



# 28-32 Evans Street, Penrith

## Construction & Demolition Waste Management Plan

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This report is based on information provided by Stema Pty Ltd coupled with Foresight Environmental’s knowledge of waste generated within the commercial sector. To that extent this report relies on the accuracy of the information provided to the consultant. It has been compiled by Foresight Environmental on behalf of Stema Pty Ltd.

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# 1. Introduction

This Construction and Demolition Waste Management Plan has been prepared by Foresight Environmental on behalf of Stema Pty Ltd. (the 'Applicant') as part of the Development Application for the redevelopment of 28-32 Evans St, Penrith.

The plan details the way in which the proposed development at 28-32 Evans St, Penrith will manage the waste and recycling generated during the demolition and construction phases of the development.

## 2. Overview of Development

The proposed development seeks to demolish the existing structures at the site 28-32 Evans St, Penrith. and construct a new multi-unit residential dwelling which consists of 5 floors with 54 units and a 3 level basement.

The proposed development includes the following:

- Demolition of the existing buildings
- Demolition of various onsite features; fencing, garden beds, graded pits, carport
- Removal of existing trees
- Construction of a new multi-unit residential dwelling

The purpose of this construction and demolition waste management plan is to outline the systems and practices involved in managing waste and recycling during the demolition and construction phases of this development.

### 3. Waste Generation Estimate

The aim of this Plan is to ensure that all waste resulting from construction and demolition activities is managed in an effective and environmentally aware manner. Specifically,

- To maximize the reuse and recycling of demolition and construction materials
- To reduce the volume of materials going to landfill
- To maximise waste material avoidance and reuse on site
- To ensure that where practicable, an efficient recycling procedure is applied to waste materials
- To ensure efficient storage and collection of waste

#### 3.1 Demolition

The testing and classification of any excavated material is not covered in this report. Where necessary separate specialist testing should be conducted by the project managers.

If acid sulphate soils are present on site, a separate management plan will need to be prepared for handling and disposal of such soil.

Based on the cost plan provided to Stema Pty Ltd, it is estimated that approximately **6,974m<sup>3</sup>** of waste will be generated during the demolition/excavation phase of the development. The following table details the estimated composition by area or volume of demolition waste to be generated.

Table 1 - Composition of demolition waste by volume

Material	M <sup>3</sup>
Fill	3,750
Concrete	687
Bricks	615
Timber	540
Plasterboard	470

Metal	342
Tiles	305
Vegetation	115
Carpet	80
Glazing	70
<b>Total</b>	<b>6,974</b>

## 3.2 Construction

The quantity of waste materials to be generated onsite are estimates based on the information provided to Foresight Environmental and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

Table 2 below details the estimated composition by area or volume of construction waste to be generated.

Table 2 - Composition of construction waste by volume

Material	M <sup>3</sup>
Concrete	221
Vegetation	207
Plasterboard	113
Timber	62
General Residual	50
Metal	46
Paint	30
<b>Total</b>	<b>729</b>

## 4. Waste Management Strategy

The following waste hierarchy will be used as a guiding principle:



### Avoid and Reduce

Minimise the production of waste materials in the construction process by

- Assessing and taking into consideration the resultant waste from different design and construction options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials

### Reuse

Ensure that where ever possible, materials are reused either on site or offsite

- Identify all waste products that can be reused
- Put systems in place to separate and store reusable items

- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

## Recycling

Identify all recyclable waste products to be produced on site

- Provide systems for separating and stockpiling of recyclables
- Provide clear signage to ensure recyclable materials are separated
- Process the material for recycling either onsite or offsite

Note: In some cases it may be more economical to send the unsorted waste to specialised waste contractors who will separate and recycle materials at an offsite location.

## Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with OEH requirements
- Implement regular collection of bins



## 5. Waste Management Systems

### 5.1 Onsite and Offsite Systems

Table 3 – Waste management systems (demolition)

Material	Estimated volume (m <sup>3</sup> )	Onsite (re-use or recycle)	Offsite (recycling contractor)	Disposal (contractor and landfill site)
Fill	3,750m <sup>3</sup>	Suitable soil to be reused where appropriate for onsite landscaping		All surplus fill will be taken offsite for appropriate disposal at landfill
Concrete	687m <sup>3</sup>		Removed from site as required for recycling/reuse at C&D facility for processing.	
Bricks	615m <sup>3</sup>		Separated onsite then transported to brick recycling facility	
Timber	540m <sup>3</sup>		Separated onsite then returned to supplier for re-use if appropriate or transported timber recycling yard	
Plasterboard	470m <sup>3</sup>		Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility	
Metal	342m <sup>3</sup>		Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling	

Tiles	305m <sup>3</sup>		Stockpiled and collected by tile merchant/supplier for reuse/recycling	
Green/Vegetation	115m <sup>3</sup>	Mulched and reused onsite where appropriate (landscaping)	Stockpiled and transferred to green waste recycling/mulching facility i.e. Australian Native Landscapes	
Carpet	80m <sup>3</sup>		Stockpiled and collected as required by carpet supplier for recycling contractor	Unsuitable material will be taken to landfill for disposal
Glazing	70m <sup>3</sup>		Stockpiled and collected as required by specialty glass recycler or taken to appropriate C&D facility for separation and recycling	

Table 4 details the expected waste materials and management systems for the construction phase of the project.

Table 4 – Waste management systems (construction)

Material	Estimated volume (m <sup>2</sup> or m <sup>3</sup> where indicated)	Onsite (re-use or recycle)	Offsite (recycling contractor)	Disposal (contractor and landfill site)
Concrete	221		Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.	
Vegetation	207	Mulched and reused onsite where possible (landscaping)	Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes	
Plasterboard	113		Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility	
Timber	62		Separated onsite then returned to supplier for re-use if appropriate or transported timber recycling yard	Collected by contractor and disposed at appropriate landfill
General Residual	50			Collected by contractor and disposed at appropriate landfill
Metal	46		Stockpiled and collected as required by specialty metal recycler or taken to	

			appropriate C&D facility for separation and recycling	
Paint/waterproofing	30L		Clean tins recycled by metal recycler where possible	Residue/wash-off hardened and disposed appropriately

Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities<sup>1</sup>. The figures in Table 3 and 4 above are estimates and are used as a guide for designing the waste management systems on site. These figures will be adjusted according to the final building material selection and quantities. The waste management systems will be adjusted as necessary.

It should be noted that there are multiple offsite recycling/disposal facilities available for the appropriate processing of the materials detailed above and the facility choice will depend largely on the waste contractor/supplier engaged.

## 5.2 Waste Storage and Collection

A designated waste storage area will be established for the collection of all waste and recyclables. The waste storage area shall have appropriate signage to clearly identify the area to construction workers and to prevent unauthorised access to the area.

Stockpile size should be minimised by regular removal of waste from site and construction staging plans must allow for the waste storage area to move within the site as the development progresses.

The construction waste storage area does not have to be enclosed. However, containers should be covered where possible to prevent transmission of dust and fine particles, odour, wind impacts, vermin and vandalism or theft. Containers will be stored on a hardstand area with appropriate sediment control measures implemented to mitigate run-off into stormwater. Any spillages in the waste storage area should be treated immediately using a spill kit. Contaminated or hazardous wastes should be stored in a secure area with appropriate signage.

<sup>1</sup> McGregor Environmental Services (2000) Predicting C&D waste quantities in the Inner Sydney Waste Board Waste Planning Guide for Development Applications-Planning for Less Waste (1998) NSW Waste Boards

### 5.3 Site waste control and management

To ensure adequate site environmental standards are maintained, it is recommended that the following controls be implemented and enforced by the proponent:

1. All waste generated during the project is assessed, classified and managed in accordance with the "Waste Classification Guidelines Part 1: Classifying Waste" (DECCW, December 2009)
2. The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste or spoil from the vehicle or trailer
3. Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorized plant leaving the site, is removed before the vehicle, trailer or motorized plant leaves the premises.

### 5.4 Hazardous Wastes

During any demolition and material recovery activities, contractors should beware of potentially hazardous materials. A detailed Remediation Action Plan has been prepared by Douglas Partners for this project – this waste management plan defers to the RAP report for the specific provisions and protocols pertaining to the management, remediation and removal of any potential hazardous wastes (i.e. asbestos, lead paint etc) that may be found onsite.

Hazardous construction materials should be disposed of in accordance with EPA guidelines in order to protect the environment and personnel. In order to avoid risk to the environment and any breach of legislation this development endeavours to uphold the following practices:

- Early identification and reporting of hazardous waste
- Reporting of any suspicious activities of involved stakeholders (waste generator, transporter or receiver) to including handling waste unlawfully or illegally dumping waste through the Environment Line on 131 555.
- Ensure waste is transported to a place that can lawfully accept it under Section 143 of the Protection of the Environment Operations Act 1997.

- Take all reasonable precautions and exercise due diligence at all times to prevent/minimise commission of any offence.
- Keep accurate written records such as:
  - who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
  - copies of waste dockets/receipts from the waste facility (date and time of delivery, name and address of the facility, its ABN, contact person).

## 5.5 Contracts and Purchasing

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.

The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy or separately as appropriate
- Ensures that the right quantities of materials are ordered, minimally packaged and where practical pre fabricated. Any oversupplied materials are returned to the supplier
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Ensuring all skips/bins/stockpiles are clearly labeled identifying which material is suitable for each receptacle
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted

- Providing training to all site employees and subcontractors in regards to the WMP as detailed in section 5.3 below.
- Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems
- Retaining demolition and construction waste dockets to confirm and verify which facility received the material for recycling or disposal.

## 5.6 Training and Education

All site employees and sub contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled. They are also to be made aware of waste reduction efforts in regards to packaging.

The site manager will post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.