



FORESIGHT
ENVIRONMENTAL

Garden Centre/Hardware and Building Supplies Premises, Strathfield South

127 Cosgrove Road, Strathfield South

Construction & Demolition Waste Management Plan

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This report is based on information provided by Flower Power Pty Ltd coupled with Foresight Environmental's knowledge of waste generated within the retail and commercial sectors. 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 Flower Power Pty Ltd.

This report is not a substitute for legal advice on the relevant environmental related legislation, which applies to businesses, contractors or other bodies. Accordingly, Foresight Environmental will not be liable for any loss or damage that may arise out of this project, other than loss or damage caused as a direct result of Foresight Environmental negligence.

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1. Introduction

This construction and demolition waste management plan (WMP) has been prepared by Foresight Environmental on behalf of Flower Power Pty Ltd as part of the Development Application for the proposed development located at 127 Cosgrove Rd, Strathfield South NSW. The plan details the way in which the proposed development will manage the waste and recycling generated from demolition and construction works in accordance with Part H of the Strathfield Consolidated Development Control Plan 2005 – Waste Minimisation and Management Plan. This plan confirms that the waste facilities provided in the proposed design will adequately cater for the projected waste generation rates during demolition and construction phases and enable the implementation of best practice waste management.

The proposed development comprises alterations and upgrades to the existing building on the site, construction extension areas, outdoor spaces, carparking and associated works.

2. Overview of Development

The proposed development is for alterations and additions to the existing tarpaulin factory building and surrounds, including the provision of at grade parking and the adaptive reuse of the building for the purposes of a garden centre and hardware and building supplies premises, which includes a café and the retail sale of:

- Plants
- Landscaping and gardening supplies and equipment
- Outdoor furniture and furnishings
- Barbeques
- Shading and awnings
- Pools, spas and associated supplies
- Pets and pet supplies
- Fresh produce
- Household fixtures
- Timber
- Tools
- Plumbing supplies, and
- Items used in the construction and maintenance of buildings and outdoor areas.

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
- To ensure that the appointed waste contractor manages and disposes of all materials at appropriately licensed offsite processing/disposal facilities

The waste quantity estimates and materiality are based on the preliminary cost estimate prepared by Rider Levitt Bucknall Pty Ltd on behalf of Flower Power.

3.1 Demolition

The testing and classification of any excavated material is not covered in this report. An Earthworks Contamination Management Statement prepared by Sparks and Partners Consulting Engineers, and should be referred to for excavated materials.

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 Flower Power, it is estimated that approximately **36,802m³** 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 ³
Fill	11,891
Contaminated fill	2,000
Gravel/rubble	1,650
Metal	120
Timber	79
General residual (fittings and fixtures)	50

Glazing	20
Total	15,810

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 during the construction works.

Table 2 - Composition of stage 1 construction waste by volume

Material	M ³
Vegetation	288
Sealant	194
Concrete	129
General residual	100
Metal	85
Bitumen	51
Timber	47
Tiling	6
Plasterboard	3
Brick	2
Glazing	1
Total	907

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 - demolition

Table 3 – Waste management systems (demolition)

Material	Estimated volume (m ³)	Onsite (re-use or recycle)	Offsite (recycling contractor)	Disposal (contractor and landfill site)
Fill (clean)	11,891 m ³	Suitable soil to be stockpiled and reused where appropriate for onsite and on adjacent site for refilling works		
Contaminated fill	2000m ³	Separated and contained onsite		
Gravel/rubble	1,650m ³		Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.	
Metal	120m ³		Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling	
Residual general waste (fittings/fixtures)	50m ³		Collected by contractor and disposed at appropriate C&D sorting facility for separation of mixed recyclables where possible	Residual non-recyclable portion remaining after sorting disposed at landfill
Timber	79m ³	Stockpiled and chipped/mulched onsite where appropriate for reuse in landscaping	Separated onsite then returned to supplier for re-use if appropriate or transported timber recycling facility for chipping/mulching	
Glazing	20m ³		Stockpiled and collected as required by specialty glass recycler or taken to appropriate C&D facility for separation and recycling	

5.2 Onsite and Offsite Systems - construction

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 ² or m ³ where indicated)	Onsite (re-use or recycle)	Offsite (recycling contractor)	Disposal (contractor and landfill site)
Vegetation	288m ³	Mulched and resused onsite where possible (landscaping)	Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes	
Concrete sealant/waterproof	194L		Clean tins recycled by metal recycler where possible	Residue/wash-off hardened and disposed appropriately at landfill
Concrete	129m ³		Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.	
Residual general waste	100m ³		Collected by contractor and disposed at appropriate C&D sorting facility for separation of mixed recyclables where possible	Residual non-recyclable portion remaining after sorting disposed at landfill
Metal	85m ³		Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling	
Bitumen	51m ³		Separated where possible and taken to C&D recycling facility for processing and reuse	
Residual recyclables (cardboard)	50m ³		Collected by contractor and disposed at appropriate recycling facility	
Timber	47m ³		Separated onsite then returned to supplier for re-use if	

			appropriate or transported timber recycling yard for chipping/mulching	
Tiles	8m ³		Stockpiled and collected as required by tiling contractor/supplier for reuse or taken to C&D facility for processing	
Plasterboard	3m ³		Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate C&D recycling facility for reprocessing into gypsum	
Bricks	2m ³		Separated onsite then transported to brick recycling facility for crushing	
Glazing	1m ³		Stockpiled and collected as required by specialty glass recycler or taken to appropriate C&D facility for separation and recycling	

Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities¹. 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.

5.3 Waste Storage and Collection

A designated waste storage area will be allocated 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.

The waste area shall provide for the following material streams as a minimum:

- Concrete
- Fill
- Metalwork

¹ 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

- Timber
- Glazing
- Paper and cardboard
- General waste

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 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.

Figure shows an indicative location for the storage of the required bins and stockpiles during demolition and construction. The location of the waste storage area will likely move onsite as required during construction at the discretion of the head contractor.

Figure 1: Indicative location for waste storage during demolition/construction



5.4 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.

5.5 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.

6. Appendix – consultant experience

Foresight Environmental (Fe.) is an industry leading waste management consultancy providing expert waste management advice to business and government organisations.

Fe. specialise in the development of tailored portfolio-wide best practice waste management strategies for retail and commercial property groups. We work with property portfolios at a national, site and tenant level to ensure multi-lateral collaboration to improve recyclable recovery, reduce landfill generation and maximise overall cost savings. Areas of focus include data integrity and reporting, tender management, dock waste management planning and tenant education programs.

Fe. also collaborate with industry groups, including Better Building Partnership, NABERS & City Switch, in an effort to build stakeholder capacity and drive change within the industry. Fe. brings extensive experience and practical solutions for real-world applications to every project and is excited to be part of projects that drive change within the industry. The team at Fe. collectively have over 30 years experience and below is a selection of our work including waste management plans and physical waste audits in line with OEH NSW Guidelines:

- Sydney Opera House – physical contamination audit, due diligence and data review. Detailed strategy and behavioral recommendations were made.
- AMP Capital (national commercial portfolio) – physical contamination audits conducted at all sites across the national portfolio to determine baseline contamination rates and densities
- Westpac (Kogarah Branch) – detailed physical audit of commercial branch offices to achieve baseline data for future recommendations and future analysis/comparison
- Westpac (275 Kent Street) - detailed physical audit of commercial floors to achieve baseline data and separate commercial waste from retail waste. Recommendations for future improvements were made and a contractor data integrity analysis was conducted.

State Property Authority - Conducted a detailed waste audit of the SPA premises in Sydney reporting results, recommendations for future waste management and data to meet WRAPP requirements.

- Department of Human Services - Conducted detailed waste audits of seven DHS premises through Australia. Review of waste generation and waste management practices.
- Transport NSW – Annual audit of offices in Sydney, a detailed site assessment, review of waste generated and waste management practices, reporting of results, continual monitoring and site assessments.
- Sydney International Convention, Exhibition and Entertainment Precinct (Lend Lease) – preparation of waste management strategy and plans for DA encompassing all functions and components within the precinct including exhibition space, convention centre, entertainment centre, hotel, residential, commercial, retail and public domain (CoS and iNSW)

- Barangaroo (Lend Lease) – preparation of waste management plan for residential components and basement infrastructure for DA and Green Star rating (CoS and GBCA)
- Barangaroo (Lend Lease) Public Space waste management strategy (CoS).
- O’Connell Street podium retail and basement redevelopment - preparation of C&D and ongoing operation waste management plans for DA and Greenstar (CoS and GBCA)
- Green Square Community Facilities redevelopment of South Sydney Hospital Site, Zetland – preparation of waste strategy and design input, preparation of waste management plan for DA (CoS)
- Defense Housing Australia Shout Ridge Residential Development, Lindfield – development of waste management plan for DA and Green Star rating (KMC and GBCA)
- Westfield Sydney – preparation of waste management plan for DA and ongoing operational strategy/support (CoS)
- West Keira, Wollongong mixed use development (GPT) – preparation of waste management plan for DA and Green Star rating (Wollongong City Council and GBCA)
- Wet n Wild water park development (Buchan Group) - preparation of waste management plan for DA
- Craigieburn Town Centre retail development (Lend Lease) – preparation of waste management plan for DA and Green Star rating (Hume City and GBCA)