

River Valley Design Contracts Limited

Construction Waste and Demolition Management Plan For:

**Strategic Housing Development at Fortunestown Lane,
Saggart. Co. Dublin**

Date: August 2019

*The document is being prepared to support an application for a
Strategic Housing Development*

Document Control

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1.0 Introduction

- 1.1** This Construction Waste and Demolition Management Plan (CWMDP) is for the works associated with the construction of Strategic Housing Development at Fortunestown Lane, Saggart in City West.
- 1.2** The CWMDP is being prepared to support an application for a Strategic Housing development.
- 1.3** The plan provides an assessment of the impacts arising from the generation of waste materials during the construction phase of the project. It includes estimated quantities of different types of waste associated with the works and the details of the re-use and recycling throughout the duration of the project.
- 1.4** River Valley Design Contracts Limited (RVDCL) and their subcontractors who are undertaking the works shall be responsible for the development of the plan and the implementation of all necessary protocols and measures to ensure regulatory compliance and reporting obligations.
- 1.5** Nothing stated in this document shall supersede or be taken to replace the terms of the Contract, the works as outlined in the tender documents or the conditions of planning. Similarly, the items covered within this document may be amended or added to by RVDCL or in accordance with their specific approved works proposals, sequencing or procedures. When read by RVDCL, this document should be read carefully in conjunction with all drawings, specifications and survey information provided.
- 1.6** Any consequences that result through failure to implement measures in this construction plan, or inadequate development of this plan are the sole responsibility of RVDCL.

2.0 Project Description

- 2.1 The site is located at Fortunestown Lane, Saggart South Dublin 24 (figure 2.1). This project will consist of the construction of 5 blocks of apartments comprising 1, 2 & 3 bed apartments located between the Green Corridor-main street and the Luas Line/Fortunestown Lane main street. including all associated development works.
- 2.2 The development includes parking spaces and bin storage areas.
- 2.3 Infrastructure to include; ESB substations, access roads and landscaped green space including a district park and neighbourhood park.
- 2.4 There will be no demolition work involved in this project.
- 2.5 At the south eastern boundary of the site there is a stream which requires some work to the bank. These were completed during Phase 1 of the Cuil Duin project.
- 2.6 The Luas runs along the southern boundary of the site. A specific Risk Assessment and Method Statement has been compiled with respect to working near the Luas line.
- 2.7 The road along the south eastern boundary is already operational, providing access to the TLC Centre, and to residents of properties handed over during Phase 1 of the project.

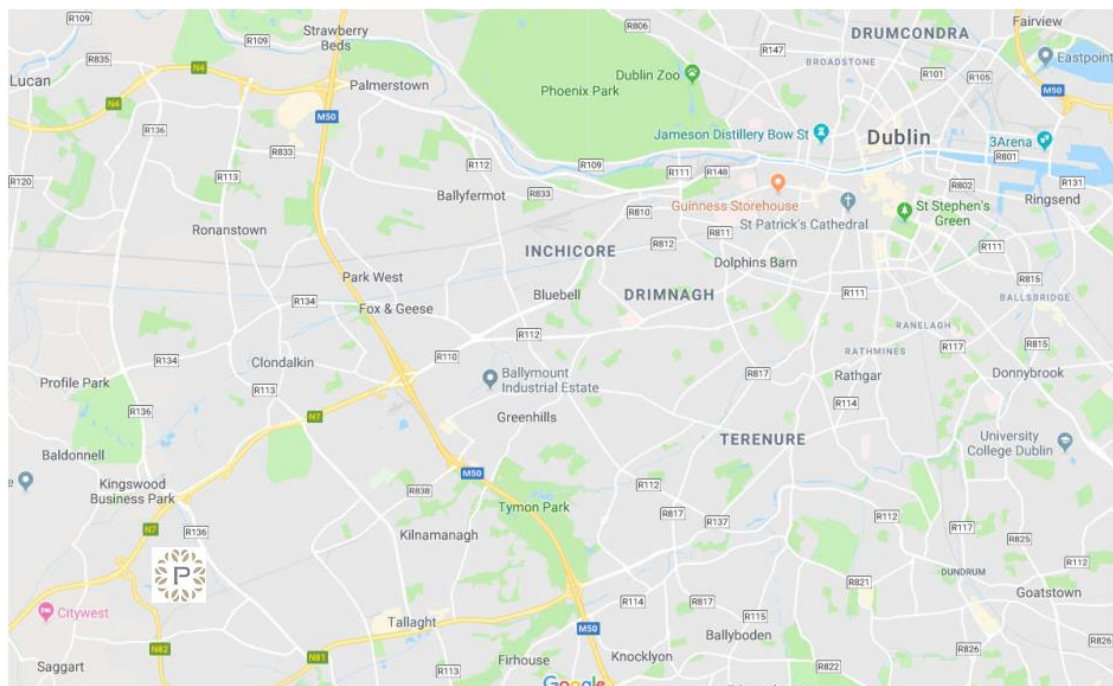


Figure 2.1 The site location

3.0 Assignment of Responsibilities

- 3.1** RVDCL shall be responsible for developing and managing the construction stage CWMDP and for incorporating the measures and methodologies described in this plan. While this plan endeavours to provide representative indicative quantities, it should be noted that the estimated volumes should be developed further as the project progresses, similarly the proposed methodologies described in this report will develop further as part of the physical works on site.
- 3.2** RVDCL's Project Manager will be responsible for the overall implementation of the plan and associated procedures and will ensure that reporting and recording requirements are met and all necessary resources are in place to support the implementation of the plan.
- 3.3** The Project Manager shall designate a Site Engineer/Manager/Assistant Manager as the Site Manager and who will have overall responsibility for the implementation of the project CWMDP. The Site Manager will be assigned the authority to instruct all site personnel to comply with the specific provisions of the plan and will be responsible for all aspects of waste management throughout the different stages of the project including waste assessment, waste characterisation, implementation of the CWMDP and associated target recycling rates together communicating the waste objectives to all operatives associated with the project (including site staff, external contracts and suppliers).
- 3.4** At an operational level, RVDCL's Site Manager and appropriate personnel from any subcontractors on the site shall be assigned to direct responsibility to ensure that the discrete operations stated in project CWMDP are performed on an on-going basis.
- 3.5** If required, a technically competent person will also be appointed to assess waste arising and determine classifications in accordance with the Hazardous Waste List.
- 3.6** A key responsibility of the nominated persons will be the maintenance of accurate records on the quantities of waste / surplus materials generated and the real cost (including purchasing) associated with waste generation and management.

4.0 Construction Plan

- 4.1** An indicative construction plan detailing the main activities involved in the project is provided below. It will be developed further by RVDCL as the project progresses. The works shall be undertaken in a manner which maximizes the potential for recycling, including source segregating waste where appropriate. The main works involve activities associated are house building, road building such as earthworks, installation of services and laying of pavements and landscaping.

Table 4.1: Indicative Construction Works Plan

Construction Activity Sequence	General Description
Identification of Existing Utility Services (O/H ESB)	Set up bunting, mark location of live services, including O/H E.S.B., Water mains etc.
Removal of Vegetation	e.g. Trees, Hedgerows
Excavation of surfacing and subsoil for road construction to sub-formation level	Mechanical Excavation, including Unacceptable Fill, etc.
Excavation of subsoil for proposed attenuation tank and foundations	Mechanical Excavation, including Unacceptable Fill, etc.
Excavation for stormwater and sewer pipes including installation of manholes	Manual or Mechanical Excavation, including Unacceptable Fill, etc.
Transport of Material from Site to On-Site & Off-Site Facilities	e.g. On-Site processing, On-Site Storage, Waste Recycling Facility
Placement of fill material and imported capping to formation levels	Re-use of Class 2C material where designated
Construction of substructure	Imported materials
Building fitout	Imported materials
Installing in-situ concrete kerbs and footpaths	Imported materials
Placing sub-base to roads and footpaths	Imported materials
Laying asphalt layers to roads	Imported materials
Transport of excess top-soil bi-product off-site (if required)	
Transport of waste Material from Site to Controlled Disposal Sites	e.g. Inert / Non-Hazardous Landfill Site
Site Preparation / Restoration	e.g. Completion of road surfacing, hard standing, footpaths, landscaping, lighting and traffic lights, landscaping.

5.0 Waste Arisings & Proposals for Managing

5.1.1 The main waste stream arisings, including surplus materials, which are likely to be generated during the project are presented in Table 5.1 hereunder.

Table 5.1: Main Waste Types and Associated EWC Codes

Waste Type	European Waste Classification Code	Waste Classification
Concrete, bricks, tiles, ceramics	17 01	
Concrete [Foundations, floor slabs (in-situ & hollow core), beams & columns]	17 01 01	Non-hazardous
Concrete (blocks)	17 01 01	Non-hazardous
Concrete (roof tiles)	17 01 01	Non-hazardous
Clay Bricks (walls)	17 01 02	Non-hazardous
Mixtures of, or separate fractions of concrete, bricks, tiles and ceramics (other than those mentioned in 17 01 06) (toilets / bathrooms)	17 01 07	Non-hazardous
Granite	-	Non-hazardous
Limestone Rubble	-	Non-hazardous
Wood, Glass, Plastic	17 02	
Wood	17 02 01	Non-hazardous
Glass	17 02 02	Non-hazardous
Plastic	17 02 03	Non-hazardous
Metals (Including Their Alloys)	17 04	
Copper, bronze, brass (pipes, handles)	17 04 01	Non-hazardous
Aluminium (roller shutters, flashings)	17 04 02	Non-hazardous
Lead (flashings)	17 04 03	Non-hazardous
Iron & steel (reinforcement, roof beams, roof trusses, radiators, pipes)	17 04 05	Non-hazardous
Cables other than those mentioned in 17 04 10	17 04 11	Non-hazardous
Soil (including excavated soil from contaminated sites), stones and dredged spoil	17 05	
Soil and Stones other than those mentioned in 17 05 03	17 05 04	Non-hazardous
Insulation Materials and Asbestos-Containing Construction Materials	17 06	

Insulation materials other than those mentioned in 17 06 01 and 17 06 03 (underfloor, cavity & roof insulation)	17 06 04	Non-hazardous
Gypsum-Based Construction Material	17 08	
Gypsum-based construction materials other than those mentioned in 17 08 01	17 08 02	Non-hazardous

Note:

- a) The selected European Waste Classification (EWC) codes provided are provisional only. In several instances more than one EWC may be considered appropriate. Care should be taken to ensure that the waste collectors permit includes all EWC codes specified in the appropriate documentation. In addition, there will be a requirement for a technically competent person to assess waste as it arises and to decide as to the classification of the material in accordance with the Hazardous Waste List.
- b) For the purposes of this plan it is assumed that all the soil and stone waste arising from the project will be categorised as non-hazardous. Analysis may be required prior to acceptance at certain facilities to demonstrate this assessment.

* Waste marked with an asterisk is considered as a hazardous waste and pursuant to Directive 91/689/EEC on Hazardous Waste European Waste Catalogue and Hazardous Waste List (Valid from 01/01/2002) EPA, Ireland.

5.2. Table 5.2 sets out the predicted waste arisings. At this stage of the development, the figures provided should be considered as **provisional only**; however, the table does provide an indication of management action. At a minimum, the RVDCL will be obliged to aim for an overall recycling rate of **83%**, in accordance with the **Waste Management Plan for the Dublin Region, 2005 - 2010**.

5.3. In the course of the Project, it is estimated that the quantities of CONSTRUCTION wastes/material surpluses will arise as in Table 5.2. The tonnage figures provided are indicative and based on conversion factors (subject to revision) presented in Table 5.2, as follows:

Table 5.2 Predicted Waste Arisings

Type of Waste (material)	Weight (T) Estimate	Management Action
Clay and Stones		
Concrete	60	Reuse
Masonry	60	Reuse
Wood	15	Reuse / Recycle
Plastic	6	Recycle
Packaging	6	Recycle
Plasterboard	10	Disposal / Landfill
Hazardous Waste	1	Removal by hazardous waste contractor
Other Waste		

- 5.4** It is noted that soil and stones derived from the bulk excavation works are not a waste but a by-product that can be reused without treatment either within the works or off-site under **Article 27 of the European Communities (Waste Directive) Regulations 2011**. It is expected that all excavated material will be uncontaminated although some may not be acceptable for incorporating into the works and may require to be disposed off-site or recycled. This material will be stock piled on site until required.
- 5.5** Apart from the main excavation works, waste will also arise on the project from unavoidable construction activities/material surpluses/damaged materials associated with the construction of a concrete frame building and the excavated material from the bulk excavation is assumed to be considered suitable for the re-use on site for general fill (on receipt of classification tests).
- 5.6** The waste associated with the construction project shall be managed in accordance with the Waste Management Hierarchy as outlined in figure 5.1 to prioritise prevention, reuse, recycling and recovering energy over disposal which is the last resort.



Figure 5.1: Waste Management Hierarchy (Source: European Commission website)

- 5.7** End of Waste (EoW) criteria specify when certain waste ceases to be waste and obtains the status of a product (or a secondary raw material). This includes certain specified waste which has undergone a recovery (including recycling) and meets certain criteria. It is considered that a large part of the waste material can be recycled in accordance with its EoW criteria.
- 5.8** Excavated clay will be carefully stored in segregated piles on the site for subsequent reuse. Where the excavated clay's classification is unusable within the works, then it may be removed from site for direct beneficial use elsewhere as a bi-product. In general, all subsoil arising from excavations will be either re-deposited as part of cut and fill operations or stockpiled at locations identified for re-use in works on site or off-site. An amount of soft material / unacceptable classification from excavations or the like may be encountered and required to be disposed off-site at a licensed land fill facility. The Project Manager will be responsible for providing certification to this effect.
- 5.9** Concrete and block waste shall be crushed and reused for fill.
- 5.10** Excess wood from shuttering works and the like suitable for re-use / recycling shall be carefully segregated stockpiled within a recycling zone in the main compound for re-use or sent for recycling such as the manufacture of chipboard. The Project Manager will be responsible for providing certification to this effect.
- 5.11** Packaging associated with materials or products delivered to site shall be source segregated for recycling or return to suppliers.
- 5.12** Ground investigations carried out to date for the works have not indicated the presence of any Hazardous Wastes on site. If any hazardous materials are discovered during the course of the works, the site team shall inform the Project Manager immediately. The site shall be secured & protected and arrangements for disposal to a licensed tip shall be agreed with the Local Authority prior to any disposal taking place.
- 5.13** Should hazardous waste arise from construction activities e.g. contaminated ground from oil spills then it shall be identified, removed and kept separate from other construction waste materials in order to avoid further contamination. The Project Manager shall implement procedures for its proper removal and / or remediation.
- 5.14** Other construction waste materials shall be separated in receptacles for disposal at a remote facility.

- 5.15** The Contractor shall ensure that materials are ordered so that the quantity delivered, the timing of the delivery and the storage is not conducive to the creation of unnecessary waste.
- 5.16** The operational waste generated from end users will mostly consist of household municipal waste. This will be stored in a designated area on the development and the development's management will ensure the collection of this is in accordance with South Dublin City Council's requirements. The Café unit will comply South Dublin City Council's requirements for commercial waste and it will be the responsibility of the tenant to apply/gain any permits required.
- 5.17** The current appointed waste management company is:



Colin Kelly
Administration, Commercial Sales
Tel: 01 6235133
Web: <http://www.thorntons-recycling.ie>




Unit S3B, Henry Road, Parkwest Business Park, Dublin 12, Registered Number 72366.

6.0 PROCEDURES

6.1 Training

6.1.1 Copies of the CWMDP shall be made available to all relevant personnel on site. The Project Manager shall arrange for all site personnel and sub-contractors to be instructed about / receive training on the objectives of the CWMDP, materials management and be informed of the responsibilities which fall upon them because of its provisions. The topics to be covered shall include:

- Project programme and requirements
- Health and safety requirements
- CWMDP
- Roles and responsibilities
- Hazardous Waste
- Materials to be segregated.
- Segregation systems and protocols
- Arrangements for the storage and handling of reusable materials and recyclables.
- Document control requirements

6.1.2 Where source segregation and material re-use techniques apply, each member of staff will be given instructions on how to comply with the project CWMDP with posters put up to in prominent locations to reinforce the key messages to site staff.

6.2 Record Keeping

6.2.1 The Site Manager shall develop a system whereby details of ALL arisings, movement and treatment of construction waste will be recorded throughout the construction stage of the Project. Where practicable, a computerised monitoring tool may be employed. This system will enable the Contractor to measure and record the quantity of waste generated and identify wastage more readily. Hence, each consignment of construction waste taken from the site will be subject to documentation and to ensure full traceability of the material to its destination. These documents are available to view in **Appendix 1 & 2**.

6.2.2 A key objective of the nominated person will be the maintenance of accurate records on the quantities of waste / surplus materials generated and the real cost (including purchasing) associated with waste generation and management.

6.2.3 Verifiable and validated tracking and authorisation documentation shall be maintained for all wastes destined for re-use, recovery, recycling or disposal. Justification shall also be provided where a disposal option has been employed.

6.2.4 In addition, a record shall be kept of all materials as they arrive on site detailing the assignment of specific uses within the works. This will enable the monitoring of the quantity and type of waste produced at various stages throughout the project.

6.3 Waste Authorisations

6.3.1 All waste material will be managed in accordance with the Waste Management Acts 1996 – 2008, e.g. all hauliers will hold collection permits for the specified EWC issued by the appropriate local authority at the destination. Waste will only be sent to facilities authorised to accept, treat / dispose of the material. Copies of all waste permits and licences relevant to the waste treatment / collection will be retained with other waste records. In the case of hazardous waste, the Site Manager will ensure that all drivers hold valid ADR training certificates, as required under the Carriage of Dangerous Goods Regulations, 2007 (Reference Section 6.1.8).

6.3.2 It is anticipated that waste materials will have to be moved off site. It is the intention to engage specialist waste service contractors, who will possess the requisite authorisations, for the collection and movement of waste off-site, and to bring the material to a facility which currently holds a Waste Licence/Waste Permit/Certificate of Registration. Accordingly, it will be necessary to arrange the following waste authorisations specifically for the Project:

Table 6.1: Specific Waste Authorisations Required for the Scheme

Authorisation Type		Specific Need for Project (Yes / No)?
Waste Licence	Yes	-
Waste Permit	Yes	-
Waste Collection Permit	Yes	-
Trans frontier Shipment Notification	-	No
Movement of Hazardous Waste Form	-	No

7.0 WASTE AUDITING

7.1 The Site Manager shall arrange for full details of all arisings, movements and treatment of construction and demolition waste discards to be recorded during the construction stage of the Project. Each consignment of construction waste taken from the site will be subject to documentation which will conform with Table SF4 below to ensure full traceability of the material to its destination.

Detail	Particulars
Name of Project of Origin	e.g. New Harbour, Motorway
Material being Transported	e.g. Soil, Demolition Concrete, Crushed Asphalt etc.
Quantity of Material	e.g. 20.50 tonnes
Date of Material Movement	e.g. 01/01/2007
Name of Carrier	e.g. Authorised Carriers Ltd.
Destination of Material	e.g. Newtown Residential and Office Development
Proposed Use	e.g. Use as Hardcore in Dwelling Floors

Table SF4: Details to be Included within Transportation Dockets

7.2 The effectiveness of the Construction Waste and Demolition Management Plan (CWMDP), and its implementation, shall be subject to regular audits by the Site Manager throughout the duration of the project in accordance with an Audit Plan (to be developed during works). This Audit Plan should be clearly defined in the project CWMDP. The regular audits shall focus on material inputs to the project and the waste outputs for each operation identifying additional opportunities for waste reduction, re-use and recycling. The audits shall also investigate the operational factors and management policies that contribute to the generation of waste and identify appropriate corrective actions, where necessary. Performance Targets have been developed, i.e. an 95-98% overall recycling target for RVDCL and sub-contractors must achieve 75% recycling but with an eventual goal of 95%. Successes and failures will be recorded, and Action Plans shall be developed to address any issues which arise. Inspections of the waste storage areas shall be undertaken on a weekly basis, issues relating to housekeeping, inappropriate storage and / or segregation will be actioned at the earliest practicable opportunity.

7.3 The Project Manager shall record the findings of the audits, including waste types identified, quantities of waste arising, final treatment method and cost, in a Waste Audit Report to be available for inspection by the Local Authority during the works.

- 7.4** 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 Final Waste Audit, which shall identify the amount, nature and composition of the waste generated on the site. The Final Waste Audit shall examine the way the waste is produced and shall provide a commentary highlighting how management policies and practices may inherently contribute to the production of construction and demolition waste. The measured waste quantities shall 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.

8.0 WASTE MANAGEMENT COSTS

- 8.1** At this stage it is difficult to determine indicative total waste management costs, however disposal costs currently range from approximately €150 to €200 per m³ for non-inert. It should also be noted that the Waste Management (Landfill Levy) (Amendment) 2012 (SI 221/2012) has increased the rate of the landfill levy, this could potentially have a significant impact on waste management costs if optimum recycling rates are not implemented.
- 8.2** During the project, the Contractor shall quantify the total cost of the construction waste arising and this shall take account of the purchase cost of all materials (including imported soil), handling costs, storage costs, transportation costs, revenue from sales, disposal costs etc. Costs shall be broken down into a range of waste materials.

9.0 WASTE MANAGEMENT LEGISLATION AND OBLIGATIONS

- 9.1** This section provides details of waste related legislation relevant to the Project. The Developer will be responsible for all waste arisings from the time the waste is generated until it reaches its destination point, this includes its method of treatment / disposal.
- 9.2** Construction waste does not have a specific regulation, rather this stream is managed through policy and other measures such as planning and targets for recycling.
- 9.3** The principal European framework legislation for waste is;
- European Directive (2008/98/EC) on Waste (Waste Framework Directive);
 - Council Decision (200/532/EC) establishing a list of wastes; and
 - Regulation (1013/2006) on the shipments of waste.
- 9.4** At a national level The Waste Management Acts 1996 – 2008 and Amendments, give effect to the “polluter pays” principle effectively stating that the waste producer may be liable for any pollution incidents arising from the management of their waste. There is therefore an onus on the Developer to ensure that all contractors managing waste on their behalf are legally compliant and technically competent and the waste itself is contained, handled, treated and disposed of in accordance with all relevant regulatory requirements.
- 9.5** A brief description of the main waste related regulatory controls relevant to the project is provided hereunder; however, the list is not exhaustive and should be reviewed and amended at regular intervals in accordance with changing legislation:
- Eastern Midlands Regional Waste Management Plan 2015-2021.
 - Waste Management (Landfill Levy) (Amendment) 2013 - An amendment to the Waste Management Act, which allows for an increase in the landfill levy to the current level of €75 per tonne.
- 9.6** Waste Management (Facility Permit and Registration) Regulations 2007 as amended - These regulations describe the process for obtaining a Waste Permit or Certificate of Registration, by a private operator from a local authority, or a Certificate of Registration from the Environmental Protection Agency (EPA) in respect of a local authority run waste activity which requires registration.

- 9.7** Waste Management (Licensing) Regulations 2004 - These regulations relate to the process for obtaining a waste licence from the EPA for the operation of certain waste recovery or disposal facilities under Part V of the Waste Management Act.
- 9.8** Waste Management (Collection Permit) Regulations 2007 as amended – Waste collectors are required by the Regulations to comply with the conditions of a permit to collect waste. The Regulations set out the procedures for making a waste collection permit application, its conditions etc. (Offaly County Council is the National Waste Collection Permit Office and is responsible for administering waste collection permits in Ireland).
- 9.9** Waste Management (Hazardous Waste) Regulations 1998 as amended - These regulations control the movement of hazardous waste within Ireland requiring authorisation in the form of C1 consignment forms. The C1 form is completed by the Consignor, the Carrier and the Consignee. A three part document provides a tracking mechanism for the hazardous waste from its point of origin to its final destination.
- 9.10** Waste Management (Movement of Hazardous Waste) Regulations 1998 - These regulations control the movement of hazardous waste within Ireland requiring authorisation in the form of C1 consignment forms. The C1 form is completed by the Consignor, the Carrier and the Consignee. A three part document provides a tracking mechanism for the hazardous waste from its point of origin to its final destination.
- 9.11** Waste Management (Shipments of Waste) Regulations 2006 - These regulations control the movement of waste across member states. Shipments are controlled under a TFS (Trans frontier Shipment) form, which designates the waste under the categories of Green, Amber and Red List.
- 9.12** European Waste Catalogue (EWC) and Hazardous Waste List, 2002 - EWC codes and the hazardous waste list form the basis for hazardous waste classification throughout Europe i.e. a waste is considered hazardous if it exhibits one or more hazardous properties H1-H14.
- 9.13** Carriage of Dangerous Goods Regulations, 2007 - These regulations require drivers transporting dangerous goods to be ADR trained. In addition, a Dangerous Goods Safety Advisor (DGSA) must be appointed where activities include the carriage, or related packing, loading, filling or unloading of dangerous goods.

- 9.14** European Communities (Waste Directive) Regulations 2011 Article 27 - These regulations regard soil and stone waste generated from a primary process within the development and building industries, can be considered a by- product and can be reused by on other developments pending the EPA's approval of no contamination.

Appendix 1 Contractor Waste Removal Log

Date	Skip Size	Waste Carrier	Waste Carrier Licence No.	Waste Management Licence No.	Destination	Document Reference

Appendix 2 Waste Disposal Log

Date/ Month	Total Waste(Kg)	Type of waste	European waste code	Action	Landfill Name	Permit No (exempt)	Approx Kg	Approx %	Doc Ref:

Waste Log (Tonnes)

Key Inert (I)
 Active (A)
 Hazardous (H)

It is good practice to record at least every six months the type and quantities of waste produced and what has happened to this waste.

Date	Company	Type of waste	Quantity in Tonnes (T)							
			Re use on site	Re use off site	Recycling on site	Recycling off site	Recovery on site	Recovery off site	Sent to landfill	Other disposal