Appendix D - Waste Management Plan

Woolworths Customer Fulfilment Centre, Marrickville

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DWP - Revision Control

DWP issue number	Date Issued	Amended Page(s)	Action / Amendment Description	Approved By

DWP – Review

Date Reviewed	Reviewed By	Required Revision (Record Section Numbers where changes occurred)

DWP Controlled Document Distribution

Issued to	Name and Organisation	Date	Issued By

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1 - Introduction

1.0 Introduction

The following Demolition Waste Management Plan (DWMP) has been prepared for the proposed demolition and associated works at 74 Edinburgh Road, Marrickville.

This DWMP has been prepared based on current best practice waste management methodology and technologies commonly available in Australia.

1.1 Project Description

The Site is located within the Inner West Local Government Area (LGA). The Site is situated approximately 5.5km south-west of Sydney CBD and approximately 2.9km north-east of Sydney International Airport within the suburb of Marrickville.

The Site has an area of approximately 28,090sqm and has frontages to both Edinburgh Road (north) and Sydney Steel Road (east). The boundaries of the Site are illustrated below in Figure 1.

The key elements within and surrounding the Site include:

- The Site is located within the industrial area of Marrickville and currently accommodates several large freestanding industrial buildings and associated car parking and loading areas.
- Vehicular access to the Site is via an existing entry and exit driveway at the Edinburgh Road frontage. Access is also available from Sydney Steel Road.
- The Site contains minimal vegetation which is fragmented by buildings and areas of hardstand surfaces. Vegetation is limited to scattered trees and shrubs within the Site and planted within the nature strip.
- The Site is located within 1km of Sydenham Railway Station, which is currently being upgraded as part of the Sydney Metro Chatswood to Bankstown metro line; and
- The Site is well positioned in terms of access to arterial and main roads, public transport modes of bus and rail, Sydney Airport, and the retail centre of Marrickville.

The Works will comprise of, authority approvals, demolition, and site clearance to achieve Practical Completion under the Contract, including rectification of defects during the Defect Liability Period (DLP).

The proposed development includes the demolition and the removal of:

- Industrial Buildings.
- Raised Footpaths and Slabs.
- Signage.
- Retaining walls and garden beds.
- Eastern Staff Site Facilities Block; and
- Brick office Building.

Works consist of demolishing single, double storey buildings and Industrial Buildings down to existing ground slab level. Plinths and slab above ground will be removed to eliminate any trip hazards. All pits and voids generated through the demolition process will be filled with clean fill won from site to make the building footprint safe.

Buildings to be demolished:

- Northeast Warehouse and all associated furniture, plant and equipment.
- Gatehouse.
- Plant Building.
- Southern Warehouse.
- Office Building.
- All pipes, tanks, cables, cable trays support, instruments, valves, switchboards and all other items that are located in the areas designated to be demolished.
- Nominated Trees.

The site is to be demolished in stages. The initial stage is to remove all the nominated trees on the site. This is to allow unimpeded movement of earthmoving equipment on the site and to allow for the delivery

and construction of a heavy-duty scaffold and hoarding structure to Edinburgh Road building frontage (Northeastern Warehouse) and along Sydney Steel Road building frontage (Southern Warehouse).

The phased demolition will be gradual following the tree removal process with hazmat material removal taking place consistent with the Prensa Destructive Hazardous Materials Assessment report ref number 99323S dated November 2021. Once a clearance certificate is issued, demolition of buildings will take place in the following order:

1. Office Building - soft strip out of internal walls, ceilings and loose furniture.
2. Single Level Covered Gantries
3. Plant Building
4. Northeastern Warehouse
5. Substation
6. Gate House
7. Southern Warehouse
8. Eastern Staff Rooms

Works associated with the demolition of site improvements will include:

- Stormwater management works including soil erosion and sediment control measures
- Capping and termination of all service connections to the property
- Flood mitigation measures including swales and detention basin/flood storage area
- Tree removal and protection works associated with the demolition of existing site improvements
- Carrying out of subsequent contamination investigations and associated remediation works if required following demolition of existing site improvements.

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2 – Waste Management Plan

2.0 Waste Management Plan

A detailed demolition waste strategy will be incorporated into the Central Civil (NSW)'s CEMP, as a separate document prior to the commencement of demolition works. This document will address:

- The type and estimated volume of waste to be generated during demolition and respective recycling, reuse and disposal methods
- Location and space allocated for the storage of demolition waste or materials, and
- Waste collection point(s) for the site

Maximised diversion of demolition waste from landfill should be targeted for these demolition and associated works, to be achieved through appropriate material separation practices. The specific re-use, removal or treatment of demolition waste will be undertaken by third parties as appropriate.

NOTE: The following is provided as a high-level summary of demolition requirements for ease of reference. Information as shown is not intended to form the basis of any demolition works and will be superseded by any preferred demolition strategy of Central Civil (NSW).

2.1 Demolition Phases

Demolition and associated activities across the site will generate a range of waste streams. Materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling processes.

Waste storage throughout the works will generally involve the stockpiling of demolished and reusable material and the placement of skip bins throughout the site. Skip bins will be positioned in readily accessible points for collection, should facilitate the safe and efficient storage of materials, and should be retained within property boundaries to avoid illegal dumping. Waste storage area shall be designated by Central Civil (NSW) and shall be of sufficient size to store the various waste streams expected during operations.

Waste storage areas will be kept clear to maintain vehicular access and shall also be kept tidy to encourage separation of waste materials and for work & health safety (WHS) reasons. Waste management principles, management measures and facilities in use on the site shall be included as part of the site induction for all personnel working on the site.

Demolition plans outlining proposed works is provided in Appendix A.

2.2 Waste Systems

A detailed waste strategy will be addressed by Central Civil (NSW) prior to commencement. As per standard industry practice, a minimum 80% diversion rate from landfill for waste generated from demolition activities should be targeted across the subject site.

For the purpose of this assessment, demolition waste has been considered through the following activities:

- Building Demolition: Demolition of existing structures onsite.
- Fencing / Wall Removal: Demolition of any continuous timber, metal or concrete fences / walls throughout the site.
- Tree Removal: Complete removal of any trees as nominated by the tree removal plan.

Of these demolition works, corresponding waste streams have been considered under the following general categories:

- Demolition Streams: Waste debris incurred from the destruction of structures, built form and tree removal onsite (i.e. concrete, timber, metals, etc.)
- Domestic Streams: Regular municipal waste streams (garbage, commingles, etc.) generated through activities of trades staff on site.

- **Hazardous**: Any additional waste that has substantial or potential threats to public health or the environment, in particular asbestos.

An overview of the expected waste stream profile per demolition activity is provided in Table 1 below.

Table 1 Waste Systems

Waste Stream	Site Element	Building Demolition	Paving Upheaval	Wall Removal	Tree Removal
Demolition Streams	Concrete/Blocks/Ceramic	x	x	x	
	Wood/Timber	x		x	x
	Glass	x			
	Plastics	x			
	Bitumen	x	x		
	Metals	x		x	
	Mixed Demolition Waste	x			
	Tree Cuttings	x			x
Domestic Streams	General Waste (Garbage)	x	x	x	x
	Commingled recycling	x	x	x	x
	Cardboard	x	x	x	x
Hazardous	Asbestos	x			

2.2.1 Demolition Streams

All wastes generated throughout demolition activities are to be effectively stored, handled, treated, reused, recycled and/or disposed of lawfully and in a manner that protects environmental values. As a guiding principle, waste will be managed in accordance with waste hierarchy, as to maximise waste diversion from landfill.

In the context of the subject works, the approach of the waste hierarchy can generally be considered as:

- **Re-use (Onsite)**: Direct and immediate re-use of materials onsite as part of subsequent construction activities.
- **Re-use (Offsite)**: Re-use of materials offsite under separate construction activities unrelated to the subject development.
- **Recycle**: Volumes sent to an off-site facility to be recycled into new products and/or on-sold for further use.
- **Dispose**: Volumes sent to landfill / cleanfill for end disposal. Materials not harnessed for any further use.

Note that the below is not intended as a comprehensive list of materials and volumes. Volumes account for major waste streams and demolition works only (building demolition, paving upheaval, fencing / wall removal, tree removal), and do not account for any additional minor works.

A high level overview of reuse, recycle and disposal opportunities for each demolition waste stream is provided in Table 2 below.

Table 2 Demolition Waste Streams

Site Element	Typical Receptacle	Notes
Concrete/Blocks/Ceramic	Skips & Trucks	**Re-Use (Onsite)**: Crush on-site for application as fill / gravel.

		Recycle: Transported to a C&D waste recycler for crushing / recycling into recovered products.
Wood/Timber	Skips & Trucks	**Re-Use (Onsite):** Timber chipped for application onsite as fill / landscaping. **Re-Use (Onsite / Offsite)**: Tree logs used onsite as furniture installations. **Recycle**: Transported to a C&D waste recycler for mulching / chipping / recycling into recovered products
Glass	Skips & Trucks	**Recycle**: Transported to a glass waste recycler for crushing / recycling into recovered products. **Dispose**: Volumes sent to landfill.
Plastic	Skips & Trucks	**Recycle**: Transported to a plastics waste recycler for recycling into recovered products.
Bitumen	Skips & Trucks	**Re-Use (Onsite):** Re-apply onsite as part of any asphalt paving required under subsequent construction activities. **Recycle**: Transported to a C&D waste recycler for crushing / recycling into recovered products.
Metals	Skips & Trucks	**Recycle**: Transported to a metals waste recycler for crushing / recycling into recovered products.
Mixed Demolition Waste	Skips & Trucks	**Recycle**: Transported to a C&D waste recycler for mulching / recycling into recovered products.
Tree Cuttings	Skips & Trucks	**Re-Use (Onsite)**: Mulch onsite & apply existing green areas **Recycle**: Transported to a C&D waste recycler for mulching / recycling into recovered products.

2.2.2 Domestic Streams

Domestic waste streams will be generated through activities of trades staff on site. These streams will be collected under a separate system to the demolition streams, either through a Council service (provided an existing service is already provided) or suitably licensed private contractors.

A high level overview of reuse, recycle and disposal opportunities for each domestic waste stream is provided in Table 3 below.

Table 3 Domestic Waste Streams

Site Element	Typical Receptacle	Notes
General Waste (Garbage)	Bins	**Dispose:** Volumes sent to landfill.
Commingled Recycling	Bins	**Recycle:** Volumes sent to a material recovery facility for sorting into individual components (hard plastics, paper/cardboard, glass, metals) and subsequent processing.
Cardboard	Bins	**Recycle:** Volumes transported to a cardboard plant for recycling into recovered products.

2.2.3 Hazardous Streams

As per the Prensa Hazardous Materials Survey Report (Hazmat Report), asbestos is present onsite.

As outlined in the Hazmat Report, an Asbestos Removal Control Plan has been developed to comply with relevant work health and safety regulations (Clause 429). The ARCP, prepared by a specialist contractor, outlines forecast volumes, removal procedures and storage arrangements.

The management of any asbestos volumes is not addressed in this report. This report should not be relied upon for any detail regarding asbestos management.

2.3 Waste Collection

Waste collection will be undertaken by private collection contractors on an as-required basis. Vehicle sizes and on-site access will be in accordance with the Construction Traffic Management Plan.

Central Civil (NSW) will be responsible for positioning waste stockpiles / bins / skips throughout the site such that collections can be readily undertaken. Collection vehicles will generally be undertaken by Heavy Rigid Vehicles (12.5m length, 4.5m operating height) or smaller.

2.4 Waste Generation

Each site element has been assessed as per Table 4 below. As a preliminary generation assessment, the waste generation rates associated with Heavyweight Construction and Lightweight Construction are as per of the document Handbook of Recycled Concrete and Demolition Waste (Pacheco-Torgal et al., 2013).

Waste generation rates are outlined in Table 5 over the page. A demolition waste generation assessment prepared in accordance with these rates outlined in Table 6.

Note that the net areas / net lengths / quantities as quoted below have been measured directly from the demolition plans of Appendix A. Values are intended as high level estimates only.

Table 4 Waste Generation: Site Overview

Item	Site Element	Classification
Building Demolition	Steel Framed building Multi storey brick building metal roof Single storey demountable	Heavyweight construction; non-residential Heavyweight construction; non-residential Lightweight construction; non-residential
Fencing/Wall removal	Metal Fence Concrete Retaining Wall	Metal Fence Concrete Retaining Wall
Tree Removal	Tree Removal	Tree Removal

Table 5 Waste Generation Rates

Classification	Rate Type	Concrete/ Blocks/ Ceramics	Wood / Timber	Glass	Plastics	Bitumen	Metals	Mixed Demolition waste	Tree Cuttings	Total
Heavyweight construction-non-residential	m3/m2	0.938	0.002	0.001	0.003	0.043	0.032	0.080	0.000	1.100
Lightweight construction-non-residential	m3/m2	0.640	0.001	0.001	0.002	0.029	0.022	0.55	0.00	0.750
Concrete Paving	m3/m2	0.150								0.150
Bitumen Paving	m3/m2					0.200				0.200
Metal Fence	m3/m	0.150					0.150			0.300
Concrete Retaining Wall	m3/m	0.200								0.200
Tree Removal	m3/tree		0.700						2.500	3.200

Table 6 Waste Generation Assessment

Site Element	Net Area*/Net Length / Quantity	Concrete/ Blocks/ Ceramics	Wood / Timber	Glass	Plastics	Bitumen	Metals	Mixed Demolition waste	Tree Cuttings	Total
Steel Framed building	12,240	1836	25	-	36	-	2448	98	-	16,683
Multi storey brick building metal roof	1,120	1050	23	2	4	-	36	90	-	2,325
Single storey demountable	163	104	0.5	0.5	0.4	-	3.5	89	-	360.9
Subtotal buildings (m3)		2990	48.5	2.5	40.4	-	2487.5	277	-	19,369
Concrete Slabs**	0	-	-	-	-	-	-	-	-	-
Bitumen Paving**	0	-	-	-	-	-	-	-	-	-
Subtotal Paving/Hardstand (m3)		-	-	-	-	-	-	-	-	-
Metal Fence	10	1.5	-	-	-	-	1.5	-	-	3
Concrete Retaining Wall	0	-	-	-	-	-	-	-	-	-
Subtotal Fencing (m3)		1.5	-	-	-	-	1.5	-	-	3
Tree Removal***	100 trees	-	70	-	-	-	-	-	238	308
Subtotal Trees (m3)		-	70	-	-	-	-	-	238	308
		2990	118.5	5	40.4	0	2489	277	238	6158
TOTAL (tonnes) ****		**4485**	**36**	**1.7**	**2.6**	**0**	**2240**	**416**	**36**	**7217.3**

* Net area represents building footprint multiplied by number of storeys.

** Assumed that 80% of paved surfaces are bitumen, 20% are concrete.

*** Assumed that all trees are 10m tall with 30cm average diameter – highly conservative estimate.

**** Tonnages calculated through the density conversion factors quoted throughout Green Star: Design & As Built Submission Guidelines v1.3 (2021).

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2 – Supplier Contact Information

3.0 Supplier Contact Information

A listing of contractors and equipment suppliers is provided below for reference.

Table 7 Supplier Contact List

Service Type	Contractor/Supplier Name	Phone	Website
Private Waste Collectors (Demolition Waste)	Bingo Bins Transwaste Skips Brown Brothers Skip Bins	1300 424 646 (02) 9746 8333 (02) 9999 6466	www.bingoindustries.com.au www.transwaste.com.au www.brownbrosbins.com.au
Off-Site Recycling Facilities	Bingo Recycling Centre Auburn SUEZ Resource Recovery Centre, Auburn Benedict Recycling, Girraween Greenwood Landfill & Waste Recovery Facility, St Ives	1300 424 646 13 13 35 (02) 9062 4288 (02) 9450 2288	www.bingoindustries.com.au www.suez.com.au www.benedict.com.au

Appendix A – Demolition Plan