



# Honeman Close, Huntingwood - SSD-79500208

## Waste Management Plan

### Goodman Property Services (Aust) Pty Ltd

The Hayesbery  
1-11 Hayes St  
Rosebery NSW 2018

Prepared by:

**SLR Consulting Australia**

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## Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
7.0	27 March 2025	Andrew Quinn	Chris Hambling	Andrew Quinn

## Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Goodman Property Services (Aust) Pty Ltd. Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

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## 1.0 Introduction

Goodman Property Services (Aust) Pty Ltd (Goodman) is seeking to progress an SSDA submission for a two-warehouse development at Honeman Close, Huntingwood. The site is in Blacktown City Council area, approximately 5 km south of the Blacktown CBD and 11 km west of the Parramatta CBD.

This report has been prepared in response to the requirements in the Secretary's Environmental Assessment Requirements (SEARs) dated 31 January 2025 and issued for the SSDA (SSD-79500208) specifically the SEARs requirement issued below in Table 1 below.

**Table 1 SEARs**

Description of requirement	Section reference (this report)
17 Waste Management Identify, quantify and classify the likely waste streams to be generated during construction and operation.	For site the clearance and construction phases please refer to: <ul style="list-style-type: none"> <li>Section 8.2 Waste Streams and Classifications</li> <li>Section 8.3 Site clearance Waste Types and Quantities</li> <li>Section 8.4 Construction Waste Types and Quantities</li> </ul> For the operational phase please refer to: <ul style="list-style-type: none"> <li>Section 9.2 Waste Streams and Classifications</li> <li>Section 9.3 Estimated Quantities of Operational Waste</li> </ul>
Provide the measures to be implemented to manage, reuse, recycle and safely dispose of waste in accordance with any council waste management requirements.	For site the clearance and construction phases please refer to: <ul style="list-style-type: none"> <li>Section 8.6 Re-use, Recycling and Disposal</li> <li>Section 8.7 Waste Separation, Storage and Servicing</li> </ul> For the operational phase please refer to: <ul style="list-style-type: none"> <li>Section 9.4 Waste Storage Area Size</li> <li>Section 9.4.3 Space allowed for waste storage</li> <li>Section 9.6 Waste System Description</li> </ul>
Identify appropriately sited waste storage areas, collection access paths/roads, and appropriate servicing arrangements for the site.	Please refer to: <ul style="list-style-type: none"> <li>Figure 4 - Waste storage locations</li> <li>Section 9.6 Waste System Description</li> </ul>
If buildings are proposed to be demolished or altered, provide a hazardous materials survey.	No buildings are proposed for demolition.

The WMP has been prepared to calculate waste quantities to ensure enough space is allowed for waste storage and that waste is properly handled during the site clearance, construction and operational phases of the project.

This development is in Blacktown City Council (Council) area and the following documents have been used as a guide:

- Blacktown Development Control Plan 2015<sup>1</sup> (BDCP)
- Blacktown City Council's Guideline for waste management in new developments*<sup>2</sup> (Council Guideline) and

<sup>1</sup> <https://www.blacktown.nsw.gov.au/Plan-build/Stage-2-plans-and-guidelines/Blacktown-planning-controls/Blacktown-Development-Control-Plan-2015>

<sup>2</sup> <https://www.blacktown.nsw.gov.au/files/assets/public/0guideline-for-waste-management-in-new-developments.pdf>



- NSW EPA's *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities*<sup>3</sup> (EPA C&I Guidelines) which are endorsed by Council in the Council Guideline.

## 2.0 Objectives

The principal objective of this WMP is to identify potential wastes likely to be generated at the Development during the site clearance, construction and operational phases, including a description of how waste would be handled, processed and disposed of, or re-used or recycled, in accordance Council's requirements.

The specific objectives of this WMP are:

- To encourage the minimisation of waste production and maximisation of resource recovery.
- To assist in ensuring that any environmental impacts during the operational life of the Development comply with Council's development consent conditions and other relevant regulatory authorities.

## 3.0 Waste Plan Author

This waste management plan was prepared by Andrew Quinn, an environmental consultant with more than 30 years' experience in waste management. He has worked for the NSW EPA, waste management contractors and consultants. He has a Bachelor of Applied Science, University of Technology Sydney (2000), Master of Environmental Studies, Macquarie University (2009) and has lectured in waste management at the University of NSW.

His experience includes waste management plans for new developments, transfer station and resource recovery facility concept design and master planning, operational systems assessments, expert witness and due diligence for waste projects, waste chapters for EISs, contract and tender preparation, tender assessment and evaluation, resource recovery technology research, resource recovery management strategy and policy development, data analysis, managing and conducting waste audits of residential, commercial, industrial, landfill and MRF streams and in remote locations.

Andrew prepared the *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities*, the NSW EPA's official guide to waste management in commercial and industrial developments. He has also prepared hundreds of waste management plans for new developments. This most relevant to this project include the following warehouses and logistics developments:

- For Goodman
  - Oakdale Developments, Kemps Creek, NSW
  - M7 Business Park
  - 115 Dunning Ave, Rosebery, NSW
  - 20 Holbeche Road, Arndell Park, NSW
  - Southern Distribution Centre, NSW

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<sup>3</sup> <https://www.epa.nsw.gov.au/publications/managewaste/120960-comm-ind>



- 202 Euston Rd, Alexandria, NSW
- Coal Pier Industrial Estate, Banksmeadow, NSW
- 58 Euston Rd, Alexandria, NSW
- 1-3 Burrows Rd, Alexandria, NSW
- 45 Burrows Rd, Alexandria, NSW.
- For ESR Australia
  - 50 Airds Rd, Minto, NSW
  - 49 Stephen Road, Banksmeadow, NSW
  - 27 Frank St, Wetherill Park, NSW
  - Westlink Kemps Creek Logistics, NSW
  - Lidcombe Business Park, NSW
  - Logistics Park, Horsley Park, NSW
  - Leppington Industrial Estate, Leppington, NSW
  - Bringelly Road Business Hub, Leppington, NSW.

## 4.0 The Site

The subject site is a 20 ha greenfield development site located at Honeman Close, Huntingwood. The site comprises the following:

- Lot 1 in DP 1098102 – to facilitate the proposed two warehouse and distribution centre buildings with ancillary offices zoned IN1 General Industrial
- Great Western Highway, Lot 16 and Lot 19 in DP1024111, and Lot 19 in DP819317 – to facilitate intersection upgrade works and formal access, zoned both SP2 Classified Road and IN1 General Industrial

The broader site is located to the north of the M4 Motorway, west of Reservoir Road, and south of Great Western Highway.

The approximate location of the site is shown in Figure 1 below.







**Figure 1 - Site location**

The site is affected by the following constraints that have all been considered as part of the masterplan and assessment reports:

- State and local heritage classification of Honeman Close
- Threatened ecological communities and serious and irreversible impact entities
- First and second order watercourses
- Transport for NSW crash lab design consideration for access
- Sydney Water potable water service
- Aboriginal heritage artefacts
- Contamination compromising friable and non-friable asbestos and septic tank contamination.

This application seeks approval for the construction, operation, use and fit-out approval of two warehouses spanning 52,935 m<sup>2</sup> GLA, and associated infrastructure and lead-in works.

Approval is sought for operation as a warehouse and distribution centre 24 hours per day, seven days per week.

The development is proposed to be constructed in one stage and will generally consist of the following scope:

- Infrastructure and lead-in works:
  - Estate wide infrastructure and preparation works including vegetation clearing, bulk earthworks and remediation, watercourse realignment, retaining walls, internal services reticulation
  - Lead in services including stormwater, sewer, potable water, electrical and communications
  - New left in, left out intersection at the corner of the Great Western Highway and a new proposed estate road including services relocation and eventual dedication.



- Warehouse with ancillary office development:
  - Construction, operation, fit-out and use of two warehouses, totalling 52,935 m<sup>2</sup> GLA of warehouse, including ancillary office spaces, access and hardstand, guardhouses, loading bays, landscaping, car parking, electric vehicle charging, solar panels and signage
  - Warehouse proposed height limit of 15 m
  - 24 hours per day seven days per week operation
  - Warehouse and distribution use with generic racking layout.

## 5.0 Review of WMP

This WMP will be reviewed and updated:

- To remain consistent with waste and landfill regulations and guidelines
- If changes are made to site waste and recycling management, or
- To take advantage of new technologies, innovations and methodologies for waste or recycling management.

Copies of the original WMP and its future versions will be retained by the building manager. Changes made to the WMP, as well as the reasons for the changes made, will be documented by the building manager as part of the review process.

## 6.0 Better Practice for Waste Management and Recycling

### 6.1 Waste Management Hierarchy

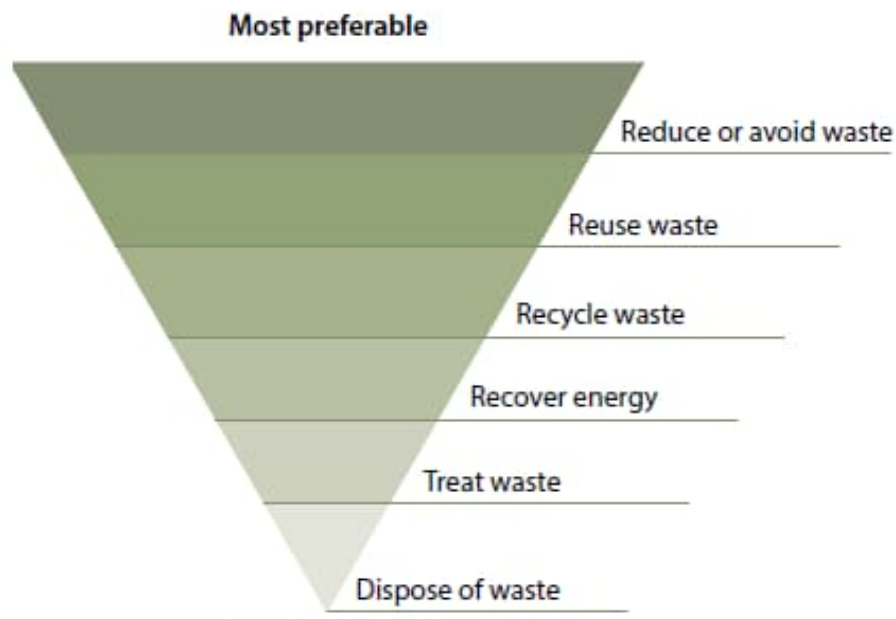
This WMP has been prepared in line with the waste management hierarchy shown in Figure 2. The hierarchy summarises the objectives of the *Waste Avoidance and Resource Recovery Act 2001*.

The waste management hierarchy comprises the following principles, from most to least preferable:

- Waste **avoidance**, prevention or reduction of waste generation. Achievable through better design and purchasing choices.
- Waste **reuse**, reuse without substantially changing the form of the waste.
- Waste **recycling**, treatment of waste that is no longer usable in its current form to produce new products.
- Energy **recovery**, processing of residual waste materials to recover energy.
- Waste **treatment**, reduce potential environmental, health and safety risks.



- Waste **disposal**, in a manner that causes the least harm to the natural environment.



**Figure 2 - Waste management hierarchy**

## 6.2 Benefits of Adopting Better Practice

Adopting better practice principles in waste minimisation offers significant benefits for organisations, stakeholders and the wider community. Benefits from better practice waste minimisation include:

Improved reputation of an organisation due to social and environmental responsibility.

- Lowered consumption of non-renewable resources.
- Reduced environmental impact, for example, pollution from materials manufacturing and waste treatment.
- Reduced expenses from lower waste disposal.
- Providing opportunities for additional revenue streams through beneficial reuse.

## 7.0 Waste Legislation and Guidance

### 7.1 Blacktown DCP 2015

#### ***Part D Development in the Business Zones***

This part of the Blacktown DCP says that:

- *Developments must comply with the Blacktown DCP in regard to minimising waste generated and disposed of during the construction and demolition phase of the*



*development, maximising reuse and recycling of building and construction materials, and industrial and commercial waste.<sup>4</sup>*

- *Details of the proposed ongoing use waste management system must be provided to Council.<sup>5</sup>*

## **Part G Site Waste Management and Minimisation**

### **2. Waste management plan**

*A waste management plan that addresses the relevant provisions of this Part and Blacktown City guideline for waste management in new developments. The waste management plan needs to outline how you will avoid creating waste, and increase reuse and recycling of materials onsite during:*

- *demolition*
- *construction*
- *occupancy.*

*The waste management plan will need to provide detail on the:*

- *expected volumes and types of waste being generated during demolition and construction*
- *storage and treatment of waste and recyclables onsite*
- *disposal methods for waste and recyclables during construction*
- *waste and recycling collection system for ongoing use of the site.*

*It must be supported by scaled waste management drawings to demonstrate compliance with the relevant provisions of this Part.*

### **2.1 Generation rates**

#### **2.1.3 Industrial**

*Refer to the Blacktown City guideline for waste management in new developments (Section 7.2 below) for waste and recycling generation rates.*

## **5. Other development types**

### **5.3 Development controls – specific requirements**

#### **5.3.1 Daily bin storage**

*(c) Non-residential development*

*The information submitted with the development application must be supported by scaled site and floor plans that clearly identify the:*

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<sup>4</sup> Page 25

<sup>5</sup> Page 25



- *selection of an appropriate and efficient waste storage system for the site ensuring all required bins can be appropriately accommodated in the waste room(s)*
- *waste room(s), where they are located at ground level, are to be situated behind the building line and integrated into the overall design of the building footprint. The waste room(s) must be adequately screened to ensure it is not visible from the street or public areas. Ground level waste room(s) must be designed to not detract from the overall character of the development*
- *interim waste room(s) and waste room(s) are designed clear of pillars, support beams, services, air conditioning units, sprinklers and any other obstruction.*
- *interim waste room(s) and waste room(s) a designed of regular shape (i.e. square or rectangular) that allow for the safe and practical use of these spaces and to assist in the cleaning of these facilities. These spaces must be a minimum 3 metres deep to allow for suitable bin rotation space*
- *waste room(s) open straight onto the loading bay(s), allowing bins to be moved straight to the collection vehicle with minimal manual handling*
- *onsite collection point is located on the same level as the interim waste room(s) and waste room(s)*
- *maximum walk distance for staff with bagged rubbish from their commercial, retail or industrial premise to the relevant waste area does not exceed 30 metres*
- *bin travel path from the interim waste room(s) to the waste room(s)*
- *bin travel path from the waste room(s) to the collection point(s)*
- *access to the waste room(s) for anyone other than the building manager and waste contractors is not to be via the loading bay*
- *suitable storage provision (waste and recycling) for non-residential tenancies or businesses*
- *suitable provision of bins and signage for drive thru and take away outlets*

### **5.3.2 Bulky waste**

#### **(e) Non-residential development**

*The information submitted with the development application must be supported by scaled site and floor plans that clearly identify:*

- *bulky waste storage areas are designed clear of pillars, support beams, services, air conditioning units, sprinklers and any other obstruction*
- *bulky waste storage areas that are of regular shape (i.e. square or rectangular) that allow for the safe and practical use of these spaces and to assist in the cleaning of these facilities. Rectangular shaped bulky waste storage areas must be a minimum 3 metres deep to allow for suitable use of these spaces.*
- *the bulky waste storage area(s) being located immediately adjacent to the waste room(s) and opening straight onto the loading bay(s) for collection*
- *bulky waste storage area(s) are caged across the front and signposted to identify potential hazards.*





- *bulky waste storage provision for the retail, commercial component(s) and industrial development in accordance with the Blacktown City guideline for waste management in new developments (See Section 7.2)*

### **5.3.7 Collection points**

#### *(i) Industrial*

*The information submitted with the development application must be supported by scaled site and floor plans that clearly identify the:*

- *loading bays and truck travel paths for onsite collection are designed clear of pillars, support beams, services, air conditioning units, sprinklers and any other obstruction that would hinder safe passage for waste collection vehicles*
- *onsite collection point(s) are located on the same level as the interim waste room(s) and waste room(s)*
- *onsite loading bay(s) are located immediately adjacent to the waste room(s).*

*The documentation submitted with the development application in relation to waste must:*

- *state that all waste, recyclables and bulky waste collections will be by a private contractor*
- *include a loading dock management plan to detail all proposed uses of the space and the management of competing services. Council will not provide service windows for waste collection.*

### **5.3.8 Onsite truck access**

*The information submitted with the development application must be supported by scaled site and floor plans that clearly identify:*

- *swept paths for the trucks entire travel path including forward entry and exit and around the collection point.*
- *the truck can access the collection point without the need to reverse outside of the site boundaries or intrude on landscaped areas. Onsite 3-point turns are acceptable*
- *the minimum vertical clearance along the vehicles entire travel path and any turning area in line with Blacktown City guideline for waste management in new developments (See Section 7.2)*
- *that the truck travel path is rated suitable for a 24 tonne truck.*

## **7.2 Blacktown City Council's guideline for waste management in new developments**

### **2. Waste management plan**

#### **2.1 Preparing a waste management plan**

*A waste management plan must be prepared by an experienced waste consultant with a minimum 5 years industry experience if the development:*



- *includes commercial, retail and/or industrial uses with floor areas of 2,500 square metres or more.*

## **2.2 What must it include?**

### **2.2.2 Occupancy**

*The waste management plan must include the:*

- *type of development*
- *number of units, dwellings or tenancies*
- *waste and recycling generation rates for the proposed use(s)*
- *number of bins required for the development*
- *bin capacities*
- *collection frequencies*
- *proposed method of bin movement around the site*
- *location of waste collection point(s)*
- *location of the loading bay for the site (if required)*
- *proposed physical treatment of the loading bay to maintain truck turning areas (eg, removable, lockable bollards)*
- *provision of bulky waste storage area(s), their size and location*
- *method of communication about the waste system to residents and/or tenancies*
- *building manager's responsibility to co-ordinate the waste arrangement for the site if communal bins are required. This includes but is not limited to ensuring clear access onsite for collection vehicles, granting access to loading bays, maintaining waste related signage, moving bins for collection, managing illegal dumping, and cleaning bins and waste facilities onsite*

## **2.3 Generation rates**

### **2.3.3 Industrial**

*The number of bins for your development will be dictated by the generation rates listed below. If the proposed use is not listed, your waste management plan must provide a case study to determine a suitable waste generation rate.*

*c) warehouses*

- *30 litres per 100 square metres per day for waste*
- *30 litres per 100 square metres per day for recycling*

## **2.4 Collection frequencies**

*Waste rooms in retail, commercial and/or industrial developments proposing collections 5 days a week for waste and recyclables, must be designed to accommodate 3 days' worth of waste and recyclables to allow for public holidays and long weekends.*



## **2.5 Compaction rates**

### **2.5.2 Retail, commercial and industrial**

- 1:5 is the maximum compaction rate permitted for waste only

## **2.6 Waste equipment**

*Any waste management equipment proposed for the site, including chutes, bin tugs, compactors, bin lifters etc., must be selected in consultation with a reputable waste equipment provider.*

## **6.5 Storage - non-residential development**

*Non-residential development must provide a bulky and problem waste storage area(s) of at least:*

- 2 square metres for developments under 100 square metres
- 4 square metres for developments between 100 to 2000 square metres
- an additional 4 square metres is required for each retail accommodation or entertainment development over 2000 square metres and for every 20,000 square metres of office space.

## **11. Truck access**

*Entry and egress points, internal roads and access points must be designed to ensure that the specifications and dimensions of the proposed collection vehicles can be accommodated.*

### **11.1 Minimum design requirements**

*You must cater for the following at the design stage:*

- that the truck travel path is rated suitable for a 24 tonne truck.
- turning circles and clearances to kerbs, existing buildings and other obstructions designed to accommodate the required collection vehicle that may service the site.

*Architectural plans must demonstrate:*

- that collection vehicles can easily access the collection point without the need to reverse outside of the site boundaries. Onsite 3-point turns are acceptable.
- a minimum vertical clearance of 4 metres for the vehicles entire travel path and in any turning areas for Council's collection vehicle
- that ramp grades and changes of rate of grade on the ramp for any collection occurring in a basement, do not exceed 15.4%, in line with Australian Standard AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities (Tables 3.2 and 3.3)
- an additional 3 metre clearance in the loading bay either to the rear or the front of the truck for bin servicing and/or compactor/skip bin operation.

### **11.2 Demonstrating onsite truck access**

*You must provide the following to demonstrate suitable truck access onsite:*





- *swept paths for the trucks entire travel path from entry to exit and in all manoeuvring areas.*
- *vertical cross section plans demonstrating a 4 metre vertical clearance for the trucks entire travel path*

### **11.5 Front lift collection vehicles**

*The information submitted with the development application must be supported by scaled site and floor plans that clearly identify:*

- *swept paths suitable for an 11.8 metre long, heavy rigid, front lift waste collection vehicle servicing 1 to 4.5 cubic metres bulk bins in line with the EPA Better Practice Guide for Resource Recovery in Residential Developments 2019. This is required for the vehicles entire travel path including forward entry and exit and around the collection point.*
- *a minimum vertical clearance of 6.5 metres in the collection area in line with the EPA Better Practice Guide for Resource Recovery in Residential Developments 2019.*

### **11.6 Hook lift collection vehicles**

*The information submitted with the development application must be supported by scaled site and floor plans that clearly identify:*

- *swept paths suitable for a 10 metre long, heavy rigid, hook lift waste collection vehicle servicing 1 to 36 cubic metre skip bins in line with the EPA Better Practice Guide for Resource Recovery in Residential Developments 2019. This is required for the trucks entire travel path including forward entry and exit and around the collection point.*
- *a minimum vertical clearance of 7.1 metres in the collection area in line with the EPA Better Practice Guide for Resource Recovery in Residential Developments 2019.*

## **7.3 Other Legislation and Guidance**

The waste legislation and guidance outlined in Table 2 below should be referred to during the operation of the Development.

**Table 2 Legislation and guidance relevant to this development**

<b>Legislation and Guidance</b>	<b>Objectives</b>
Building Code of Australia (BCA) and relevant Australian Standards	The BCA has the aim of achieving nationally consistent, minimum necessary standards of relevant health and safety, amenity and sustainability objectives efficiently.
Council of Australian Governments National Construction Code 2019	The National Construction Code 2019 sets the minimum requirements for the design, construction and performance of buildings throughout Australia.
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	These better practice guidelines present information on waste minimisation and resource recovery as well as information on commonly used waste management provisions. The guidelines also provide benchmarks for assessing waste production rates in Australia.



Legislation and Guidance	Objectives
NSW Waste and Sustainable Materials Strategy 2041: Stage 1 – 2021-2027	Replacing the <i>NSW Waste Avoidance and Resource Recovery Strategy (2014-21)</i> , the NSW Waste and Sustainable Materials Strategy 2041 focuses on the transition of NSW to a circular economy. The strategy focuses on minimising what is thrown away, and to use and reuse resources more efficiently, making them as productive as possible. The strategy identifies the need to identify infrastructure needs, the mandating of separation of some organic waste streams, and incentivising biogas generation from waste materials.
NSW EPA Resource Recovery Orders and Resource Recovery Exemptions	The NSW EPA has issued a number of resource recovery orders and resource recovery exemptions under the POEO (Waste) Regulation 2014 for a range of wastes that may be recovered for beneficial re-use. These wastes typically include those from demolition and construction works, as well as ongoing wastes such as food waste. <ul style="list-style-type: none"> <li>Resource recovery orders present conditions which generators and processors of waste must meet to supply the waste material for beneficial re-use.</li> <li>Resource recovery exemptions contain the conditions which consumers must meet to use waste for beneficial re-use.</li> </ul>
NSW EPA's Waste Classification Guidelines 2014	The NSW EPA Waste Classification Guidelines assists waste generators to effectively manage, treat and dispose of waste to ensure the environmental and human health risks associated with waste are managed appropriately and in accordance with the <i>POEO Act 1997</i> and its associated regulations.
<i>Protection of the Environment Operations Act (POEO) 1997 and Amendment Act 2011</i>	The POEO Act 1997 and POEO Amendment Act 2011 are administered by the NSW EPA to enable the NSW Government to establish instruments for setting environmental standards, goals, protocols and guidelines. They outline the regulatory requirements for lawful disposal of wastes generated during the demolition, construction and operational phases of a development, as well as the system for licencing waste transport and disposal.
The Work Health and Safety Regulation 2017	The Work Health and Safety Regulation 2017 provides detailed actions and guidance associated with the topics discussed in The Work Health and Safety Act 2011. The primary aim of the regulation is to protect the health and safety of workers and ensure that risks are minimised in work environments. Workplaces are to ensure that they are compliant with the requirements specified in the regulations. The regulations discuss items such as actions that are prohibited or obligated in work environments, the requirements for obtaining licences and registrations, and the roles and responsibilities of staff in workplaces.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	The <i>Waste Avoidance and Resource Recovery Act 2001</i> aims to promote waste avoidance and resource recovery and repeals the <i>Waste Minimisation and Management Act 1995</i> . Specific objectives of the <i>Waste Avoidance and Resource Recovery Act 2001</i> include: <ul style="list-style-type: none"> <li>encouraging efficient use of resources</li> <li>minimising the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste</li> <li>ensuring industry and the community share responsibility in reducing/dealing with waste, and</li> <li>efficiently funding of waste and resource management planning, programs and service delivery.</li> </ul> <p>As of 2016, the addition to the Act of Part 5 defines the legislative framework for the 'Return and Earn Container Deposit Scheme' whereby selected beverage containers can be returned to State Government authorities for a monetary refund.</p>



## 8.0 Site clearance and Construction Waste and Recycling Management

### 8.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state-specific targets. The NSW Waste and Sustainable Materials Strategy 2041 (DPIE, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by the NSW EPA (2022-2023) indicates that construction and demolition waste recovery rates in 2022-2023 were 73%.<sup>6</sup>

It is anticipated that the waste minimisation measures in the following sections will assist the Development to meet these targets. Waste reporting and audits can be used to determine the actual percentage of wastes that are being, or have been, recycled during the site preparation, site clearance and construction stages of the Development.

Waste generated during site clearance and construction will be reused on site wherever possible, especially in the case of soil and fill. Waste and recyclables taken off site will be recycled, or disposed of, at facilities lawfully able to accept them.

### 8.2 Waste Streams and Classifications

The site clearance and construction activities are anticipated to generate the following broad waste streams:

- Site clearance waste as outlined in Section 8.3
- Construction waste as outlined in Section 8.4
- Packaging waste, and
- Work compound waste from on-site employees.

A summary of likely waste types generated from site clearance and construction activities, along with their waste classifications and proposed management methods are provided in Table 3 below. For further information on how to determine a waste's classification refer to the NSW EPA (2014) *Waste Classification Guidelines*.<sup>7</sup> Further information on managing site preparation, site clearance and construction wastes is also available on the NSW EPA website.<sup>8</sup>

**Table 3 Potential site clearance and construction waste types, classifications and management methods**

Waste Types	NSW EPA Waste Classification	Proposed Management Method
<b>Site clearance and Construction</b>		
Sediment fencing, geotextile materials	General solid waste (non-putrescible)	Reuse at other sites where possible or disposal to landfill
Concrete	General solid waste (non-putrescible)	Off-site recycling for filling, levelling or road base

<sup>6</sup> <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data>

<sup>7</sup> Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

<sup>8</sup> Available online from <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
Bricks and pavers	General solid waste (non-putrescible)	Cleaned for reuse as footings, broken bricks for internal walls, crushed for landscaping or driveway use, off-site recycling
Gyprock or plasterboard	General solid waste (non-putrescible)	Off-site recycling or returned to supplier
Sand or soil	General solid waste (non-putrescible)	Off-site recycling
Metals such as fittings, appliances and bulk electrical cabling, including copper and aluminium	General solid waste (non-putrescible)	Off-site recycling at metal recycling compounds and remainder to landfill
Conduits and pipes	General solid waste (non-putrescible)	Off-site recycling
Timber – treated	General solid waste (non-putrescible)	Reused for formwork, bridging, blocking, propping or second-hand supplier
Timber - untreated		Off-site recycling, chip for landscaping, sell for firewood, reused for floorboards, fencing, furniture, mulched secondhand supplier and remainder to landscape supplies.
Doors, windows, fittings	General solid waste (non-putrescible)	Off-site recycling at secondhand supplier
Insulation material	General solid waste (non-putrescible)	Off-site disposal
Glass	General solid waste (non-putrescible)	Off-site recycling, glazing or aggregate for concrete production
Asbestos	Special waste	Off-site disposal to a licensed landfill facility.
Fluorescent light fittings and bulbs	General solid waste (non-putrescible)	Off-site recycling or disposal, contact <i>FluoroCycle</i> for more information <sup>9</sup>
Paint	Liquid waste	Off-site recycling, Paintback collection <sup>10</sup> or disposal
Synthetic rubber or carpet underlay	General solid waste (non-putrescible)	Off-site recycling, reprocessed for other uses
Ceramics including tiles	General solid waste (non-putrescible)	Off-site recycling
Carpet	General solid waste (non-putrescible)	Off-site recycling, disposal or reuse
<b>Packaging</b>		
Packaging materials, including wood, plastic, including stretch wrap or LDPE, cardboard and metals	General solid waste (non-putrescible)	Off-site recycling
Wooden or plastic crates and pallets	General solid waste (non-putrescible)	Reused for similar projects, returned to suppliers, or off-site recycling.

<sup>9</sup> Available online from <http://www.fluorocycle.org.au/> or <http://www.environment.gov.au/settlements/waste/lamp-mercury.html>

<sup>10</sup> Available online from <https://www.paintback.com.au/>



Waste Types	NSW EPA Waste Classification	Proposed Management Method
		Contact <i>Business Recycling</i> for more information <sup>11</sup>
<b>Work Compound and Associated Offices</b>		
Food Waste	General solid (putrescible) waste	Dispose to landfill with general garbage
Recyclable beverage containers, such as glass and plastic bottles, aluminium cans and steel cans	General solid waste (non-putrescible)	Recycling at off-site licensed facility or at NSW container deposit scheme 'Return and Earn' facility <sup>12</sup>
Clean paper and cardboard	General solid waste (non-putrescible)	Paper and cardboard recycling at off-site licensed facility
General domestic waste generated by workers such as soiled paper and cardboard, food and polystyrene	General solid waste (non-putrescible) mixed with putrescible waste	Disposal at landfill

### 8.3 Site clearance Waste Types and Quantities

Images from Six Maps and Google Earth show that the site features no buildings or structures and is partially cleared adjacent to Honeman Close. The remaining area has tree coverage. The trees are mature and up to 10 m tall. The soil layer is assumed to be 300 mm.

Estimates of the quantities of site clearance waste are shown in Table 4 below. This material will be used on site as much as possible for fill and landscaping. If any contaminated soil is found it will be classified according to the NSW EPA's Waste Classification Guidelines and disposed of at a site lawfully able to accept it.

**Table 4 Estimated types and quantities of site clearance waste**

Developable Area (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )	
	Soil	Vegetation
100,548	30,164	10,055

### 8.4 Construction Waste Types and Quantities

The BDCP provides no construction waste generation rates. We have adopted the 'Factory' waste generation rates from *The Hills' Development Control Plan* for estimating the type and quantities of waste generated from the warehouse and office elements of the proposed buildings.

We have also referred to *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* published by the Australian Asphalt Pavement Association in calculating car park and road waste quantities and have assumed 10% waste. The construction waste generation rates used are shown in Table 5 below.

<sup>11</sup> Available online from <https://businessrecycling.com.au/>

<sup>12</sup> Available online from <http://returnandearn.org.au/>



**Table 5 Construction waste generation rates**

Rate Type	Area (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )								
		Timber	Concrete	Bricks	Plasterboard	Sand or Soil	Metal	Other	Asphalt	Granular Base
Factory	1,000	0.25	2.1	1.65	0.45	4.8	0.6	0.5		
Hardstand	1,000		2.1			4.8	0.6	0.5		
Car parks	1,000		2.25						3.0	12.5
Road	1,000		2.25						4.0	30.0

Estimates of the quantities of construction waste generated from the Development are shown in Table 6 below. The areas shown are based on the areas for the Development shown in the drawing *DA050 Rev H*.

**Table 6 Estimated types and quantities of construction waste**

Use	GLA (m <sup>2</sup> )	Waste types and quantities (m <sup>3</sup> )								
		Timber	Concrete	Bricks	Plasterboard	Sand or Soil	Metal	Other	Asphalt	Granular Base
Warehouses	48,210	12	0	101	0	80	22	231	29	24
Offices	2,206	11	0	41	0	19	19	19	6	11
Others	2,520	0	0	5	0	0	0	12	2	1
Car Parking	8,812	0	35	20	264	0	0	0	0	0
Hardstand	28,135	0	0	59	0	0	0	135	17	14
Road	2,035	0	8.1	4.6	61	0	0	0	0	0
<b>Total</b>	<b>91,918</b>	<b>23</b>	<b>43</b>	<b>231</b>	<b>325</b>	<b>98</b>	<b>41</b>	<b>398</b>	<b>53</b>	<b>50</b>

## 8.5 Waste Avoidance Strategies

The Building Contractor, Building Designer and/or those in equivalent roles should follow better practice waste management and the principles of Ecologically Sustainable Development.

Recommendations for the Building Designer include:

- Using prefabricated components
- Using low formaldehyde wood products, post-consumer reused timber and/or Forest Stewardship Council certified timber
- Using fittings and furnishings that have been recycled, are made from or incorporate recycled materials and have been certified as sustainable or environmentally friendly by a recognised third-party certification scheme
- Preferentially using building materials, fittings and furnishings, including structural framing, roofing and façade cladding, that have longer life and better re-use and recycling potential
- Reducing the use of polyvinyl chloride products



- Preferentially using paints, floor coverings and adhesives with low VOC (volatile organic compound) content
- Avoiding unsustainable timber imports including western red cedar, oregon, meranti, luan or merbau
- Selecting materials based on low embodied energy properties that suit the Development, such as recycled materials including recycled steel and glass-wool insulation, or concrete with slag and fly ash content
- Centralising wet areas together to minimise piping, and
- Designing for deconstruction rather than demolition.

Recommendations for the Building Contractor include:

- Applying practical building designs and construction techniques
- Minimising excavation works
- Investigating leased equipment and machinery rather than purchase and disposal
- Sorting and segregating site preparation and construction wastes to ensure efficient recycling of wastes
- Preferentially selecting building materials, fittings and furnishings, including structural framing, roofing and façade cladding, that have longer life and better re-use and recycling potential
- Store wastes on-site appropriately to prevent cross-contamination and/or mixing of different waste types
- Reducing packaging waste by:
  - Returning packaging to suppliers where practicable to reduce waste further along the supply chain
  - Purchasing in bulk
  - Requesting cardboard or metal drums rather than plastics
  - Requesting metal straps rather than shrink wrap, and
  - Using returnable packaging such as pallets and reels.
- Arranging deliveries 'as needed' to mitigate degradation, weathering or moisture damage, and
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

## 8.6 Re-use, Recycling and Disposal

Effective management of construction materials and waste, including options for reuse and recycling where applicable and practicable, will be conducted. Only waste that cannot be cost effectively reused or recycled is to be sent to landfill or appropriate disposal facilities.

Refer to Table 3 for an outline of the proposed reuse, recycling and disposal methods for potential waste streams generated by the development.

The following specific procedures will be implemented:





- concrete, tiles and bricks will be reused or recycled off-site. Recycling will include crushing and separating different materials for use as products such as road base and drainage medium among others
- steel will be recycled off-site, and all other metals will be recycled where economically viable
- framing timber will be reused on-site or recycled off-site
- windows, doors and joinery will be recycled off-site, where possible
- all used crates will be stored for reuse unless damaged
- all glass that can be economically recycled will be recycled
- all solid waste timber, brick, concrete, rock that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner
- all asbestos, hazardous and/or intractable wastes will be disposed of in accordance with SafeWork NSW and NSW EPA requirements
- provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site, and
- all waste and recycling will be disposed of through a council approved system.

## **8.7 Waste Separation, Storage and Servicing**

### **8.7.1 Waste Separation and Storage**

Waste materials produced from site clearance and construction activities will be separated at the source and stored separately on-site.

It is anticipated that there will be enough space on-site for separate storage in, for example, separate skip bins or appropriately managed stockpiles, of the following waste types:

- Bricks, concrete and scrap metal
- Metal and steel, in a condition suitable for recycling at metal recycling facilities
- Timber
- Glass
- Hardstand rubble
- Uncontaminated excavation spoil, if present
- Contaminated excavation spoil, if present
- Hazardous waste, if present
- Paper and cardboard
- General co-mingled recycling waste, and
- Non-recyclable general waste.

If there is insufficient space on-site for full separation of waste types, the Contractor's Site Manager, or equivalent role, will consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled before removal from the site.





### 8.7.2 Waste Storage Areas

Waste storage areas will be accessible and allow sufficient space for storage and servicing requirements. The storage areas will also be flexible in order to cater for change of use throughout the Development. Where space is restricted, dedicated stockpile areas will be delineated on the site, with regular transfers to dedicated skip bins for sorting.

All waste placed in skips or bins for disposal or recycling will be adequately contained to ensure that waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas will be kept clean and in a good state of repair.

Applicable weather protection measures will be considered for storage spaces.

In accordance with good practice waste management, areas designated for waste storage will:

- Allow unimpeded access by site personnel and waste disposal contractors
- Take into account environmental factors which could potentially cause an impact to the waste storage, such as slope, drainage and the location of watercourses and native vegetation
- Allow sufficient space for the storage of garden waste and other waste materials on-site
- Employ adequate environmental management controls to prevent off-site migration of waste materials and contamination from the waste. For example, consideration of slope, drainage, proximity relative to waterways, stormwater outlets and vegetation
- Consider visual amenity, safety and accessibility in their selection, and
- Not present hazards to human health or the environment.

### 8.7.3 Waste Servicing and Record Keeping

The Contractor's Site Manager or equivalent role will:

- Arrange for suitable waste collection contractors to remove any construction waste from site
- Ensure waste bins are not filled beyond recommended filling levels
- Ensure that all bins and loads of waste materials leaving site are covered
- Maintain waste disposal documentation detailing, at a minimum:
  - Descriptions and estimated amounts of all waste materials removed from site
  - Details of the waste and recycling collection contractors and facilities receiving the waste and recyclables
  - Records of waste and recycling collection vehicle movements, for example, date and time of loads removed, licence plate of collection vehicles, tip dockets from receiving facility, and
  - Waste classification documentation for materials disposed to off-site recycling or landfill facilities.
- Ensure lawful waste disposal records are readily accessible for inspection by regulatory authorities such as Council, SafeWork NSW or NSW EPA, and
- Remove waste during approved hours.



If skips and bins are reaching capacity, removal and replacement will be organised as soon as possible. All site-generated building waste collected in the skips and bins will leave the site and taken to a site lawfully able to accept them.

### 8.7.4 Waste Servicing and Transport

The frequency of the waste removal will, in most cases, be dictated by the quantities of material being deposited into each of the dedicated skip bins. All skips leaving the site will be covered with a suitable tarpaulin to ensure that the spillage of waste while in transit is eliminated.

## 8.8 Signage

Standard signage will be posted in all waste storage and collection areas. All waste containers will be labelled correctly and clearly to identify stored materials.

Signs approved by the NSW EPA for labelling of waste materials are available online<sup>13</sup> and will be used where applicable. A selection of the EPA's signs is shown in Figure 3 below.



Figure 3 - Examples of NSW EPA labels for waste and skip bins

## 8.9 Site Inductions

All staff, including sub-contractors and labourers, employed during the site preparation and construction phases of the Development will undergo induction training regarding waste management.

Induction training will cover, as a minimum, an outline of the WMP including:

- Legal obligations and targets
- Emergency response procedures on-site
- Waste priorities and opportunities for reduction, reuse and recycling
- Waste storage locations and separation of waste
- Procedures for suspected contaminated and hazardous wastes
- Waste related signage

<sup>13</sup> NSW EPA approved waste materials signage <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/business-government-recycling/standard-recycling-signs>



- The implications of poor waste management practices, and
- Responsibilities and reporting, including identification of personnel responsible for waste management and individual responsibilities.

## 8.10 Monitoring and Reporting

During the site clearance and construction phases, the following monitoring practices will be undertaken to improve site clearance and construction waste management and to obtain accurate waste generation figures:

- Conduct waste audits of current projects where feasible.
- Note waste generated and disposal methods.
- Look at past waste disposal receipts.
- Record this information to track waste avoidance, reuse and recycling performance and to help in waste estimations for future waste management plans.

Records will be maintained for all waste quantities that are recycled, reused or removed by a contractor. All site clearance and construction waste dockets will be kept which show which facility received the material for recycling or disposal.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the Contractor's Site Manager or equivalent role each week or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits should be carried out by the building contractor or equivalent role to gauge the effectiveness and efficiency of waste segregation procedures and recycling and reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training will be undertaken and signage will be re-examined.

## 8.11 Roles and Responsibilities

All personnel have a responsibility for their own environmental performance and compliance with all legislation. It will be the responsibility of the Contractor's Site Manager, or equivalent role, to implement the WMP, and the responsibility of employees and subcontractors to ensure that they comply with the WMP at all times.

Suggested roles and responsibilities for waste management at the site are provided in Table 7 below. Where possible, the Contractor's Construction Environment Manager, or equivalent role, will be appointed for the site preparation and construction work. An equivalent construction environmental manager role is defined to be a person dedicated to overseeing the environmental compliance and performance of a development. Where a construction environmental manager is not appointed, responsibilities in Table 7 for the construction environmental manager will become those of the Contractor's Site Manager.

**Table 7 Suggested roles and responsibilities for site preparation, site clearance and construction waste management**

Role	Responsibilities
Contractor's Site Manager	<ul style="list-style-type: none"><li>• Ensuring plant and equipment are well maintained</li><li>• Ordering only the required amount of materials</li><li>• Keeping materials segregated to maximise reuse and recycling</li><li>• Ensuring that waste sorting and storage areas are maintained in a tidy and functional state and do not present hazards to human health or the environment</li></ul>



Role	Responsibilities
	<ul style="list-style-type: none"> <li>• Ensure hazardous or contaminated materials are appropriately managed and disposed</li> <li>• Ensure site records and documentation is kept and is complete</li> <li>• Ensure this WMP are implemented, and</li> <li>• Liaise with Council and regulatory authorities as required.</li> </ul>
Contractor's Construction Environmental Manager or equivalent	<ul style="list-style-type: none"> <li>• Ensuring staff and contractors are aware of site requirements for waste management</li> <li>• Establishing separate skips and stockpiles and recycling bins for effective waste segregation and recycling purposes</li> <li>• Developing or identifying, and using, local commercial opportunities for re-use of materials where re-use on-site is impractical</li> <li>• Facilitate correct waste collection</li> <li>• Engage suitable waste collection and disposal contractors</li> <li>• Approval of off-site waste disposal locations and checking licensing requirements</li> <li>• Arranging for the assessment of potentially hazardous or contaminated materials</li> <li>• Arranging for appropriate contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements</li> <li>• Monitor and maintain site environmental controls and</li> <li>• Monitoring, inspection and reporting requirements.</li> </ul>

## 9.0 Operational Waste and Recycling Management

### 9.1 Targets for Resource Recovery

Targets for new development are expected to contribute to state-specific targets. The NSW *Waste and Sustainable Materials Strategy 2041* (DPIE, 2021) sets a target of 80% average recovery rate from all waste streams by 2030. Analysis by the NSW EPA (2022-2023) indicates that the commercial and industrial waste recovery rate in 2022-2023 was 51%.<sup>14</sup>

It is anticipated that the waste minimisation measures in the following sections will assist the Development to achieve this recycling rate. Waste reporting and audits can be used to determine the actual percentage of wastes that are being or have been recycled during operation.

### 9.2 Waste Streams and Classifications

The operation of the Development is likely to generate the following broad waste streams:

- Domestic type waste generated by employees, including food waste
- Bulk packaging waste, including polystyrene, plastic wrapping and cardboard boxes
- Office waste
- Garden organic waste from landscaped areas
- Bulky waste items such as furniture and e-waste.

Potential waste types, their associated waste classifications, and management methods are provided in Table 8 below.

<sup>14</sup> <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data>



**Table 8 Potential waste types, classifications and management methods for operational waste**

Waste Types	NSW EPA Waste Classification	Proposed Management Method
<b>General Operations</b>		
Clean office paper	General solid (non-putrescible) waste	Paper recycling at off-site licensed facility
Cardboard including bulky cardboard boxes	General solid (non-putrescible) waste	Cardboard recycling at off-site licensed facility
Recyclable beverage containers, glass and plastic bottles, aluminium cans, steel cans	General solid (non-putrescible) waste	NSW container deposit scheme 'Return and Earn', container recycling at off-site licensed facility
Food waste	General solid (putrescible) waste	Compost on or off-site or dispose to landfill with general garbage
Lead-acid or nickel-cadmium batteries	Hazardous waste	Off-site recycling, Contact the Australian Battery Recycling Initiative <sup>15</sup> for more information
Other batteries	General solid waste (non-putrescible)	
Mobile Phones	General solid waste (non-putrescible)	Off-site recycling; can be taken to the Mobile Muster program. Contact Mobile Muster for more information
Bulky polystyrene	General solid (non-putrescible) waste	Off-site recycling or disposal at landfill
Furniture	General solid (non-putrescible) waste	Off-site reuse or disposal to landfill
E-waste	General solid waste (non-putrescible)	Off-site recycling
Clinical waste	Special waste	Stored, handled, collected and disposed of according to AS 3816 and the <i>Protection of the Environment Operations Act 1997</i>
Printer toners and ink cartridges	General solid waste (non-putrescible)	Off-site recycling, free disposal box or bags and pickup service exists for printer toners and ink cartridges
General garbage, including non-recyclable plastics	General solid (putrescible and non-putrescible) waste	Disposal at landfill
<b>Maintenance</b>		
Spent smoke detectors <sup>16</sup> - some commercial varieties	Hazardous waste	Disposal to landfill, or off-site disposal at licensed facility
Spent smoke detectors - others	General solid (non-putrescible) waste,	
Glass, other than containers	General solid (non-putrescible) waste	Off-site recycling

<sup>15</sup> <http://www.batteryrecycling.org.au/home>

<sup>16</sup> The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) require that when more than 10 smoke alarms (particularly americium-241 sources) are collected for bulk disposal they must be treated as radioactive waste and the requirements of the National Health and Medical Research Council's Code of practice for the near-surface disposal of radioactive waste in Australia (1992) must be met.



Waste Types	NSW EPA Waste Classification	Proposed Management Method
Light bulbs and fluorescent tubes	General solid (non-putrescible) waste	Off-site recycling or disposal, contact FluoroCycle <sup>17</sup> or Lamp Recyclers <sup>18</sup> for more information
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups that were previously used to store Dangerous Goods (Class 1, 3, 4, 5 or 8) and residues have not been removed by washing or vacuuming.	Hazardous waste	Transport to comply with the transport of Dangerous Goods Code applies in preparation for off-site recycling or disposal at licensed facility
Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups that have been cleaned by washing or vacuuming.	General solid waste (non-putrescible)	
Garden organics - lawn mowing, tree branches, hedge cuttings, leaves	General solid (non-putrescible) waste	Reuse on-site or contractor removal for recycling at licenced facility

For further information on how to determine a waste's classification, refer to the NSW EPA (2014) *Waste Classification Guidelines*<sup>19</sup>. Recycling drop-off locations and contacts can be found on <https://businessrecycling.com.au/> for each waste type.

### 9.3 Estimated Quantities of Operational Waste

Council's Guideline provides waste generation rates for warehouses. For offices, SLR has used waste generation rates published in the EPA's C&I Guidelines, which are recommended by Council. The operational waste generation rates used are shown in Table 9 below.

**Table 9 Operational waste generation rates**

Type of Premises	General Waste Generation (L/100 m <sup>2</sup> /day)	Recycling Generation (L/100 m <sup>2</sup> /day)
Warehouses	30	30
Offices	8	6

Using the waste generation rates in Table 9 above, the approximate weekly waste quantities for the Development have been calculated. The operational waste quantities were also calculated based on the following assumptions:

- The floor areas as show on the architectural drawings *DA050 Rev H*, and
- A week comprising seven days of operation.

The estimated quantities of operational waste generated by the Development are shown in Table 10.

<sup>17</sup> <https://www.fluorocycle.org.au/>

<sup>18</sup> <https://www.lamprecyclers.com.au/>

<sup>19</sup> Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>





**Table 10 Estimated quantities of operational general waste and recycling**

Development area	GLA (m <sup>2</sup> )	(L/day)		(L/week)	
		General Waste	Recycling	General Waste	Recycling
Warehouse 1	35,029	10,509	10,509	73,561	73,561
Office, Dock Office 1 and Gatehouse	1,630	130	98	913	685
<b>Total</b>	<b>36,659</b>	<b>10,639</b>	<b>10,607</b>	<b>74,474</b>	<b>74,246</b>
Warehouse 2	13,181	3,954	3,954	27,680	27,680
Office and Dock Office 2	576	46	35	323	242
<b>Total</b>	<b>13,757</b>	<b>4,000</b>	<b>3,989</b>	<b>28,003</b>	<b>27,922</b>
Others	2,520	202	151	1,411	1,058

## 9.4 Waste Storage Area Size

### 9.4.1 Garbage and Recycling Bins

The waste storage area for the Development must be large enough to adequately store all quantities of operational waste and recycling between collections. Given the nature of the development and its size and scope, a front lift waste collection service is the most likely to be used by a waste contractor.

Tenants will most likely use a combination of compactors and front lift bins. The most common front lift bin capacity is 3 m<sup>3</sup>, and this has been assumed when calculating bin numbers. A common compactor capacity is 38 m<sup>3</sup>, and this has been assumed when calculating compactor numbers.

All waste storage area calculations have considered the common front lift bin and compactor dimensions as shown in Table 11 below. Please note that dimensions may vary slightly with manufacturers and waste service providers.

**Table 11 Dimensions and approximate footprint of bins**

Bin Capacity	Height (mm)	Depth (mm)	Width (mm)	Footprint (m <sup>2</sup> )
3 m <sup>3</sup>	1,540	1,520	2,060	3.31
38 m <sup>3</sup>	2,830	8,665	2,500	21.66

To allow for ready movement of bins into and out of the bin storage area, at least 200% of the total minimum bin storage area has been allowed for. This can also act as a contingency in the event of spikes in waste generation.

The recommended storage areas do not include the storage of bulky waste. For the storage space for bulky waste please refer to Section 9.4.2.

The estimated number of bins required for weekly storage of operational waste and recycling generated by the Development are shown in Table 12 and are based on:

- The estimated quantities of operational waste and recycling shown in Table 10
- Bin dimensions shown in Table 11.



**Table 12 Recommended number of bins and storage area**

Building	Bin Capacity	Collection Frequency per Week		Number Required		Total Number	Recommended Storage Area (m <sup>2</sup> )
		Garbage	Recycling	Garbage	Recycling		
Warehouse and offices 1	38 m <sup>3</sup>	1	1	1	1	2	43.3
Warehouse and offices 2	3 m <sup>3</sup>	4	4	3	3	6	18.8

#### 9.4.2 Bulky Waste

The Blacktown DCP specifies that bulky waste storage areas should be clear of building supports and services, be a regular shape at least 3 m deep, located immediately adjacent to the waste storage area, caged across the front, signposted and comply with Council's Guideline.

Council's Guideline makes no specification for the size of bulky waste areas in developments of this type, that is, industrial developments greater than 2,000 m<sup>2</sup>. Large capacity bins like those proposed can accommodate a range of bulky waste materials, so significant additional space for bulky waste is not necessarily required. At least 4 m<sup>2</sup> will be allocated for bulky waste storage at each warehouse.

#### 9.4.3 Space allowed for waste storage

Therefore, in addition to the recommended waste storage area shown in Table 12, the total minimum waste storage areas proposed for the Development are those shown in Table 13 below.

**Table 13 Total recommended storage area for operations**

Building	Recommended Storage Area (m <sup>2</sup> )		
	Waste and Recycling Bins	Bulky waste	Total Storage Area
Warehouse and offices 1	43.3	4	47.3
Warehouse and offices 2	18.8	4	22.8

This additional space can also act as a contingency in the event of spikes in waste generation and allow for additional bins. Depending on the Development's operations, this may include additional bins for the separate storage of items such as hard and soft plastics, timber, glass and metals and aluminium.

### 9.5 Waste Storage Area Locations

The drawings show waste storage areas for each warehouse. Waste storage are the minimum size indicated in Table 13 and comply with the requirements of the Blacktown DCP and Guidelines, outlined in Sections 7.1 and 7.2.

The are shown in Figure 4 below.





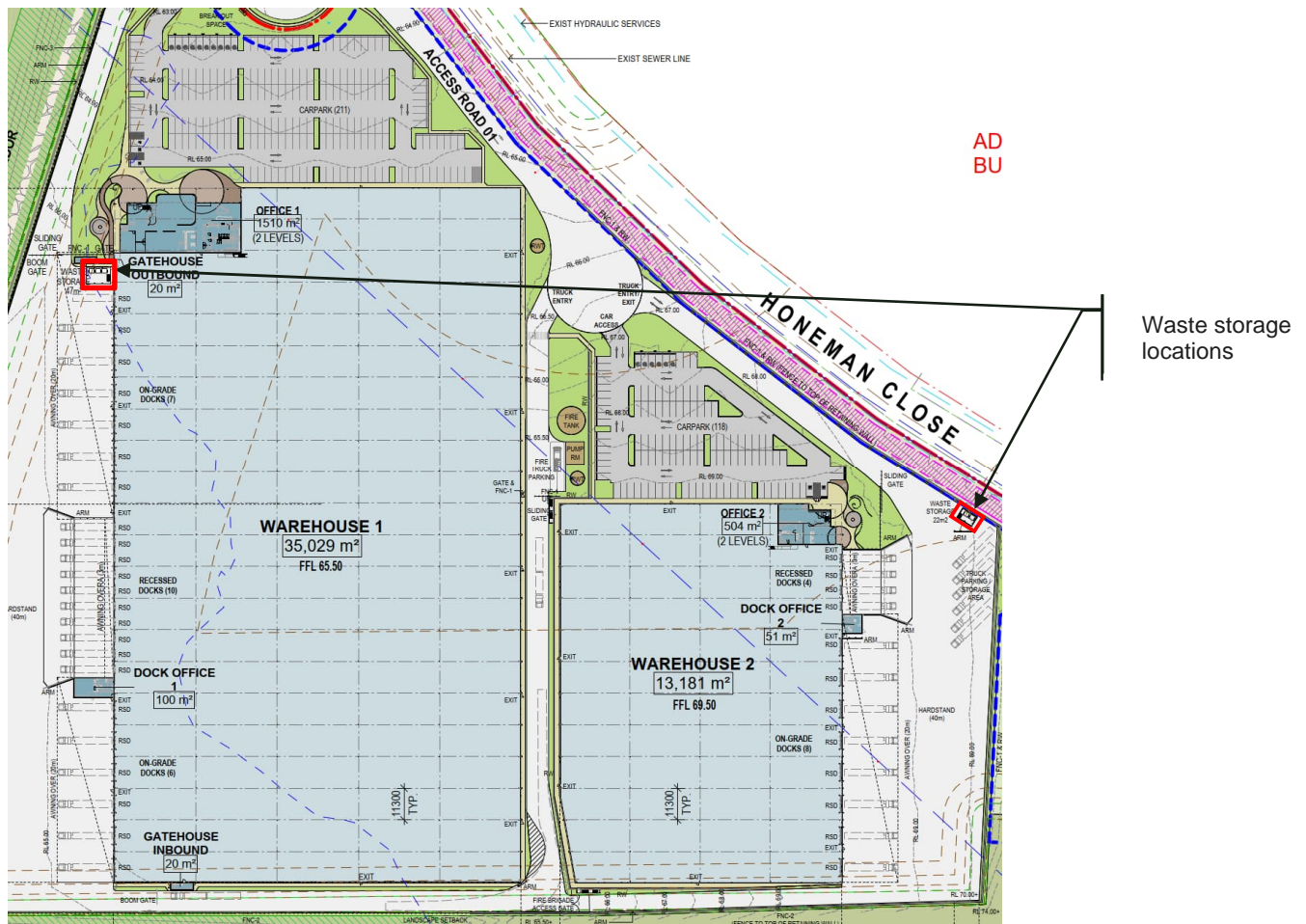


Figure 4 - Waste storage locations

## 9.6 Waste System Description

Warehouse tenants will generate waste and recyclables within their premises and will separate streams and place them in the bins and compactors for each stream at the proposed storage locations.

Waste collection vehicles will enter the site and drive to the waste bins and compactors at each warehouse. Front lift bins will be emptied by collection vehicles driving forward onto the bins, lifting them over the cab and depositing the contents in the body of the vehicle, before returning the bin to the ground and reversing off the bin.

Compactors and other hook bins will be hauled onto the collection vehicle and taken off-site to a facility lawfully able to accept the contents, where they will be emptied and returned to the site. Depending on the collection agreement waste contractors may swap an empty compactor for the full one, in which case they will not return to the site until the next collection.

All collection vehicles will enter and leave the site in a forward direction.

## 9.7 Waste Avoidance, Reuse and Recycling

### 9.7.1 Waste avoidance

Waste avoidance measures include:



- Returning packaging materials like cardboard to the suppliers through the services of the supplier delivery trucks, allowing the reduction of waste further along the supply chain
- Providing ceramic cups, mugs, crockery and cutlery rather than disposable items
- Bulk purchasing and the purchasing of items that use minimal packaging
- Presenting all waste reduction initiatives to staff and tenants as part of their induction program, and
- Leasing equipment and machinery rather than outright purchase and disposal.

### **9.7.2 Re-use**

Possible re-use opportunities include establishing systems with in-house and supply chain stakeholders to transport products in re-useable packaging where possible.

### **9.7.3 Recycling**

Recycling opportunities include:

- Collecting and recycling e-wastes
- Printer toners and ink cartridges, if purchased, are collected in allocated bins for appropriate contractor recycling
- Paper recycling trays provided in communal and staff areas for scrap paper collection and recycling
- Providing separate receptacles for general waste, recycling and paper and cardboard throughout public areas, as well as within staff areas, to encourage source-separation of waste streams
- Work with tenants to investigate opportunities for the use of recycled paper bags or reusable bags in place of plastics bags
- Separating, by a reasonable distance, the storage areas for recyclables from the general waste storage areas to avoid cross contamination, and
- Development of 'buy recycled' purchasing policy.

## **9.8 Communication Strategies**

Education and communication on waste management initiatives and measures will be regularly and clearly conveyed to staff, cleaners and visitors. Benefits of providing this communication include:

- Improved satisfaction with services
- Increased ability and willingness to participate in recycling
- Improved amenity and safety
- Improved knowledge and awareness through standardisation of services
- Increased awareness or achievement of environmental goals and targets
- Reduced contamination of recyclables stream which can incur a collection contractor penalty fee
- Increased recovery of recyclables and organics material, if implemented, and



- Greater contribution to state-wide targets for waste reduction and resource recovery.

To realise these benefits, the following communications strategies are recommended for the Goodman Representative:

- Use consistent signage and colour coding throughout the Development
- Ensure all staff are informed of correct waste separation and management procedures
- Provide directional signage to show locations and routes to waste storage areas
- Repair signs and labels promptly to avoid a breakdown in communication
- Clearly label general and comingled waste bins to ensure no cross contamination and to identify the types of waste that may be disposed of in each bin, and
- Educate all staff and contractors associated with the Development, ensuring they adhere to this WMP.

## 9.9 Signage

Signs which clearly identify waste management procedures and provisions to contractors, staff and visitors will be posted at the Development as appropriate.

The design and use of safety signs will comply with Australian Standard *AS 1319 Safety Signs for the Occupational Environment* and clearly describe the types of materials designated for each bin.

Colour-coded and labelled bin lids are necessary for identifying bins and the Australian Standard *AS 4123.7-2006 (R2017) Mobile waste containers Part 7: Colours, markings, and designation requirements* provides recommendations for the designated colours for waste bins depending on the type of waste the bins are to receive. The colours that will apply to ongoing waste generated by the Development are:

- Blue: Paper and cardboard
- Yellow: Recyclables (other than paper and cardboard)
- Red: General waste.

All bin signage will also follow the NSW EPA's standard signage.<sup>20</sup>

Other key signage considerations include:

- Clear and correct labelling on all waste and recycling bins, indicating the correct type or types of waste that can be placed into a given bin, as shown in Figure 5 below
- Signposts and directions to location of waste storage areas
- Clear signage in all waste storage areas to instruct users how to correctly separate waste and recycling
- Maintaining a consistent style colour scheme that complies with AS 4123, and a system for signs throughout the Development, and
- Emergency contact information for reporting issues associated with waste or recycling management.

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<sup>20</sup> NSW EPA waste signs/posters <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>





**Figure 5 - Example NSW EPA labels for ongoing waste**

## 9.10 Roles and Responsibilities

It is the responsibility of the Goodman Representative, or equivalent role, to implement this WMP and a responsibility of all tenants and staff to follow the waste management procedures set out by the WMP. SLR recommends that all subcontractors have the roles and responsibilities of all waste management personnel identified and The Development's waste management system clearly explained. A summary of recommended roles and responsibilities are provided in Table 14.

**Table 14 Suggested operational waste-related roles and responsibilities**

Responsible Person	General Tasks
Goodman Representative or equivalent role	Ensure the WMP is implemented throughout the life of the operation.
	Update the WMP as needed to ensure the plan remains applicable to the site.
	Undertake liaison and management of contracted waste and recycling collections with Council, contractors and any relevant authorities.
	Regularly conduct waste audits to review system performance and identify any additional materials that could be recovered.
	Manage any complaints and non-compliances reported through waste audits and other sources.
	Ensure all monitoring and audit results are well documented and conducted as specified in this WMP.
	Conduct regular waste sorting, physical condition and cleanliness inspections of bins, waste storage rooms and all other waste management equipment for functionality, hygiene and safety.
	Organise cleaning and maintenance requirements for waste management equipment as required.
	Ensure waste and recycling storage rooms are kept tidy.
	Monitor bins to ensure no overfilling occurs and manage unexpected waste quantities to mitigate waste overflow in storage areas
	Ensure effective signage, communication and education is provided to alert visitors, employees, site management staff and cleaners about the provisions of this WMP and waste management equipment use requirements.
	Monitor and maintain signage to ensure it remains clean, clear and applicable.
	Manage ongoing education on correct source separation and waste management at least every three months.



Responsible Person	General Tasks
	Ensure that regular cleaning and daily transfer of bins is correctly being undertaken by the cleaners.
	Ensure all waste compactors and balers are maintained and operational.
	Ultimately responsible for the management of all waste management equipment, cleaning requirements, waste transfer and collection arrangements.
Cleaners and caretakers, if employed	Transfer general waste, recyclables, cardboard waste and hazardous waste to waste and recycling storage areas as required.
	Maintain and operate compactors and balers, if in use, to ensure they are in good condition and operating safely and effectively.
	Cleaning of all bins and waste and recycling rooms as required.
	Monitor bins to ensure no overfilling occurs.
	Ensure bins and waste storage areas are kept tidy and clean.
	Compliance with the provisions of this WMP.
Tenants' Representative	Transfer general waste, recyclables, cardboard waste to allocated waste and recycling storage areas.
	Adhere to all waste management directions and comply with The Development's waste management provisions as outlined by the Goodman Representative.





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