate)
  - Waste treatment (including appropriate Disposal(D)/Recovery(R) code)
  - The final destination of the waste (including Waste Facility Permit or EPA licence details).
- Site records for on-site resources uses will be maintained by the Resource Manager and used to update this RWMP following completion of the proposed development.

5.6 Reporting

The Resource Manager will be responsible for internal reporting of resource statistics to the Client and Contractor management. On completion of construction, they will prepare a final report summarising the outcome of the resource management processes adopted, the total reuse and recovery figures and the final destination of all resources and wastes taken off-site.

5.7 Communications

Communication tasks to be carried out by the overall Project Manager will include internal reporting, engaging with the relevant local authority, engaging with other stakeholders and preparing the final report.

The Project Manager is responsible for the following communication tasks:

- Reporting of resource and waste statistics to the Contractor, Employer, and Employer's Representative, including feedback on targets and objectives.
- Engagement with Local Authorities on matters relating to resource and waste management.
- Engagement with stakeholders regarding resource and waste management.
- Compilation of a final report summarising the outcomes of the resource and waste management processes and the KPIs achieved, i.e. final update of the RWMP.

5.8 Audits and Inspections

The Resource Manager will be responsible for periodic audits and inspection of work practices, reviewing all records of waste and resources generated on-site or transported off-site and comparison of resource records with established targets. Skip audits are useful to identify materials that should not be placed in skips and to explore opportunities and identify causes.

Continuous resource and waste auditing will be conducted on the development site throughout the construction phase of this project. The audits will include work practices, record keeping, and off-site tracking.

The audits will assess the following key issues and associated risks as a minimum:

- The site signage and any corrective action required.
- The existing storage infrastructure and any correction action required.
- The waste segregation measures implemented on-site, and the compliance of the protocols set out in the RWMP.
- The management methods implemented for each material/waste type and whether targets are being met.
- The contamination of any resource streams.
- The Contractor and Sub-contractor work practice compliance with the RWMP.

The Resource Manager will also review all records of waste and resources generated on the development site as well as transported off-site periodically during the project. The records kept on site will be assessed in accordance with the targets and requirements as set in the RWMP.

Any non-conformances raised through the audit or inspection shall be recorded and investigated to determine the root cause of the issue and corrective actions put in place by the Resource Manager and/or Project Manager where appropriate.

5.9 Site Infrastructure

5.9.1 Site Signage

Adequate labelling and signage will be implemented on site to support good resource and waste management practices across the development site and will inform the personnel of the key Waste Storage Area requirements and restrictions.

5.9.2 Resource/Waste Storage

The site layout has been reviewed to ensure there is adequate space and access to the designated Resource/Waste Storage Areas to enable appropriate storage and handling. The Contractor will ensure that appropriate measures are taken to safeguard the health of the operatives working in these areas and generally for the duration of the proposed development.

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