WASTE MANAGEMENT PLAN (Construction)

Pacific National – St Mary's Freight Hub

Pacific National Pty Ltd

8600481

Project Version: 1	**Name**	**Signed**	**Date**
Prepared by	Alan Pollitt		08/03/19
Reviewed by	Shaun Emery		08/03/19
Approved by	Shaun Emery		08/03/19

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1. Control & Distribution

This document has been developed and issued solely for use by Company personnel and the regulatory agencies that are directly involved with the delivery of the St Mary's Freight Hub.

This Plan and the information contained herein remains the property of the Company and may not be disclosed in whole or in part, either verbally or in writing, without the prior consent of the Company or used by any the recipient for purposes other than those for which it has been issued.

1.1. Control

All amendments to this document are to be marked up in the Control Table. The issue of the amendment is to be by the authorisation of the Project Manager.

Version #	Date Issued	Summary of Change	Revised By	Approved By
1.		Developed for Tender	Alan Pollitt	Shaun Emery

Should a revision occur, the full document with the updated version number will be issued to each of the registered holders. Amended copies of this plan shall be reissued to those in receipt of the previous version (unless they are no longer involved in the project). Obsolete copies of the plan are required to be removed from use when a revised plan has been received.

The latest revision of this plan is available on the project server and a hard copy shall be held on the project site accessible to all workers.

1.2. Amendment

This Waste Management Plan (WMP) is a working document and shall be reviewed and amended as follows:

- revised and reissued to the Client for review within 7 days from contract award
- reviewed when works significantly change or evolve on site in such a way as they could affect the project
- on receipt of a site management complaint
- in the event of a safety incident, non-conformance, or incident report
- internal audit report or a legislative change indicates that amendments are required
- at least every 3 months.

Amendments to this plan may also be made:

- to correct errors or ambiguities
- to reflect new or revised company system procedures or site work procedures.

All amendments to this Plan shall be approved by the Project Manager prior to re-issue.

1.3. Distribution

Document Holder	Position & Company	Date Issued	Issue #
Insert Name	Client Representative		1.
Shaun Emery	Company Project Director		1.
Craig Rutjens	Company WHSEQ Manager		1.
Insert Name	Company Project Manager		1.
Insert Name	Company WSH Advisor		1.
Insert Name	Others TBA		1.

1.4. Communication

A range of communication tools will be utilised by the Company to inform site personnel of waste management requirements and / or issues. These include:

- Project induction, which will provide comprehensive information on the waste management requirements of the project
- Daily Pre-Start Meetings, held daily or prior to a shift commencing
- Weekly Toolbox Meetings, which will include specific environmental issues

The Project Manager will have the primary responsibility for communication and consultation between the Company, subcontractors and stakeholders in regards to this Plan or any day-to-day site management issues.

Reference
BMS 05 –Consultation & Communication

2. Introduction and Purpose

2.1. Introduction

The Company undertakes all site-based activities in accordance with the Integrated Business Management System (IBM) which incorporate all Work, Health, Safety, Environmental and Quality Management System requirements.

The IBM is certified under the Federal Safety Commission Scheme and the requirements of AS/NZS 4801:2001 Occupational Health and Safety Management Systems, ISO 9001:2015 Quality Management Systems, and ISO 14001:2015 Environmental Management Systems and integrates International and Australian Standards, legislative and regulatory requirements.

2.2. Purpose

The Company is committed to best practice Environmental Management. This WMP outlines the principles to be adopted by the Company in the delivery of the St Mary's Freight Hub Works to effectively manage waste and assisting to maximise project's sustainability performance.

This WMP covers

- roles and accountabilities
- review and amendment
- waste management objectives
- waste mitigation measures
- waste containment and storage
- disposal methods

3. Roles and Responsibilities

3.1. Project Manager

The Project Manager is accountable for the overall effectiveness and implementation of the Waste Management Plan and is responsible for:

- approving changes to the Waste Management Plan
- ensuring the Plan meets Contract conditions
- ensuring initiatives identified in the Waste Management Plan are achieved
- ensuring that subcontractors meet the requirements of the Plan
- ensuring construction activities are consistent with achieving waste management and sustainability objectives and initiatives contained within this Plan
- ensuring the Waste Management Plan remains up-to-date and relevant to the project.

3.2. Site Manager

The Site Managers key tasks include:

- reporting of the process of all waste management elements including that of construction waste recycling and reuse
- ensuring subcontractor engagement in the process
- reporting to the Project Manager on the process of waste management elements on site
- explore waste management issues, creation of alternative options and challenge proposals
- assessment of alternatives and exploration the best options in waste minimisation and management.

3.3. Reporting

The Company will provide Pacific National with a written Waste Management Performance Report at each project review meeting. The Company will discuss the performance report, respond to any questions raised in relation to any report and make all necessary recommendations as to the actions required.

4. Waste Management Plan Scope and Objectives

4.1. Scope

The scope of this Construction Waste Management Plan outlines the following:

- waste streams and classification
- disposal, handling and / or storage methodology for identified waste streams
- mitigation measures

The mitigation measures detail the strategies that will be utilised in the management of solid and liquid waste generation in adherence with the Waste Hierarchy, during the construction phase of the St Mary's Freight Hub Works.

The plan has been prepared on behalf of Pacific National Pty Ltd, the Principal for this Project and adheres to compliance requirements for **SEARs (Standard Secretary's Environmental Assessment).**

The following table (Table 1) summarises SEARs Requirements and the respective sections of this report demonstrating compliance for the construction phase of the St Mary's Freight Hub Works.

SEARs Requirement	Waste Management Report Compliance & Reference
Details of the quantities and classification of all waste streams to be generated onsite	Section 6 of this report summarises the types, quantities and management systems for construction materials that may be generated during the civil works Activities
Details of waste storage, handling and disposal	Sections 5 of this report detail the management of construction waste onsite, with clear instructions for its storage, potential reuse and removal offsite.
Details of the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy	In identifying construction waste streams and generation rates, strategies to minimise the generation of waste to landfill and to increase the recycling of materials, as well as defining the roles and responsibilities of site managers and contractors, this Plan directly engaged with the NSW Waste Avoidance and Resource Recovery Strategy.

Table 1: SEARs Requirements

4.2. Objective

The Waste Hierarchy forms the basis of the Waste Management Plan as per follows (in order of decreasing preference):

1. **Avoid** producing waste
2. **Reduce** the amount produced
3. **Recycle** waste where possible
4. **Treat** Waste before Disposal
5. **Dispose** of Waste

Utilizing the Waste Hierarchy, this plan aims to implement waste management procedures to achieve the following project-specific objectives:

a) Minimise impact and consequences of liquid and solid waste generation
b) maximise and optimise the re-use of excavated material in a beneficial manner allowing minimization of landfill disposal of waste and off-site re-use
c) generation of waste to be effectively monitored ensuring compliance with relevant legislation, conditions and guidelines including (but not limited to):
    i. NSW Environment Protection Authority Waste Classification Guidelines
    ii. Environmental Planning and Assessment Regulation 2000
    iii. Protection of the Environment Operations Act 2007
    iv. Environmental Offences and Penalties Act 1989
d) Optimising utility of recyclable waste streams through minimizing contamination, where possible
e) Monitoring and recording of waste volumes to potentially allow further waste reduction, recycling and cost reduction
f) Effective coordination with contractors or other personnel to
    i. enable identification of opportunities for water reuse and/or reuse of materials for respective trades
    ii. raise awareness among employees and subcontractors of their waste management responsibilities
g) Pollution and environmental damage prevention
h) Prevention of excessive concrete waste accumulation on site to ensure protection of stormwater assets (e.g. inlets) and by extension, natural watercourses and environments.
i) Protection of the safety and health of employees, site personnel and the public

5. Mitigation Measures

5.1. Reduce Waste Production

The project will minimise the production of waste materials in the construction phase through assessment of design and construction alternatives for both civil works and building works, considering resultant waste production including:

- Monitoring and assessment of the volume of bulk earthworks and the respective requirement to remove spoil from site. This has been assessed in the design development of the works, whereby the amount of spoil material to be removed from site has been reduced to zero.
- Minimising use of materials (such as concrete) which have significant 'cradle to grave' waste and environmental impacts (e.g. elimination of concrete walls and use of cladding enclosure for wash bay facility)
- Procurement of materials with minimal packaging, or are pre-cut or fabricated, indicative of reduced waste generation (e.g. modular building with components pre-fabricated)
- Procurement of accurate quantities of materials and products through:
  - quantity take offs from detailed design(s) and/or specification(s)
  - effective contract management procedures such as raising timely rfis this will enable reduction in over ordering of products and materials, and thus waste production.
- All major subcontractors will be required to provide details on waste minimisation measures

5.2. Re-use of Materials

Where possible, the Company will ensure materials are re-used, preferably on site, or offsite for effective waste management. This will be implemented through:

- identification of waste streams and products with opportunities for re-use
- Implementation of systems for segregation and storage of re-usable items or materials (e.g. Stockpiles for site-won excavated material – See Appendix A for Location of Stockpiles)
- Identify potential use of re-usable items through effective communication with stakeholders followed by contract management procedures to enable re-use (please see Section 3 for Re-use measures for respective waste streams)

5.3. Recycling

The Company will identify recyclable waste products that will be produced on site and thereafter: re-used, preferably on site, or offsite for effective waste management. This will be implemented through:

- provision of systems for separation and stockpiling of recyclable material(s)
  - bins to be provided on site with appropriate colouring for respective waste
  - bins to be located on site to maximise recovery of reusable/recyclable materials
- provision of clear signage to ensure separation of recyclable materials
- processing of material for recycling either on-site or offsite
- maximise the usage of recycled products in asphalt and concrete production
- recycled pavement materials will be utilised in the pavement construction

5.4. Disposal

The Company will dispose waste products which are unable to be reused or recycled, as per Waste Hierarchy principles of management.

Contractor's selected for disposal of waste will need to comply with regulatory requirements in addition to implementing regular collection of bins and disposed waste.

Waste material shall be disposed of via methods approved in Safety Data Sheets and in line with the Environmental Protection Agency in the jurisdiction where works is being undertaken.

5.4.1. Excavated Material & Concrete Wastes

The Construction Phase of the St Mary's Freight Hub Project has no planned disposal of Concrete Wastes. A Concrete Washout Facility will be established to allow for wash out of concrete waste material.

Furthermore, through effective waste management planning, excavated material waste, concrete waste (Solids) and / or spoil will be reused in temporary works or site levelling, where practicable. If site-won excavated material is unable to be used on site, this waste material will be sent off-site for recycling or disposed at Land Fill (See **Section 5.4.2** for monitoring procedure).

Liquid waste material generated through the dedicated concrete wash out facility will involve mitigation measures applied as per **Section 5.4.3** of this report, to ensure further liquid waste by-products generated from this washout facility are also safely disposed.

5.4.2. Off-Site Waste Monitoring

Off-site waste tracking will be undertaken in accordance with EPA waste tracking guidelines. The Company will provide a consignment number and load for each load of waste leaving the site, together with the address of the waste disposal location.

Qualified personnel will be used to effectively perform assigned responsibilities to ensure proper management, shipping and documentation of waste, including the completion and verification of waste shipping documents. Each load of disposed material that leaves site will be weighed and recorded with appropriate documentation for the material being disposed of provided. These will be tracked on a 'truckload by truckload basis', detailing the following:

- Destination
- Material Type
- Material Classification (if required)
- Date
- Time
- Truck Identification.

This document will be reviewed and updated as required throughout the construction phase when unknown waste materials arise or when management process changes need to be implemented to manage associated risks.

A waste tracking system will be utilised that will track all material removed from site as part of the works process. Each load of disposed material that leaves site will be weighed and recorded with appropriate documentation for the material being disposed of provided.

Reference:
F110 - Waste Tracking and Disposal Form

5.4.3. Liquid Waste Material

Two primary sources of liquid waste on site, requiring disposal, are the concrete and wet trades wash out facilities.

Wash out facilities may generate liquid waste through wash out of paint, coatings and other material pertaining to cleaning of equipment, plant or amenities required for works. This liquid waste presents a risk of contamination and environmental damage to the stormwater system and in extension, natural water courses, such the Creek Crossing, identified in **Appendix A**.

The Company will complete and review a Safe Work Method Statement (SWMS) to assess potential pollution to the stormwater system and implement appropriate protection measures.

Stormwater protection measures include but are not limited to the installation of sandbags, geofabric and strategic staging of works to protect stormwater assets. Discharge to the Stormwater System must be appropriate clean water only.

Site Inspections will be undertaken by site personnel to monitor potential for contamination to the stormwater system and the greater environment from waste water resulting from the wash out facility.

Works will not take place until appropriate control measures are implemented. All disposal (Inclusive of Wash Out) of materials, will also be undertaken as per relevant Safety Data Sheet Instructions for all trades.

Water utilised in Wash Bay Facilities, must be used in moderation as required for cleaning and not left to run unnecessarily.

5.4.4. Green Waste

Green waste for the works is planned to be minimal, with all green waste generated to be utilised after on-site chipping.

5.4.5. Litter Management

Litter waste generated on site will be identified through consistent Site Inspections and rectified through disposal in appropriate Waste Bins. Optimal litter management will be achieved through investigation of work activities generating litter, to potentially highlight and implement mitigation measures with the objective of reducing generation of litter from identified activities.

Sufficient quantities of waste bins will be provided by the Company to ensure waste material, including litter, is not disposed of outside of appropriate waste or recycling bins. Waste bins will be of appropriate colour to ensure accurate waste classification and disposal, as per waste management guidelines. Waste bins will have covers to ensure disposed waste material are contained in the appropriate bins.

Paper and cardboard from packaging material and office related works will be disposed of into designated bins. Site inspections will be undertaken to ensure paper and cardboard waste is not littered on site and is placed in designated waste bins.

5.4.6. Metals

Scrap metal on site will be recycled through the use of dedicated 10 cubic metre bins, as required, with timely disposal and transport to a metal recycling facility.

5.4.7. Asbestos Waste

The discovery and subsequent disposal of asbestos waste is not expected for the St Mary's Freight Hub Construction Works.

Any suspected contaminated material shall be handled in accordance with Safe Work Procedure SWI 0300 – Asbestos Management – Discovery of Asbestos to ensure that the discovery of contaminated materials is handled in a safe manner, and is handled in accordance with all relevant codes and standards.

The SWI shall be communicated to all employees and subcontractor employees at toolbox meetings and, if required, pre-start meetings.

A map detailing the location of contaminated materials discovered on site shall be kept and maintained with the register.

All personnel who have been subject to contact with contaminated materials shall be entered onto a separate register, and all relevant details of their contact with the materials shall be placed on their personnel files.

If / where additional or unknown asbestos is suspected or identified throughout the course of works, all activities shall immediately cease in the works area and the find shall be reported to the Company Construction Manager for communication to the client. Samples shall be taken for analysis and a written report be requested.

Asbestos shall only be removed by licensed operators who shall provide a written report to the Company for the conducted works inclusive of removal and disposal.

References:
SWI 0300 – Asbestos Management – Discovery of Asbestos

6. Project Specific Waste Streams

The following table highlights identified Waste Streams, estimated quantities and mitigation measures, as per SEARs requirements. Site Management will be responsible for implementation of Controls to ensure effective Waste Management is practiced on Site.

The mitigation measures are based on estimates presented in this table, which may vary on finalization of Contract and on-site inspection(s). As a result, mitigation measures may require changing on finalisation of the Contract and / or requisite site inspection(s).

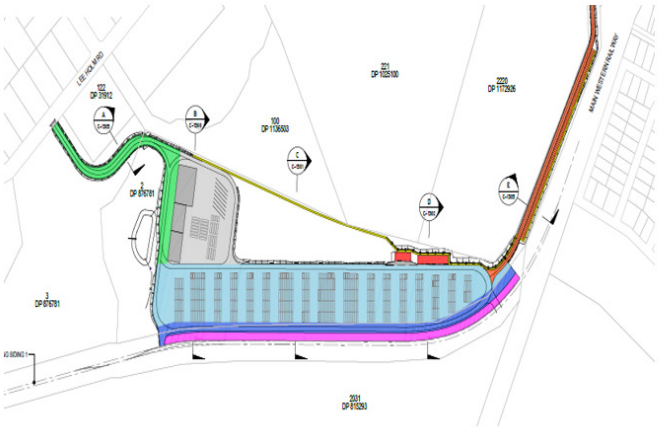
Procurement of specialist contractors will be organized, as required, for safe disposal of respective waste streams and approved waste management practices.

Key Waste Stream	Estimate Volume	Segregation Areas / Containers Commonly Available	Re-use/ Recycling/ Disposal Method
Concrete Wastes (solids)	5m3	10m3 bins	Reused in temporary works or site levelling where practicable, or sent off-site to recycling
Liquid wastes from concrete washout.	10m3	Dedicated washout facility	Solids (Slurry) to recycling On site recycling of waste water if possible.
Scrap metal	<5m3	10m3 bins	Off-site recycling
Organic food scraps	<5m3	240L bins	On-site compost heap/bin or Off-site to landfill with other non-recyclable municipal waste
Food packaging	<5m3	240L bins	Off-site to landfill
cans / bottles /	<5m3	240L bins	Off-site recycling
Paper and / or other office based recyclables	<5m3	240L bins	Off-site recycling
Asphalt	10-20m3	10m3 bins	Reused in temporary works or site levelling where practicable, or sent off-site for recycling
Green waste	30-50m3	Wood chipped (trucks)	Green waste to be chipped and utilised onsite
Timber	<5m3	10m3 bins	Off-site for recycling
Excavated spoil	30,000m3	Stockpiles	To be reused onsite exemption or license, or disposal to landfill
Liquid wastes from wet trades **(paint, dry walls, renderers, tilers etc)**	<1m3	Dedicated washout device / plant / facility Treatment system.	Off-site to landfill

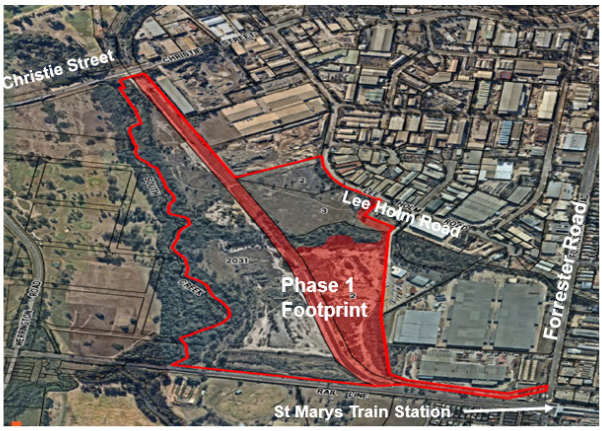
Sediment controls	<5m3	Stored on site	Reuse controls where possible on other sites
Sediment build up behind erosion and sediment control structures	<5m3	Keep behind control structures until they are at capacity	Respread on site, unless obvious contamination with hydrocarbons or other chemicals evident (by sight /
Drums and containers (empty and containing no residue)	<1m3	Stored in bunded areas.	Taken off-site by licensed contractor for suitable rinsing and disposal at licensed landfill
Waste oil, grease, lubricants	<1m3	Sealed drums / containers in bunded area	Off-site recycling by licensed waste oil recycler
Oily rags and filters	<1m3	200L (or thereabouts) bins	Off-site to landfill
Used spill management materials such as absorbent pads / booms, used absorbent materials used to mop up oil spills / contaminated dirt from dripping machinery or other hydrocarbon / chemical sources	<1m3	Bins and / or tanks suitably bunded	Taken off-site to landfill.
Printer Cartridges		Bin provided (capacity 20 – 25 standard cartridges)	Off-site recycling

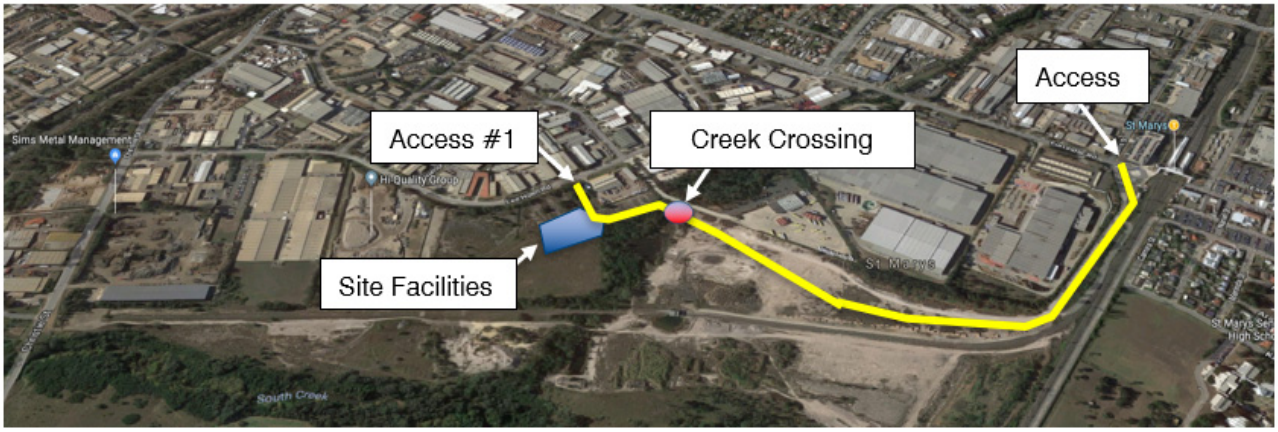
7. Appendix A - Site Location and Layout

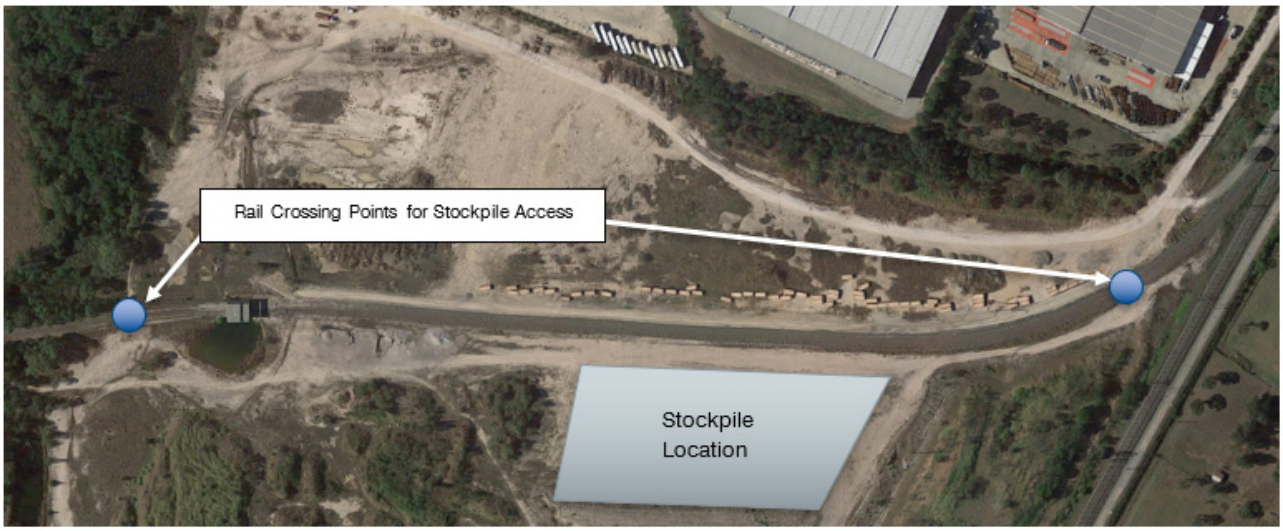
ST Marys – Phase 1 Footprint



St Marys – Locality Plan







8. Appendix B - SWI 152 - Environmental Management, Waste and Recycling

Safe Work Instruction	Environmental Management Waste & Recycling	SWI 152

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Overview

#	Major Step	Key Point (Success / Safety / Ease)	Reason to Follow Key Point
1	Waste Hierarchy	Waste should be managed in accordance with the waste hierarchy as shown in the figure below. **Avoid** producing waste **Reduce** the amount produced **Reuse** materials **Recycle** waste **Treat** waste before disposal **Dispose** of waste	Reduce waste to ALARP
2	Strategies to Reduce Waste	1. Avoiding waste production makes economic sense. Where possible, order items such as timber, plasterboard, etc. pre-cut to your required length and size. 2. Order only what is required. If items are left over—for example, bricks and tiles—return the unused quantity to the supplier, or to a second-hand dealer for resale. 3. Where possible, consider using materials with recycled content and/or plantation grown timber. This reduces the demand on our natural resources, and encourages the recycling and reuse of waste products. 4. Use suppliers who will accept back their packaging—for example, return pallets	

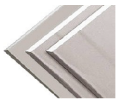
Waste Management

#	Major Step	Key Point (Success / Safety / Ease)	Reason to Follow Key Point
1	Approved Disposal	Waste material shall be disposed of via methods approved in Safety Data Sheets and in line with the Environmental Protection Agency in the jurisdiction where work is being undertaken.	Waste disposed of via approved methods

Planning

#	Major Step	Key Point (Success / Safety / Ease)	Reason to Follow Key Point
1	Provisions to Recycle	Recyclable material must be identified on all project sites. Recycling shall be considered during project planning start up via the contract Start Up Meeting (F602) Separate bins must be in place and identified so as to ensure material is disposed of appropriately.	Plan for recycling on projects
			

Material that Can be Recycled

#	Major Step	Key Point (Success / Safety / Ease)	Illustration
	Recycle	**FERROUS METAL (contains iron) -** 100% recyclable. Steel from structures is segregated on all demolition projects.	
		NON FERROUS METAL - 100% recyclable. Copper piping from demolition and offcuts of material from building activities are segregated and recycled.	
		NON FERROUS - ALUMINIUM—100% recyclable. Window frames from housing demolition activities are segregated and recycled.	
		GYPSUM PLASTERBOARD CSR recycles plasterboard. If disposed to landfill, it produces poisonous hydrogen sulphide and has a foul odour. Building services will produce gypsum offcuts during works. Demolition process has the potential to dispose of large quantities.	
		TIMBER Can be reprocessed into horticultural mulch or reused.	
		CONCRETE Unset concrete can be 'washed out' at the plant to remove cement. The sand and stone can be reused. Set concrete can be crushed and recycled as aggregate for new concrete or road base and fill.	
		BRICKS & TILES Can be reused where appropriate or crushed on-site for backfill, aggregate and gravel, using portable crushing plants.	
		PLASTICS Many plastics can be granulated and reused to make new plastic products for use within the building industry.	
		MOST GLASS Can be recycled. Construction glass must be separated from other glass such as drink bottles Glass may be cut and reused or recycled as aggregate for concrete.	
		CARPET In good condition can be sold and reused. It can also be recycled into secondary carpets. Some carpet can be recycled as weed barriers or as a covering and food for worm farms.	

9. Appendix C - F110 - Waste Disposal Form

Form	Waste Disposal Form	F 110

V2.0 FEB 2017 CC: Project File

• Date	Transporter Company Name / Driver Name	Waste Type (ie - Friable / Non Friable Asbestos / PCB)	Weight / Cubic M	Waste Originator Name / Address	Waste Receiver Name / Address	Waste Receiver Licence Number	Disposal Docent Number (EPA WTC / Dump Docket)

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