



Proposed Residential Development

Capdoo & Abbeylands
Clane
Co. Kildare

Construction Waste Management Plan

December 2020

Control Sheet

Document Title:		Construction Waste Management Plan		Document No.	P030_04_01
Rev	Description	Originator	Reviewer	Change	Date
01	Final	Siobhan Maher	P.Whelan	None.	1/12/2020

Proposed Residential Development
Capdoo & Abbeylands
Clane
Co. Kildare

Construction Waste Management Plan

Contents

1.0	Introduction	3
2.0	Methodology	4
3.0	Waste Management Policy and Legislative Overview	4
4.0	Proposed Development Description.....	7
5.0	Waste Management	10
6.0	Estimated Cost of Waste Management.....	15
7.0	Training Provisions	16
8.0	Record Keeping	17
9.0	Outline Waste Audit Procedure.....	18
10.0	Consultation.....	18

1.0 Introduction

This outline proposed Construction Waste Management Plan (CWMP) was prepared by Redkite Environmental Ltd. on behalf of Westar Investments Ltd. as part of a planning application for a proposed residential and associated creche development at Capdoo & Abbeylands, Clane, Co. Kildare.

1.1 Plan Objectives

The main objective of this CWMP is to ensure that waste is managed during the construction phase in accordance with current policy, legal requirements and guidance and that the waste hierarchy for sustainability based on prevention, preparing for reuse, recycling, recovery and disposal is adhered to. The waste hierarchy is outlined in the Waste Framework Directive 2008/98/EC and transposed into Irish law under the European Communities (Waste Directive) Regulations, (SI 126/2011), meaning it is legally established in a national statute and therefore should be applied as a priority.

The Plan also aims to ensure that the principles of a circular waste economy are recognised in the prevention and management of construction waste on site.

1.2 Requirement for a CWMP

In Ireland, planning authorities are empowered under Section 34(4)(1) of the Planning and Development Act 2000, to attach conditions, at their discretion, relating to Construction and Demolition (C&D) waste management including the preparation of CWMPs for projects over certain thresholds as follows:

- New residential development of 10 houses or more;
- New developments, other than above, including institutional, educational, health and other public facilities, with an aggregate floor area in excess of 1,250m²;
- Demolition/renovation/refurbishment projects generating in excess of 100m³ in volume, of waste, and,
- Civil engineering projects producing in excess of 500m³ of waste, excluding waste materials used for development works on the site.

The proposed development falls within the remit of the first criterion above.

In June 2007, Planning Guidelines 13, Development Management, Guidelines for Planning Authorities were issued by the then Department of Environment, Heritage and Local Government (DoEHLG) under Section 28 of the Planning and Development Acts.

These Guidelines require planning authorities to have regard to *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* produced by the National Construction and Demolition Waste Council (NCDWC) in June 2006 to ensure the proper management of construction and demolition wastes. These planning

guidelines also require waste audits be undertaken and that summary audit reports be submitted to the relevant local authority.

2.0 Methodology

The aforementioned *Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects* produced by the NCDWC in June 2006, in conjunction with the then DoEHLG has been used as guidance in the preparation of this CWMP.

The Guidelines promote an integrated approach to the management of construction and demolition waste. They are designed to promote sustainable development, environmental protection and the optimum use of resources. The Guidelines introduce the concept of integrated waste management planning for construction projects above certain thresholds (refer to Section 1.2 above).

The guidelines outline the issues that require address at the pre-planning stage of a development through to its completion. The recommended contents of a CWMP are:

- project description;
- waste forecasts;
- project targets;
- proposed strategies and associated costs;
- materials logistics;
- responsibilities; auditing and record keeping procedures;
- education and communication requirements;
- pre-demolition and pre-refurbishment audits (if applicable); and,
- evidence of supply chain coordination.

The EPA has a library of reference documents available on-line with regard to the management and prevention of C&D waste. A factsheet produced in 2013 entitled "*Design out Waste – A Design Team Guide to Waste Reduction in Construction and Demolition Projects*" and the EU C&D Waste Management Protocol published in 2016 were also reviewed during the preparation of this report.

3.0 Waste Management Policy and Legislative Overview

3.1 National Context

According to the EPA's website, Ireland's waste management practices, infrastructure and regulation have matured significantly over the last 20 years. This change has been driven by EU and national legislation, national policy and economic initiatives.

A Waste Action Plan for a Circular Economy, Ireland's National Waste Policy 2020 -2025 was recently published in September 2020 by the Department of Environment, Climate and Communications and replaces the previous National Waste Policy entitled '*A Resource Opportunity - Waste Management*

Policy in Ireland' published by the DoEHLG in 2012, which focussed on waste as a resource and the virtual elimination of landfilling.

The new Plan recognises that traditional waste policy focussed on how waste produced is treated and how to achieve the right balance between waste recycling, recovery and disposal. However, according to the Plan, the focus must now be broadened to encompass how resources and materials are consumed, how products are designed, how to extend the productive life of products and how we prevent waste generation and resource consumption.

With regard to C&D waste the new Plan sets out the following targets:

- Revision of the aforementioned 2006 Guidelines;
- Stream-line By-product Notification and end-of-waste decision making processes, and,
- Set up a working group to develop end-of-waste applications for priority waste streams.

The Plan notes that from a broader circular economy perspective, it is important that *“prevention and reuse is hardwired into construction activity.”*

3.2 Regional and County Context

The proposed development is located in the Local Authority area of Kildare County Council (KCC).

The *Eastern-Midlands Region Waste Management Plan 2015 – 2021* is the overarching regional waste management plan for the KCC area.

The Regional Plan sets out the strategic targets for waste management in the region and sets a specific target for C&D waste of *“70% preparing for reuse, recycling and other recovery of construction and demolition waste”* (excluding natural soils and stones and hazardous wastes) to be achieved by 2020. This is in line with the target set for Member States under the Waste Framework Directive 2008/98/EC.

Municipal landfill charges in Ireland are based on the weight of waste disposed. In the Leinster Region, charges are approximately €130 - €150 per tonne of waste which includes a €75 per tonne landfill levy introduced under the *Waste Management (Landfill Levy) (Amendment) Regulations 2013*.

Section 7.6 of the *Kildare County Development Plan 2017 – 2023* sets out a number of policies for County Kildare in line with, and to reflect, the objectives of the regional waste management plan.

Waste policies and objectives with relevance to the proposed development construction phase include:

WM1 To implement European Union, National and Regional waste related environmental policy, legislation, guidance and codes of practice to improve management of material resources and wastes.

WM3 To support the implementation of the Eastern Midlands Regional Waste Management Plan 2015 – 2021 by adhering to overarching performance targets, policies and policy action.

WM10 To encourage waste prevention, minimisation, re-use, recycling and recovery as methods of managing waste. Where waste management is not being carried out properly, the Waste Management Act as amended will be used as a means of ensuring specific national policies and regulations are being adhered to.

The strategy to conform to EU, national and regional policy is also reflected in the Clane Local Area Plan (LAP) 2017 – 2023.

3.3 Legislation

The primary legislative instruments including acts and regulations that govern waste management in Ireland and are applicable to the project include:

- Waste Management Act 1996 (S.I. No. 10/1996) and 2001 Amendment Act (S.I. No. 36/2001);
- European Communities (Waste Directive) Regulations 2011 (S.I. No.126/2011) and Amendment Regulations S.I. No. 323/2011;
- Waste Management (Collection Permit) Regulations (S.I. No. 820/2007) as amended in 2008, 2015 and 2016;
- Waste Management (Facility Permit and Registration) Regulations 2007, (S.I. No. 821 of 2007) as amended in 2008, 2014, 2015 and 2019;
- Waste Management (Licensing) Regulations 2004 (S.I. No. 395/2004) as amended in 2010;
- Waste Management (Packaging) Regulations 2014 (S.I. No. 282/2014);
- Waste Management (Prohibition of Waste Disposal by Burning), Regulations, 2009 (S.I. No. 286/2009);
- Waste Management (Landfill Levy) Regulations 2012 - 2019 (S.I. Nos. 221/2012, 194/2013, 189/2015 and 182/2019);
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149/2014) and 2019 Amendment Regulations;
- European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended by S.I. No. 349/2014;
- Waste Management (Food Waste) Regulations 2009 (S.I. No.508/2009), as amended in 2015;
- European Union (Household Food Waste and Bio-waste) Regulation 2015 (S.I. No. 191/2015);
- Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163/1998) as amended in 2000 and part revoked by S.I. No. 324/2011;
- Waste Management (Shipments of Waste) Regulations, 2007 (S.I. No. 419/ 2007) as amended by S.I. 324/2011);
- Waste Management (Registration of Brokers and Dealers) Regulations, 2008 (S.I. No. 113/2008);
- European Communities (Shipment of Hazardous Waste exclusively in Ireland) Regulations, 2011 (S.I. No. 324/2011);

- European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233/2015) as amended in 2018;
- Environmental Protection Act 1992 (S.I. No. 7/1992) as amended by the Protection of the Environment Act, 2003;
- Litter Pollution Act 1997 (S.I. No. 12 /1997) and 2009 Amendment;
- Litter Pollution Regulations, 1999 (S.I. No. 359 /1999);
- Planning and Development Act 2000 (S.I. No. 30/2000) as amended in 2010 and 2018.

4.0 Proposed Development Description

The applicant seeks grant of planning permission for a residential scheme comprising 333 dwelling units split as follows:

Table 1: Schedule of Accommodation

Description	Quantity	Mix (%)
4 bed semi-detached	20	6.01
3 bed semi-detached	38	11.41
3 bed detached	01	0.30
3 bed terraced	39	11.71
2 bed terrace	23	6.91
2 bed maisonette	12	3.60
1 bed maisonette	08	2.40
Duplexes	56	16.82
Apartment Block A&B	94	28.23
Apartment Block C	09	2.70
Apartment Block D	23	6.91
Apartment Block F	10	3.0
TOTAL	333	100

The development also includes a single-storey crèche facility (Part of the ground floor of Apartment Block F); associated car parking; surface water attenuation, foul drainage and water supply infrastructure, site entrances, landscaping and all other associated site development works.

The proposed development site is located approximately 660m east of Clane Main Street. This Greenfield site is bounded to the north and north-west by agricultural lands, to the east by the River Liffey, and to the west and south by existing residential developments (Abbey Park/ Alexandra Walk / Brooklands). The total area of the proposed development site is approximately 10.36 hectares.

The total gross internal floor area is estimated at 32,323.66m².

In line with EU policy, the policy of the applicant and the design team is to design out waste at the outset. In this regard, the following has been applied:

- The proposed buildings are timber frame. Structural elements will be pre-fabricated off site to prevent the generation of excessive off-cuts.
- The development has not been over-designed i.e. the number of type of materials specified has been minimised.
- A “just in time” system will be applied for material supply to prevent over-supply and waste generation.

4.1 Details of Waste Likely to be Generated

As the site is greenfield, there are no existing buildings or structures to be demolished. Furthermore, in this regard, there is no contaminated soil to be excavated or removed for treatment or disposal off-site. Due to the greenfield nature, it is not considered that asbestos is present on site.

4.1.1 Non-Hazardous Waste

Cut and fill is expected to be balanced on site. Natural material (topsoil, subsoils, gravel and stones) excavated for foundations drainage and utility installation will be reused within the site.

Approximately 12,614m³ of topsoil will be excavated over the entire site. It is anticipated that all of this material will be stored for later re-use in landscaped areas.

Approximately, 19,335m³ of sub-soil will be moved during the construction stage and re-used within the site.

During the construction phase, waste building materials may arise such as timber off-cuts, broken concrete blocks, plastics, metals and broken tiles. Plastic and cardboard waste from packaging of building materials or kitchen and bathroom units etc. is also likely to be generated. Bulk concrete requirements will be batched off-site therefore this will reduce waste concrete arisings overall, although some waste concrete may still arise from washing of chutes.

Waste will also be generated from construction workers e.g. organic/food waste, dry mixed recyclables (wastepaper, newspaper, plastic bottles, packaging, aluminium cans, tins and Tetra Pak cartons), mixed non-recyclables and sewage sludge from temporary welfare facilities provided onsite during the construction phase.

4.1.2 Hazardous Waste

Refuelling of plant equipment and machinery with diesel will occur on site at dedicated bunded locations. It is unlikely that waste diesel fuel will arise as this can be drawn-off and reused elsewhere if surplus is present on site at the end of the construction phase.

Small quantities of waste lubricant oil for plant equipment may arise throughout the construction phase. Paints, glues, adhesives and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner/cartridges, batteries (Lead, Ni-Cd or Mercury) and/or fluorescent tubes and other mercury containing waste may be generated during C&D activities or temporary site offices. These wastes (if encountered) will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

4.1.3 Invasive Species

The site-specific ecology survey noted that there were no invasive species such as Japanese Knotweed present on site.

4.1.4 Summary Waste Streams

C&D waste falls under Chapter 17 of the List of Waste (LoW) Codes. The hazardous and non-hazardous waste streams likely to potentially arise and associated LoW codes are presented in Table 2 overleaf.

Table 2: Waste Streams Likely to Arise

Waste Material	LoW Code
Concrete, bricks, tiles, ceramics	17 01 01-03 & 07 (mixtures)
Wood, glass and plastic	17 02 01-03
Bituminous mixtures	17 03 02
Metals (including their alloys) and cable (non-hazardous)	17 04 01-07, 17 04 11
Soil and stones	17 05 04
Insulation Material	17 06 04
Gypsum-based construction material	17 08 02
Mixed C&D waste	17 09 04
Paper and cardboard	20 01 01
Vegetation waste	20 02 01
Fluorescent tubes and other mercury containing wastes	20 01 21*
Electrical and electronic components	20 01 35* & 36
Batteries and accumulators	20 01 33* & 34
Liquid fuels	13 07 01-10*
Waste hydraulic and lubricating oils	13 01 13* and 13 02 08*
Chemicals (paints, adhesives, detergents etc.) Hazardous and non-hazardous	20 01 27* – 30
Organic (food) waste	20 01 08
Mixed Municipal Waste	20 03 01
Aqueous waste destined for off-site treatment	16 10 02

**Denotes hazardous*

5.0 Waste Management

5.1 Predicted Waste Generation

The typical breakdown of construction waste generated on Irish sites, taken from the EPA website and published in 2020, is based on 2018 (latest) figures as presented in Table 3 overleaf.

Table 3: Breakdown of Construction and Demolition Wastes on Irish Sites

Waste Types	%
Soil and Stones	76.6
Metals	3.0
Concrete, bricks, tiles and similar	12.0
Segregated wood, glass and plastic	0.40
Bitumous mixtures	1.0
Mixed waste	7.0
Total	100

Other figures available taken from EPA Research Report;- *Report 146 – A Review of Design and Construction Waste Management Practices in Selected Case Studies – Lessons Learned* (2015) are presented in Table 4 below:

Table 4: Breakdown (Excluding Soils and Stones)

Waste Types	%
Mixed C&D	33
Timber	28
Plasterboard	10
Metals	8
Concrete	6
Other	15
Total	100

Estimated waste arisings have been calculated based on waste benchmarks set out in BREEAM (Building Research Establishment Environmental Assessment Methodology) for the proposed development construction phase. A value of $\leq 13.3 \text{ m}^3$ or 11.1 tonnes/100m² development was applied (excluding soils and stones). The total construction waste expected to be generated (excluding soils and stones) is 3,587.9 tonnes. This figure is split out overleaf in Table 5 into the different waste streams and predicted re-use/recycle disposal rates and quantities.

Table 5: Outline Waste Quantities Likely to be Generated

Waste Type	Tonnes	Reuse		Recycle/Recovery		Disposal	
		%	Tonnes	%	Tonnes	%	Tonnes
Mixed C&D	1184.01	10.00	118.40	80.00	947.21	10.00	236.80
Timber	1004.62	40.00	401.85	55.00	552.54	5.00	50.23
Plasterboard	358.79	30.00	107.64	60.00	215.28	10.00	35.88
Metals	287.03	5.00	14.35	90.00	258.33	5.00	14.35
Concrete	215.28	30.00	64.58	65.00	139.93	5.00	10.91
Other	538.19	20.00	107.64	60.00	322.91	20.00	107.64
Total	3587.92	22.70	814.46	67.90	2436.20	9.40	337.26

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to accurately predict the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

5.2 Proposed On-Site Waste Management Options

Waste materials generated will be segregated on site. There will be skips and receptacles provided to facilitate segregation at source. All waste receptacles leaving site will be covered or enclosed. The appointed waste contractor will collect and transfer the wastes as receptacles are filled. Waste contractors operating in County Kildare will provide this service.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be reused, recycled, recovered or disposed of at a facility holding the appropriate registration, permit or licence, as required.

Some of the sub-contractors on site will generate waste in relatively low quantities. The transportation of non-hazardous waste by persons who are not directly involved with the waste business, at weights less than or equal to 2 tonnes, and in vehicles not designed for the carriage of waste, are exempt from the requirement to have a waste collection permit (Ref. Article 30 (1) (b) of the Waste Collection Permit Regulations 2007 as amended). Any sub-contractors engaged that do not generate more than 2 tonnes of waste at any one time can transport this waste offsite in their work vehicles (which are not design for the carriage of waste). However, they are required to ensure that the receiving facility has the appropriate COR / permit / licence.

Written records will be maintained by the contractor(s) detailing the waste arising throughout the C&D phases, the classification of each waste type, waste collection permits for all waste contractors who collect waste from the site and COR/permit or licence for the receiving waste facility for all waste removed off site for appropriate reuse, recycling, recovery and/or disposal.

Dedicated bunded storage containers will be provided for hazardous wastes which may arise such as batteries, paints, oils, chemicals etc, if required.

The management of the main waste streams is outlined as follows:

Soil and Stones

Topsoil, subsoils, gravel and stones excavated for foundations drainage and utility installation will be reused within the site. Materials will be segregated and stored in small stockpiles prior to re-use. In total, approx. 12,614m³ of topsoil and 19,335 m³ of sub-soil will be moved during the construction stage and re-used within the site.

Silt & Sludge

During the construction phase, silt and petrochemical interception will be carried out on runoff and pumped water from site works, where required. Sludge and silt will then be collected by a suitably licensed contractor and removed offsite.

Concrete Blocks, Bricks, Tiles & Ceramics

The majority of concrete blocks, bricks, tiles and ceramics generated as part of the construction and demolition works are expected to be clean, inert material and should be recycled, where possible.

Hard Plastic

As hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. All recyclable plastic will be segregated and recycled, where possible.

Timber

Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be disposed of in a separate skip and recycled off-site.

Metal

Metal will be segregated and stored in skips. Metal is highly recyclable and there are numerous companies that will accept these materials.

Plasterboard

There are currently a number of recycling services for plasterboard in Ireland. Waste plasterboard will be stored in a separate skip, pending collection for recycling. The site manager will ensure that oversupply of new plasterboard is carefully monitored to prevent and minimise waste.

Glass

Glass materials will be segregated for recycling.

Waste Electrical and Electronic Equipment (WEEE)

Any WEEE will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling.

Other Recyclables

Where any other recyclable wastes such as cardboard and soft plastic are generated, these will be segregated at source into dedicated skips and removed off-site.

Non-Recyclable Waste

C&D waste which is not suitable for reuse or recovery, such as polystyrene, some plastics and some cardboards, will be placed in separate skips or other receptacles. Prior to removal from site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team (see Section 7.0) to determine if recyclable materials have been placed in there by mistake. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

Hazardous Wastes

On-site storage of any hazardous wastes produced (e.g. waste lubricant oils, chemicals) will be kept to a minimum, with removal off-site organised on a regular basis. Storage of all hazardous wastes on-site will be undertaken so as to minimise exposure to on-site personnel and the public and to also minimise potential for environmental impacts. In the main, hazardous wastes will be recovered by off-site waste licensing contractors, wherever possible, and failing this, disposed of appropriately.

Office and Welfare Facilities Waste

Wastewater from on-site toilets will be regularly removed off-site by a permitted contractor for treatment at a licensed facility e.g. composting or at the nearest WWTP.

Separate 200Lt bins will be provided for food waste, recyclable plastics and cardboard and mixed waste. These will be regularly collected by approved waste contractors.

Waste batteries will be collected in offices in designated receptacles. These will be brought to the nearest bring centre by the nominated Waste Manager.

Tracking and Documentation

All waste will be documented prior to leaving the site. Waste will be weighed by the contractor, either by weighing mechanism on the truck or at the receiving facility. These waste records will be maintained on site by the nominated project Waste Manager (see Section 7.0).

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 - 2011*, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* as amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project Waste Manager (see Section 7.0) will maintain a copy of all waste collection permits on-site.

Copies of all Local Authority waste COR/permit or EPA Waste/IE Licence for waste recycling/treatment/disposal facilities where waste is moved to will be provided to the nominated project Waste Manager (see Section 7.0). Waste transfer forms (WTF) will be used for the transfer of hazardous waste and kept on-site along with details of the final destination (COR, permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered in a waste management recording system to be maintained on site. Documents will be maintained for at least 3 years.

6.0 Estimated Cost of Waste Management

An outline of the costs associated with different aspects of waste management is provided below.

The total cost of construction waste management will be measured and will take into account handling costs, storage costs, transportation costs, revenue from rebates and disposal costs.

6.1 Reuse

By reusing materials on site, there will be a reduction in the transport and recycle/recovery/disposal costs associated with the requirement for a waste contractor to take the material off-site.

6.2 Recycling

Salvageable metals will earn a rebate which can be offset against the costs of collection and transportation of the skips.

Clean uncontaminated cardboard and certain hard plastics can also be recycled. Waste contractors will charge considerably less to take segregated wastes, such as recyclable waste, from a site than mixed waste.

Timber can be recycled as chipboard. Again, waste contractors will charge considerably less to take segregated wastes such as timber from a site than mixed waste.

6.3 Disposal

Landfill charges in the Leinster region are currently at around €130 - €150 per tonne which includes a €75 per tonne landfill levy specified in the *Waste Management (Landfill Levy) Regulations 2015* as amended. In addition to disposal costs, waste contractors will also charge a collection fee for skips.

Collection of segregated construction waste usually costs less than municipal waste. Specific construction waste contractors take the waste off-site to a licensed or permitted facility and, where possible, remove salvageable items from the waste stream before disposing of the remainder to landfill.

7.0 Training Provisions

A member of the construction team will be appointed as the project Waste Manager to ensure commitment, operational efficiency and accountability during the construction phase of the project.

7.1 Waste Manager Training Responsibility

The nominated Waste Manager will be given responsibility and authority to select a waste team if required, i.e. members of the site crew that will aid them in the organisation, operation and recording of the waste management system implemented on site. The Waste Manager will have overall responsibility to oversee, record and provide feedback to the client on everyday waste management at the site. Authority will be given to the Waste Manager to delegate responsibility to sub-contractors, where necessary, and to coordinate with suppliers, service providers and sub-contractors to prioritise waste prevention and material salvage.

The Waste Manager will be trained in how to set up and maintain a record keeping system, how to perform an audit and how to establish targets for waste management on site. The Waste Manager will also be trained in the best methods for segregation and storage of recyclable materials, have information on the materials that can be reused on site and be knowledgeable in how to implement this CWMP.

7.2 Site Crew Training

Training of site crew is the responsibility of the Waste Manager and, as such, a waste training program will be organised. A basic awareness course will be held for all site crew to outline the CWMP and to detail the segregation of waste materials at source. This may be incorporated with other site training needs such as general site induction, health and safety and environmental awareness and manual handling.

This basic course will describe the materials to be segregated, the storage methods and the location of the Waste Storage Areas (WSAs). A sub-section on hazardous wastes will be incorporated into the training program and the particular dangers of each hazardous waste will be explained.

8.0 Record Keeping

Records will be kept for all waste material which leaves the site.

A Waste Register will be used to track each waste movement from the site. On exit from the site the waste collection vehicle driver will be required to stop at the site office/security hut and provide the security personnel with a waste docket (or Waste Transfer From (WTF) for hazardous waste) for the waste load collected. At this time, the security personnel will complete and sign the Waste Register with the following information:

- Date
- Time
- Waste Contractor
- Collection Permit No.
- Vehicle Reg.
- Driver Name
- Docket No.
- Waste Type
- LoW

The waste transfer dockets and WTFs and register will be collated and reviewed by the site Waste Manager on a weekly basis.

Alternatively, each subcontractor that has engaged their own waste contractor will be required to maintain a similar waste tracking register with the waste dockets/WTF maintained on file and available for inspection on site by the main contractor as required.

A copy of the Waste Collection Permits, CORs, Waste Facility Permits and Waste Licences will be maintained on site at all times. Subcontractors who have engaged their own waste contractors, will provide the main contractor with a copy of the waste collection permits and COR/permit/licence for the receiving waste facilities and maintain a copy on file available for inspection on site as required.

9.0 Outline Waste Audit Procedure

9.1 Responsibility for Waste Audit

The appointed Waste Manager will be responsible for conducting a waste audit at the site during the construction phase of the development.

Contact details for the nominated Waste Manager will be provided to KCC after the main contractor is appointed and prior to any material being removed from site.

9.2 Review of Records and Identification of Corrective Actions

A review of all the records for the waste generated and transported off-site will be undertaken mid-way through the project. If waste movements are not accounted for, the reasons for this should be established in order to see if and why the record keeping system has not been maintained. The waste records will be compared with the established recovery/reuse/recycling targets for the site.

Each material type will be examined, in order to determine where the largest percentage of waste generation is occurring. The waste management methods for each material type will be reviewed in order to highlight how the targets can be achieved.

Waste management costs will also be reviewed.

Upon completion of the construction phase, a final report will be prepared, summarising the outcomes of waste management processes adopted and the total recycling/reuse/recovery figures for the development.

10.0 Consultation

10.1 Local Authority

Once construction contractors have been appointed and prior to removal of any construction waste materials offsite, details of the proposed destination of each waste stream will be provided to the KCC.

KCC will also be consulted, as required, throughout the excavation and construction phases in order to ensure that all available waste reduction, reuse and recycling opportunities are identified and utilised and that compliant waste management practices are carried out.

10.2 Waste Companies

Companies that specialise in construction waste management will be contacted to determine their suitability for engagement. Where a waste contractor is engaged, each company will be assessed in order to ensure that relevant and up-to-date waste collection permits and facility COR/permits/licences are held.

In addition, information regarding individual construction materials will be obtained, including the feasibility of recycling each material, the costs of recycling/reclamation and the means by which the wastes will be collected and transported off-site, and the recycling/reclamation process each material will undergo off site.