

# **Industrial Warehouse Development: Storage and Distribution Warehouse**

## **Waste Management Plan**

5 June 2025

## HB&B Property

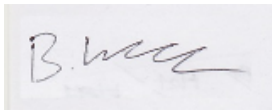
# Industrial Warehouse Development: Storage and Distribution Warehouse

### Waste Management Plan

5 June 2025

**Our Ref:**

30088823-TP-06-STORAGE-RPT-04-WMP



---

Brandon Williams

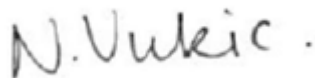
Author

**Prepared By:**

Arcadis Australia Pacific Pty Ltd  
Level 16, 580 George Street  
Sydney NSW 2000  
Australia  
Tel: 02 8907 9000

**Prepared For:**

HB+B Property  
Ground Floor  
55-59 Regent St  
Chippendale NSW 2007



---

Nicole Vukic

Approver

## Version Control

Revision No.	Date Issued	Description	Author	Approver
0.1	10 March 2025	Draft report	B. Williams	N. Vukic
1.0	14 April 2025	Final report	B. Williams	N. Vukic
1.1	5 June 2025	Final report	B. Williams	N. Vukic

# Contents

<b>Acronyms and abbreviations .....</b>	<b>v</b>
<b>Executive summary .....</b>	<b>vi</b>
<b>1 Introduction.....</b>	<b>1</b>
1.1 SEARs .....	1
1.2 Scope .....	2
1.3 Sources of information .....	2
<b>2 Context .....</b>	<b>1</b>
2.1 Location .....	1
2.2 Zoning and land use.....	3
2.3 Waste management approach .....	3
<b>3 Proposed development.....</b>	<b>1</b>
<b>4 Construction waste management .....</b>	<b>1</b>
4.1 Waste generation .....	1
4.2 Waste management .....	1
<b>5 Operational waste management .....</b>	<b>1</b>
5.1 Waste generation .....	1
5.2 Bulky waste management .....	2
5.3 Problem waste management .....	2
5.4 Waste storage .....	2
5.5 Waste servicing and access.....	3
5.6 Roles and responsibilities .....	5
5.7 Waste management system summary.....	5
<b>Appendix A Site Plans.....</b>	<b>7</b>
<b>Appendix B Waste Management Register.....</b>	<b>8</b>

## Tables

Table 1-1 SEARs requirements and Government Agency comments .....	1
Table 1-2: Key sources of information .....	2
Table 3-1 Indicative land use mix for storage and distribution warehouse development.....	1
Table 4-1 Construction waste generated per 1,000 m <sup>2</sup> floor area.....	1
Table 4-2 Summary of construction waste generation and management.....	2
Table 5-1: Waste generation rates for the site (Source: Penrith Council’s DCP Industrial, Commercial and Mixed-Use Waste Management Guidelines, Table 6).....	1
Table 5-2: Estimated general waste and recycling volumes from warehouse operation .....	1
Table 5-3: Waste storage infrastructure and collection frequency .....	3
Table 5-4: Operational waste responsibilities at the site .....	5

## Figures

Figure 2-1 AIBP site location .....	1
Figure 2-2 Location of storage and distribution site within the AIBP development .....	2
Figure 2-3 Land Zoning Map (Source: ePlanning Spatial Viewer – NSW Planning Portal) .....	3
Figure 2-4 Waste management hierarchy (NSW EPA) .....	4
Figure 4-1 Indicative location of construction waste storage area .....	2
Figure 4-2: Example signage for construction waste bins.....	3
Figure 5-1: Proposed waste area .....	3
Figure 5-2 Waste vehicle path of travel through the site.....	4
Figure 5-3 Typical large collection vehicle dimensions .....	4

## Acronyms and abbreviations

Acronym	Definition
AIBP	Alspect Industrial Business Park
DCP	Development Control Plan
MGB	Mobile Garbage Bin - Small bins that have two wheels so can only be moved forwards and backwards (not sideways).
SEAR	Secretary's Environmental Assessment Requirements
WMP	Waste Management Plan

## Executive summary

This Waste Management Plan (WMP) has been prepared by Arcadis to accompany a State Significant Development Application (SSDA) SSD-81434988 for a Storage and Distribution Warehouse. The project seeks detailed approval for a new Storage and Distribution Warehouse within the Alspec Industrial Business Park (AIBP) at 221-235 Luddenham Road, Orchard Hills (the site). The site is legally described as Lot 1 in DP 1293805. However, the proposed warehouse will be designated as lot 11 in the new community subdivision plan (DP271602) following completion of the estate subdivision.

This report has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) issued for the project (SSD-81434988).

This report concludes that the proposed development is suitable and warrants approval subject to the implementation of the following mitigation measures.

- This WMP will be retained on-site during the demolition, excavation and construction phases of the development, along with other waste management documentation (e.g. contracts with waste service providers).
- All demolition and construction waste generated on site will be stored in bins by material type.
- Maximising the re-use and recycling of existing materials as part of material section.
- A waste compactor area is provided, as shown along the hardstand of the storage and distribution facility site plans.

# 1 Introduction

This report has been prepared in support of a development at 221-235 Luddenham Road, Orchard Hills (the site), including detailed approval for a Storage and Distribution Centre. The project seeks to deliver a new a new Storage and Distribution Warehouse within the Alspeck Industrial Business Park (AIBP).

Specifically, the project comprises the following:

- Construction of a new warehouse with a two-level ancillary office. The warehouse is predominantly 14.7 metres in height, with a high-bay warehouse component at the western portion of the building which achieves a maximum height of 39 metres.
- A total building area of 45,449 m<sup>2</sup>; broken down as follows:
  - Warehouse area: 43,606 m<sup>2</sup>
  - Office Area: 1,843 m<sup>2</sup>
- Loading areas at the north and south sides of the warehouse, with hardstand surrounding the perimeter of the warehouse. Hardstand and carpark areas are accessed via four new driveways from the AIBP internal estate road.
- Provision of vehicular parking onsite to accommodate cars, vans, semi-trailers and B-doubles. It is envisaged that approximately 329 spaces will be provided on site within the proposed hardstand and carparking areas.
- Perimeter landscaping and tree planting with a total area of 10,134 m<sup>2</sup> (10%).

## 1.1 SEARs

This WMP has been prepared in response to the requirements contained within the Secretary’s Environmental Assessment Requirements (SEARs) dated 4 April 2025 and issued for the SSDA (SSD-81434988). Specifically, this report has been prepared to respond to the SEARs requirement and government agency comments issued below (Table 1-1).

Table 1-1 SEARs requirements and Government Agency comments

Item	Description of Requirement	Report Reference
17.1	Identify, quantify and classify the likely waste streams to be generated during construction and operation.	Storage and Distribution Warehouse WMP, Section 4.1 and Section 5.1
17.2	Provide the measures to be implemented to manage, reuse, recycle and safely dispose of waste in accordance with any council waste management requirements	Storage and Distribution Warehouse WMP, Section 4.2 and Section 5
17.3	Identify appropriately sized waste storage areas, collection access paths/roads, and appropriate servicing arrangements for the site.	Storage and Distribution Warehouse WMP, Section 5.4 and 5.5
17.4	If buildings are proposed to be demolished or altered, provide a hazardous materials survey	Storage and Distribution Warehouse WMP, Section 4.1.1 Hazardous Material Survey N/A – subject site is greenfield in nature

## 1.2 Scope

This WMP details:

- Waste generating activities during the demolition, construction and operational stage and the likely types of waste to be generated
- Estimated volumes for reuse, recycling and disposal
- Mitigation measures aligned with the waste management hierarchy
- Servicing arrangements including the transfer and collection of waste.

## 1.3 Sources of information

Table 1-2 lists the key sources of information and documents that have informed this WMP.

Table 1-2: Key sources of information

Aspect	Source
Proposed site details	<ul style="list-style-type: none"><li>• Architectural Drawing Set (Nettletontribe)<ul style="list-style-type: none"><li>– 14291_DA010 P1 dated 28/02/2025</li></ul></li></ul>
Floor space usage	<ul style="list-style-type: none"><li>• Architectural Drawing Set (Nettletontribe)<ul style="list-style-type: none"><li>– 14291_DA010 P1 dated 28/02/2025</li></ul></li></ul>
Development requirements and guidelines	<ul style="list-style-type: none"><li>• Penrith Council's Development Control Plan (DCP) Industrial, Commercial and Mixed-Use Waste Management Guidelines</li></ul>
Industrial waste generation rates	<ul style="list-style-type: none"><li>• Hills Shire DCP 2012- Appendix A</li><li>• Penrith Council's DCP Industrial, Commercial and Mixed-Use Waste Management Guidelines</li><li>• the City of Sydney's Guidelines for Waste Management in New Developments</li></ul>

## 2 Context

### 2.1 Location

The subject site is located on Luddenham Road, south of Patons Lane, in Orchard Hills. Located approximately 30 kilometres west of Parramatta CBD, the proposed Storage and Distribution warehouse is part of the larger Alspec Industrial Business Park (AIBP) development. The AIBP site is irregular in shape, with frontages across both Luddenham Road and Patons Lane.

The subject site is broadly rectangular in shape, with a total site area of 104,959 m<sup>2</sup>. The site has frontage to an internal road within the AIBP site. The internal access road provides access to the broader road network via Patons Lane and Luddenham Road.

The site location is shown in Figure 2-1, with the location of the Storage and Distribution site within the AIBP development shown in Figure 2-2.

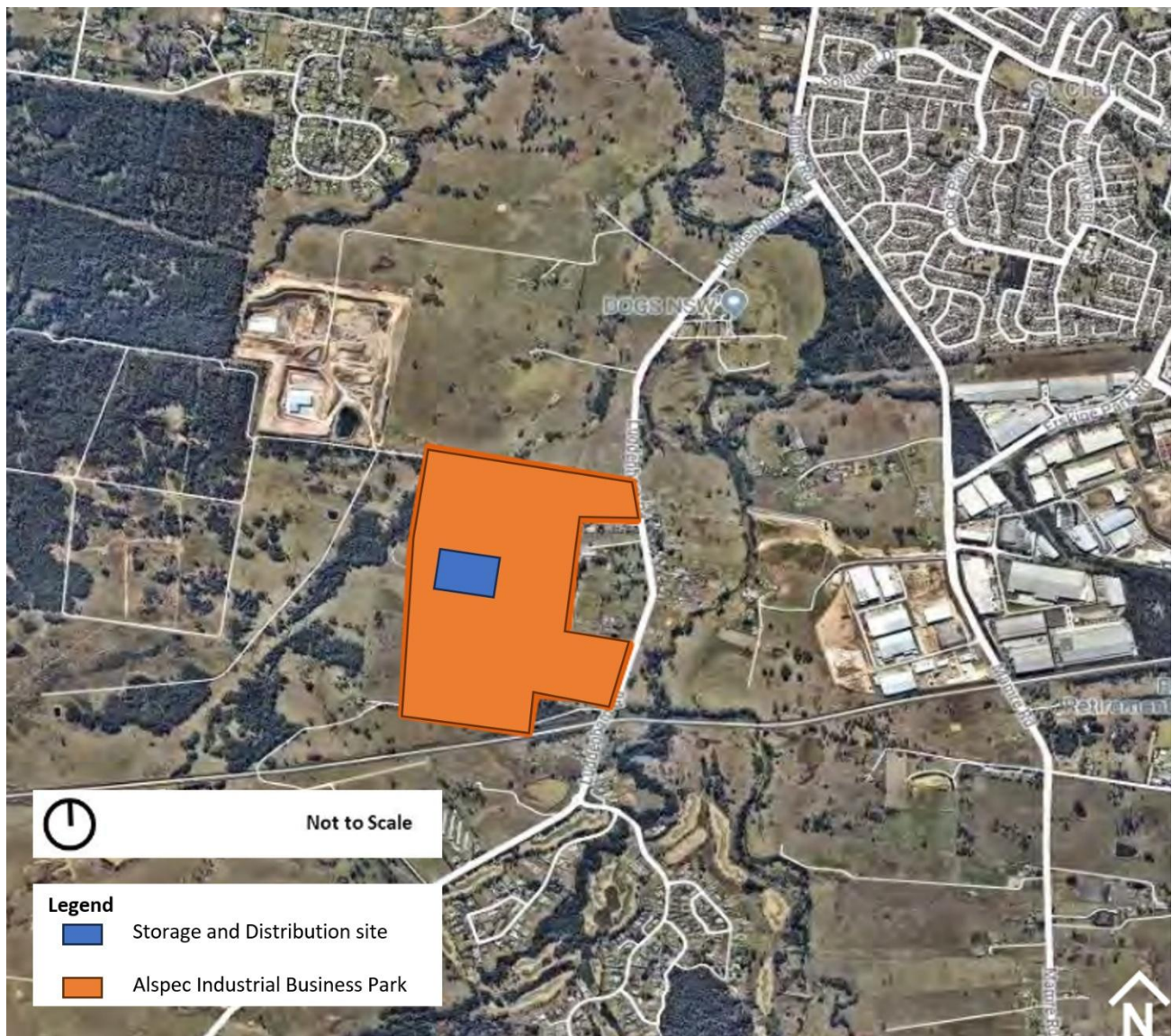


Figure 2-1 AIBP site location



Figure 2-2 Location of storage and distribution site within the AIBP development

## 2.2 Zoning and land use

As shown in Figure 2-3, the subject site is in a General Industrial Zone (E4). The region surrounding the site is a mix of Environmental Conservation (C2) and Rural Landscape Zone (RU2). To the east of Mamre Road, the more common land uses are General Industrial (IN1) and Low Density Residential (R2).

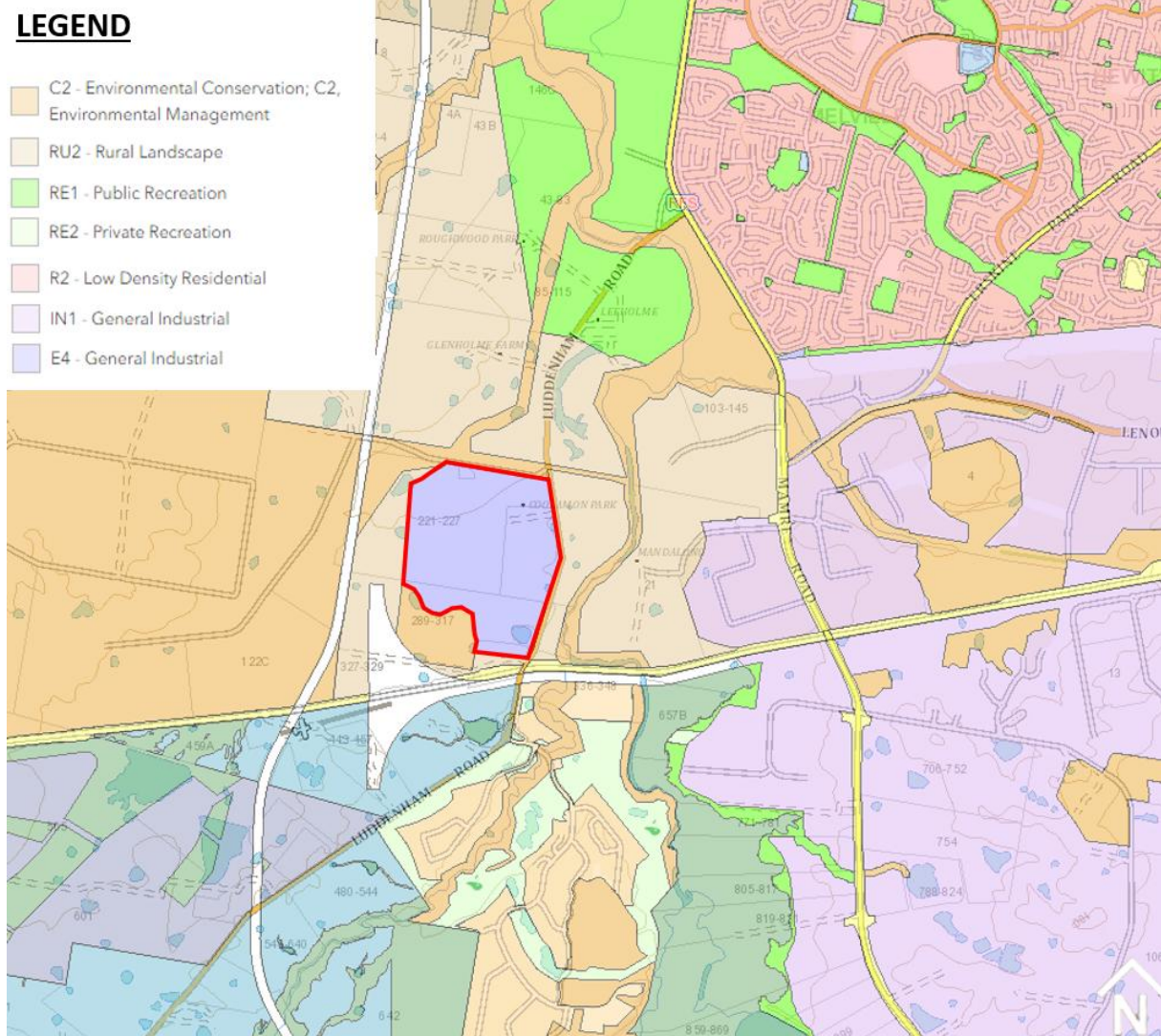


Figure 2-3 Land Zoning Map (Source: ePlanning Spatial Viewer – NSW Planning Portal)

## 2.3 Waste management approach

The objective for waste management across the project is to prioritise the prevention and minimisation of waste generation, followed by the effective management of wastes (storage, handling, transport, recycling and disposal) in a manner that minimises impact on the environment.

The NSW Environmental Protection Authority (EPA) waste management hierarchy has been adopted as the guiding framework for waste management of this project, depicted in Figure 2-4. This hierarchy underpins the objectives of the *Waste Avoidance and Resource Recovery Act 2001* and is a key element for guiding waste management practices in NSW.

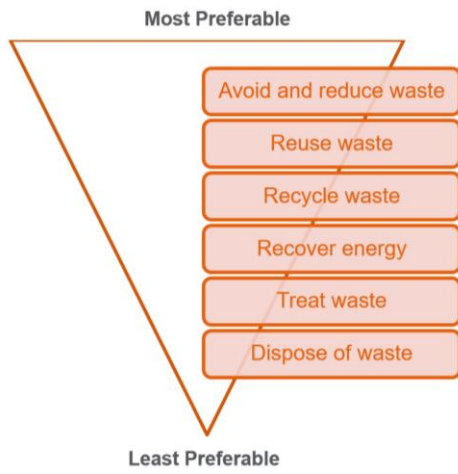


Figure 2-4 Waste management hierarchy (NSW EPA)

### 3 Proposed development

The proposal is for the development of a 104,959 m<sup>2</sup> parcel of land and is part of the wider AIBP development. The storage and distribution warehouse development will comprise of a single-storey warehouse and office land uses.

A summary of the land use mix for the storage and distribution development is provided in Table 3-1.

Table 3-1 Indicative land use mix for storage and distribution warehouse development

	Land use	Total building GFA (m <sup>2</sup> )
Storage and distribution warehouse proposal	Warehouse	43,606
	Office(s)	1,843

The total land use gross floor areas (GFAs) separated by type for the proposal are:

- Total building = 45,449 m<sup>2</sup>
- Total car park (private + hardstand) = 37,503 m<sup>2</sup>
- Total landscape = 10,134 m<sup>2</sup>
- Total site area = 104,959 m<sup>2</sup>

A copy of the architectural drawings used in completing this WMP are provided in Appendix A.

## 4 Construction waste management

### 4.1 Waste generation

This section identifies, classifies and quantifies the waste streams likely to be generated during the construction of the proposed development.

#### 4.1.1 Demolition waste

The proposed development will be constructed on land that is generally greenfield in nature, with some existing structures on developed land. A small area of the broader AIBP development site is occupied by residential buildings, which would be cleared under a separate development application for earthworks as part of the broader AIBP site works.

Waste generation and management relating to demolition or site preparation works for the proposed development will be addressed in another development application.

#### 4.1.2 Construction waste

Penrith Council’s guidelines do not provide generation rates for construction waste. For the purposes of this assessment, the construction waste generation rates from the *Hills Shire Development Control Plan 2012-Appendix A* have been adopted.

The waste generation rates for the proposed site uses are summarised in Table 4-1.

Table 4-1 Construction waste generated per 1,000 m<sup>2</sup> floor area

Land Use	Timber	Concrete	Bricks	Gyprock	Sand/ soil	Metal	Other
Warehouse	0.25	2.1	1.65	0.45	4.8	0.6	0.5
Office	5.1	18.8	8.5	8.6	8.8	2.75	5

Using the waste generation rates in the table above, the approximate construction waste quantities for the storage and distribution warehouse have been calculated. The calculated quantities and the recommended management approach for each stream is provided in Table 4-2.

Table 4-2 Summary of construction waste generation and management

Materials	Volume generated (m <sup>3</sup> )	Reuse?	Recycle?	Disposal?	Typical waste management
Excavation (eg soil, rock)	255	✓	✓		Excavated soil and rock can be reused on- site or in other civil applications or landscaping.
Green waste	<10	✓	✓		Minimal garden organic waste from landscaping.
Bricks	86	✓	✓		Extraneous bricks can be reused in other developments. Broken bricks can be crushed into aggregate for use in civil construction applications.
Concrete	125	✓	✓		Concrete can be crushed into aggregate for reuse on- site or in other civil applications or landscaping.
Timber	21	✓	✓		Timber to be separated wherever possible to enhance resource recovery. Surplus and offcut material returned to manufacturer for reuse.
Plasterboard	30	✓	✓	✓	Good quality plasterboard pieces can be reused in building construction. Plasterboard can also be recycled into gypsum products. Painted plasterboard can be recycled if paper coverings and other contaminants are removed from the gypsum core
Metal (ferrous and non-ferrous)	31	✓	✓		Metals can be recycled and would be transported to a suitably licensed facility.
<b>Other</b>					
• Glass	31	✓	✓		Glass can be crushed at an external construction and demolition (C&D) waste facility to produce glass sand. Otherwise, extraneous, good quality glass panels can be reused in other building applications
• Fixtures and fittings		✓	✓		Fixtures and fittings to be reused wherever possible or returned to manufacturer
• Floor coverings		✓		✓	Good quality floor coverings can be reused in other construction applications. Poor quality floor coverings are suitable for disposal only.
• Packaging			✓	✓	Packaging such as cardboard is largely suitable for recycling. Some soft plastics may be recycled. Styrofoam and other plastic packing materials are not recyclable and must be disposed of carefully. Proper storage and disposal of Styrofoam is required to prevent windblown litter within the site and in the local area.
Hazardous/ special waste	Unknown			✓	Appropriate management methods to be undertaken should hazardous or special waste be found at the site.

## 4.2 Waste management

### 4.2.1 Waste minimisation

Where possible, the construction contractor should review material ordering to ensure appropriate volumes of construction materials are purchased for the development. Excess material such as brick, concrete, timber, and finishings like paint or floor coverings that are unused or in good quality may be returned to the supplier or resold or retained for other projects.

To align with Penrith Council's DCP, an 80 per cent target for recycling and reuse for construction stages has been set for the proposed development. The construction contractor will be responsible for monitoring levels of wastage and meeting the 80 per cent target for recycling and reuse of materials.

Practices that can be adopted to achieve this target include:

- Maximising the re-use and recycling of existing materials as part of material section
- Planning deliveries to ensure the right quantity of materials is provided at the right time in the construction process to avoid damage and wastage, and returning unused materials
- Considering the full lifecycle of the development in planning for the re-use and recycling of materials.

### 4.2.2 Waste storage

All demolition and construction waste generated on site will be stored in bins by material type. Bins will largely constitute skip bins of a range of sizes, and for smaller waste streams 240L Mobile Garbage Bins (MGBs) will be provided. Special and problem wastes (such as liquids and hazardous wastes) will not be disposed of via skip bins and will be managed separately in accordance with the waste type and legislative requirements.

Figure 4-1 provides an indicative location of construction waste storage for the proposed development.

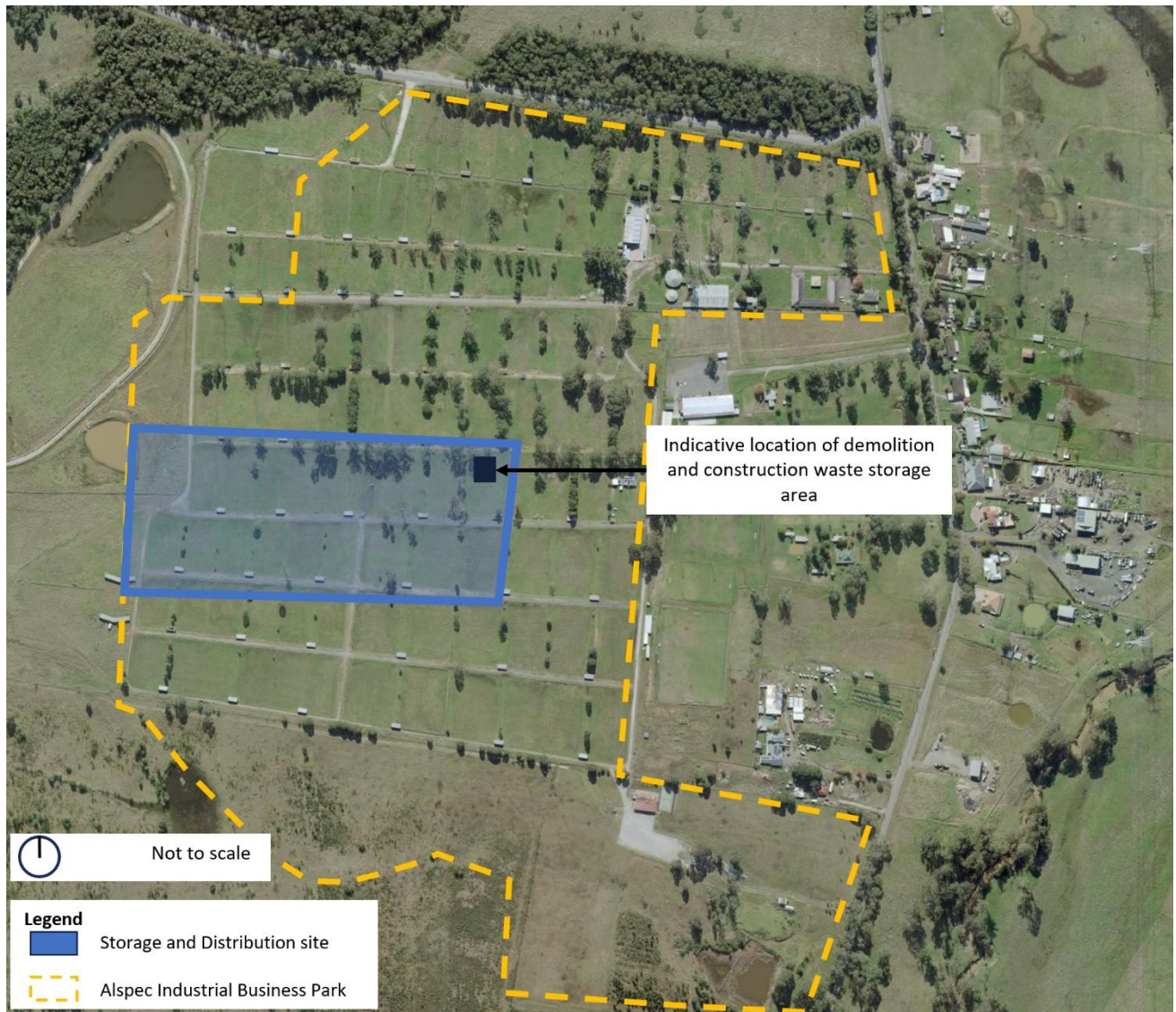


Figure 4-1 Indicative location of construction waste storage area

The construction and demolition waste storage area are to be confirmed by the construction management team upon commencement of construction works and may be relocated as each stage commences. At a minimum, the waste storage area location selection will consider environmental factors including slope, drainage, location of watercourses, proximity to native vegetation and amenity impacts (such as dust emissions from waste and noise from collection) on occupants of neighbouring properties.

Bins will be clearly marked in accordance with the contents and be positioned in an area that is easily accessible for collection vehicles, away from stormwater drainage infrastructure, clear of overhead obstacles, and covered when not in use to avoid the risk of creating windblown litter.

Examples of bin signage are provided in Figure 4-2.



Figure 4-2: Example signage for construction waste bins

### 4.2.3 Waste collection

A waste contractor will be engaged to perform waste collection services at the site throughout the demolition and construction stages. Vehicle access to the waste storage area will be via the Site Access Road via a temporary driveway on Patons Lane.

Waste collection will be performed by an appropriately licensed waste collection contractor and all waste will be transported to appropriately licensed facilities, suitable for each waste type. The waste collection contractor will be responsible for transportation of waste in accordance with the requirements of the Protection of the Environment Operations Act 1997.

All waste that cannot be reused or recycled will be disposed of in accordance with the Protection of the Environment Operations Act 1997 and the Waste Avoidance and Resource Recovery Act 2001. Waste will be disposed at an EPA approved waste management facility following classification.

Hazardous waste will be removed by an accredited contractor and treated or disposed of at an EPA licensed facility.

### 4.2.4 Special or hazardous wastes

A preliminary assessment of the current site does not indicate the presence of any hazardous building materials such as asbestos. However, a protocol for unexpected hazardous waste finds (such as asbestos) will be prepared and followed to minimise potential harm to human health or the environment.

Any hazardous waste found will be removed and transported by appropriately licensed and accredited contractors, in accordance with relevant legislation.

### 4.2.5 Waste contractor and waste facilities

Contractors engaged for the collection and transportation of waste materials generated from demolition and construction stages are to be selected in consideration of past and current environmental performance, qualification and licensing, and destination and fate of wastes. Contractors that prioritise reuse and recycling of materials will be given higher preference.

The construction contractor will also be responsible for retaining waste dockets from the waste collection contractor.

Waste facilities, where the choice is made by the developer, will be chosen with high regard to recovery rates, environmental performance, and proximity to the site.

Potential options for receiving waste facilities include Bingo Recycling on Patons Lane directly west of the site, or further afield at Bingo Recycling in Kemps Creek, Breen Resources in Kurnell, or Bingo Recycling in Alexandria.

#### **4.2.6 Record keeping**

This WMP will be retained on-site during the demolition, excavation and construction phases of the development, along with other waste management documentation (e.g. contracts with waste service providers).

Responsibility for the WMP, waste documentation and processes during construction will be with the site manager or builder.

Accurate records will be kept of wastes generated throughout demolition and construction stages. Construction waste dockets to confirm which facility received the material for recycling or disposal are to be retained onsite in accordance with State Government waste requirements. A log book will be maintained that details:

- Time and date of each trip where waste is removed from the site
- A description of waste and quantity
- The facility that will receive the waste
- The intended use of the waste (reuse, recycled, stockpiled or disposed)
- Reference number (such as invoice or receiving facility reference number), vehicle registration and company name.

Waste management documentation, the logbook and associated dockets and receipts will be made available for inspection by an authorised Council Officer at any time during site works. Details of waste types, volumes and destinations will be recorded in a Waste Management Register. An example Waste Management Register is available in Appendix B.

## 5 Operational waste management

### 5.1 Waste generation

This section identifies, classifies and quantifies the waste streams likely to be generated during the development’s operation. Waste generation rates have been adopted from Penrith Council’s DCP Industrial, Commercial and Mixed-Use Waste Management Guidelines for estimating the type and quantities of waste generated from the operational activities

The waste generation rates for the proposed site uses are summarised in Table 5-1.

Table 5-1: Waste generation rates for the site (Source: Penrith Council’s DCP Industrial, Commercial and Mixed-Use Waste Management Guidelines, Table 6)

Land use	General Waste Generation (L/ 100 m <sup>2</sup> / day)	Recycling Generation (L/ 100 m <sup>2</sup> / day)
Warehouse	10	10
Office	10	10

Using the waste generation rates in Table 5-1, the approximate weekly waste quantities for the proposed development have been calculated. The operational waste quantities were also calculated based on the following assumptions:

- The floor areas as presented on the architectural drawings attached in Appendix A
- A week comprising seven days of operation.

The estimated quantities of operational waste generated by the Storage and Distribution development is provided in Table 5-2.

Table 5-2: Estimated general waste and recycling volumes from warehouse operation

Land Use	Floorspace (m <sup>2</sup> )	General waste (L/ day)	Recycling (L/ day)	General waste (L/ week)	Recycling (L/ week)
Warehouse	43,606	4,361	4,361	30,527	30,527
Office	1,843	184	184	1,288	1,288
TOTAL		4,545	4,545	31,815	31,815

Information provided by TMX from a similar facility identifies operational waste from the warehouse is generally limited to garbage, paper/ cardboard and other recycling.

Small quantities of the following waste streams are expected to be generated in the office spaces:

- E-waste such as electronic equipment
- Toner cartridges
- Problem wastes such as batteries and fluorescent light tubes.

This waste should be managed and stored within the bulky waste storage area in the warehouse, with monitoring in place for the collection and removal of these wastes once sufficient volumes have been generated.

While no food waste has been identified in the calculations above, Penrith Council's DCP requires food scraps should be placed in specialised containment bins and collected on a regular basis. To minimise food waste in the general waste stream, it is recommended that the food is donated, composted on site or sent off-site to a composting facility.

## 5.2 Bulky waste management

The Penrith DCP requires additional storage space to be provided for bulky waste materials that cannot be disposed of in the general or recyclable waste stream. This includes, broken or disused furniture, and broken storage containers. It is assumed that wooden pallets are being collected and reused by freight companies, so storage of this waste type has not been accounted for in the bulky waste area.

Penrith Council's guidelines do not provide storage area dimensions for bulky waste. For the purposes of this assessment, the storage area dimensions for bulky waste from the City of Sydney's Guidelines for Waste Management in New Developments has been adopted.

For storing bulky waste, the adopted guidelines require:

- 4 m<sup>2</sup> for developments between 100 m<sup>2</sup> and 2,000 m<sup>2</sup>, and
- An additional 4 m<sup>2</sup> for developments over 2,000 m<sup>2</sup> and for every 20,000 m<sup>2</sup> of building space.

Using the above specifications 12 m<sup>2</sup> of area is recommended to be allocated for bulky waste storage for proposed development.

## 5.3 Problem waste management

Problem wastes such as batteries and fluorescent light tubes would need to be managed as part of the site wide waste management system by site management and would be stored in the bulky waste storage area on the ground floor. The storage and distribution facility is responsible for transporting these wastes to the bulky waste storage area, and the site waste manager would be responsible for monitoring these waste types and arranging collection of these wastes once sufficient volumes have been generated.

## 5.4 Waste storage

The estimated size of the waste storage area is provided in Table 5-3. This has based on:

- The estimated quantities of operational waste and recycling identified in Section 5.1
- The bulky and problem waste spatial requirements identified in Section 5.2 and 5.3
- Bin selection has been based on the similar warehouse operational waste practices.

Table 5-3: Waste storage infrastructure and collection frequency

Waste Stream	Weekly generation (L)	Bin size and number required	Capacity (L)	Collection frequency	Minimum space requirement
General waste	30,527 (warehouse)	1 x hook lift 35 m <sup>3</sup>	35,000	Once per week	19 m <sup>2</sup>
	1,288 (office)	1 x front lift 3 m <sup>3</sup>	3,000	Once per week	3 m <sup>2</sup>
Recycling	31,815 (combined)	1 x hook lift 35 m <sup>3</sup>	35,000	Once per week	19 m <sup>2</sup>
Bulky and hazardous waste	-	-		As needed	12 m <sup>2</sup>
<b>Total area required</b>					<b>53 m<sup>2</sup></b>

A waste compactor area is provided along the hardstand of the storage and distribution facility. This waste storage area is in accordance with the above and Penrith Council’s requirements is shown in Figure 5-1.

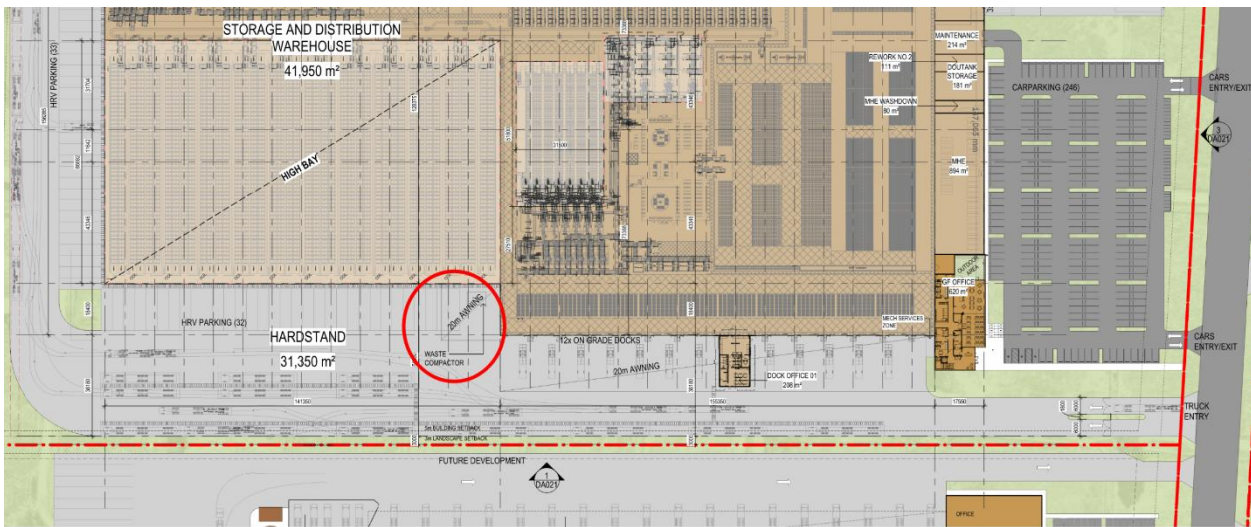


Figure 5-1: Proposed waste area

## 5.5 Waste servicing and access

A suitably licensed and qualified private waste contractor will be engaged to collect waste generated during the standard operations of the site.

Waste vehicles would enter the site from the truck entry driveway near the southern boundary on the Internal Access Road. Once they have entered the site, waste vehicles will travel west along the hardstand, past the 12-space on grade dock area. The waste compactor zone will then be to the right, at the southern section of the hardstand. The waste collection vehicle will have adequate space to be able to perform in and out turning movements at waste area for collection. To exit, waste vehicles must continue travelling clockwise around the hardstand to reach the truck exit driveway near the northern boundary of the site. Waste vehicles will be placed back onto the Internal Access Road, allowing them to depart from the wider industrial business park.

The proposed waste vehicle path of travel is provided in Figure 5-2.

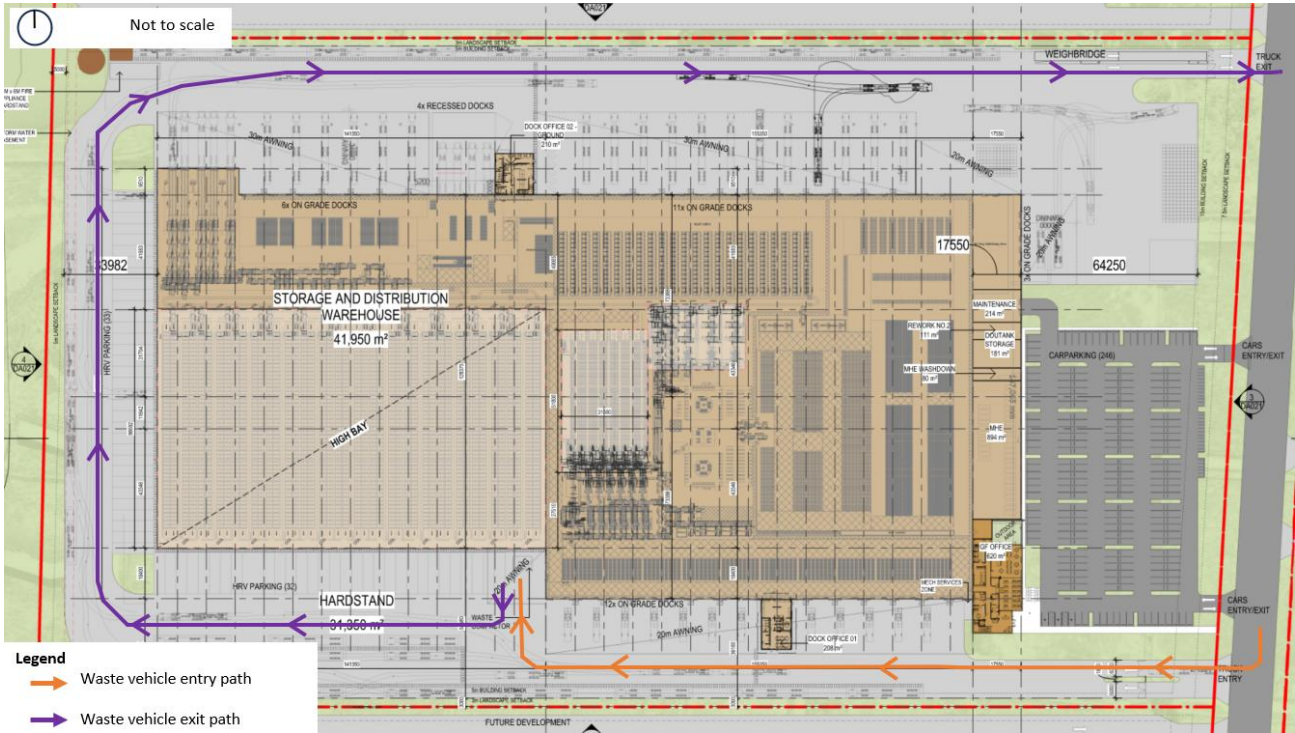


Figure 5-2 Waste vehicle path of travel through the site

Waste vehicles will enter and exit the site in a forward direction, with minimal reversing manoeuvres required for vehicles to correctly position within the collection point. All waste collection activities would occur fully within the confines of the site, in the designated area.

The access and hardstand areas have been designed to safely accommodate a B-Double vehicle moving through the site and would therefore be able to accommodate both hook lift and front-loading waste collection vehicles. Typical waste collection vehicle dimensions, as informed by *AS2890.2 Parking facilities: off-street commercial vehicle facilities* are provided in Figure 5-3, for reference.

Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Height in operation (m)	3.9	4.2	6.5	7.1	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	13.0
Maximum payload (t)	10.0	10.8	11.0	14.5	9.5
Turning circle (m)	25.0	21.4	25.0	25.0	18

\* The maximum reach of a side arm is 3 m.

Sources: JJ Richards, SUEZ, MacDonald Johnson, Cleanaway, Garwood, Ros Roca, Bingo and Edbro. Figures shown represent the maximum dimensions for each vehicle type.

Figure 5-3 Typical large collection vehicle dimensions

Collection of the 3 m<sup>3</sup> bin is expected to occur via a 10.5 m front lift truck. A clearance of 5.5 m is required to ensure the lift action can be completed without interference from vertical obstructions over the waste area.

Collection of the 35 m<sup>3</sup> RORO skip bins will be accommodated by a 9 m HRV hook truck. A clearance of up to 8.5 m is required to ensure the lift action can be completed without interference from vertical obstructions over the waste area.

The access and hardstand areas have been designed to safely accommodate a B-Double vehicle moving through the site and would therefore be able to accommodate both hook lift and front-loading waste collection vehicles.

Problem waste produced at the site will be collected by appropriately licensed specialised services.

Once a private waste contractor is engaged, a valid waste and recycling collection contract is recommended to demonstrate disposal at a waste facility lawfully able to accept it. Written evidence of the valid contract should be kept on-site.

## 5.6 Roles and responsibilities

The broad roles and responsibilities in the waste management strategy of the site are summarised in Table 5-4.

Table 5-4: Operational waste responsibilities at the site

Responsibility	Person responsible
Management of waste within each tenancy	Tenancy staff and/ or their contracted cleaners
Appropriate disposal of each waste type in tenancy bins	Tenancy staff and/ or their contracted cleaners
Transfer of bins between interim waste storage areas and communal	Tenancy staff and/ or their contracted cleaners
Management of wastes not identified in Section 5	Tenancy staff and/ or their contracted cleaners
Waste collection	Tenancy staff and/ or their contracted cleaners
WMP record keeping and log books	Tenancy staff and/ or their contracted cleaners
Management of wastes in the communal waste room (including bulky waste)	Building management and/ or their contracted cleaners
Inspection of bins and equipment	Building management contracted cleaners
Cleaning of bins	Building management contracted cleaners
Engagement of waste collection contract	Building management

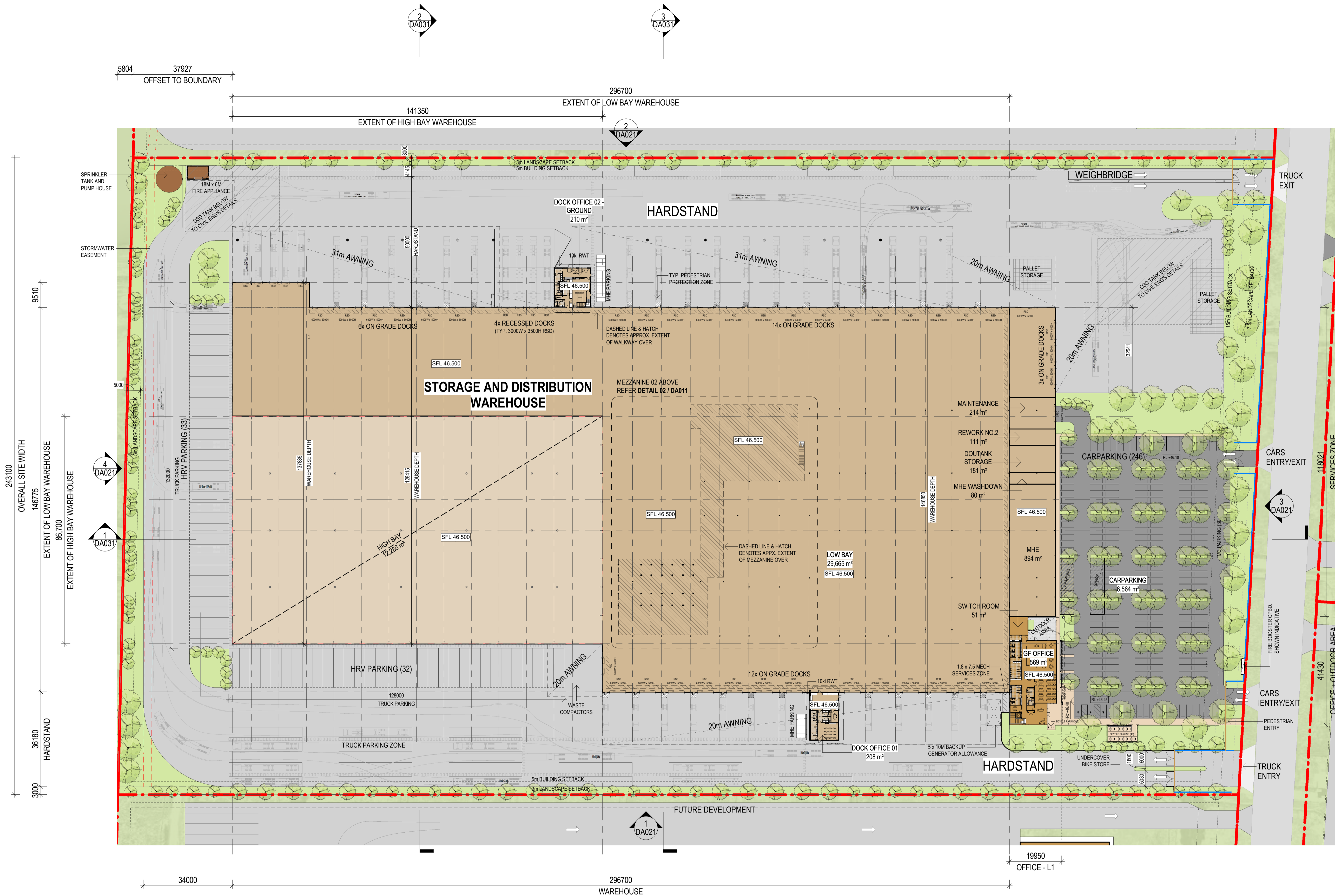
## 5.7 Waste management system summary

The various waste streams generated on-site are summarised as follows:

- General waste:** General office waste shall be placed within a tied plastic bag prior to transferring into the general waste bin. Smaller receptacles will be situated throughout the office and warehouse to aid in collection. For general warehouse waste, large items will be transferred directly to the RORO bins for collection.
- Recycling:** All recyclables will be transferred directly to the RORO bins for collection. Depending on recycling waste generated, future consideration of separate commingled bins for different streams (including paper, cardboard, mixed plastic, glass, aluminium, steel) should be considered.

- **Paper and cardboard:** Paper and cardboard can represent more than 75 per cent of all recyclables generated by industrial uses. It may be suitable to incorporate a separate paper and cardboard collection or cardboard baler to reduce waste collection costs and improve resource recovery potential. All cardboard should be flattened prior to placement into the RORO bin. A cardboard baler could be considered by site management to improve storage efficiency of this waste stream.
- **Plastic (stretch and bubble wrap):** the proposed development is expected to generate a plastic film waste which can be managed with a separate collection. A 1 m<sup>3</sup> bag and frame setups for collection by specialist contractor should be considered as part of the broader waste management strategy.
- **Garden waste:** Minimal garden waste is expected to be generated on site. Any garden waste generated through the maintenance of landscaped areas around the site would be managed and removed by the landscape management contractor.
- **Food waste:** Minimal food waste is expected to be generated on site. It is recommended that any food waste or excess food is separately collected for composting offsite or disposed via landfill.
- **Bulky and other hazardous waste:** The disposal of hard, bulky, liquid or potentially hazardous wastes shall be organised as necessary by site facilities management. A storage area has been provided within the development to accommodate the storage of bulky waste prior to collection.

# Appendix A    **Site Plans**



STORAGE AND DISTRIBUTION...	
LUDDENHAM ROAD, ORCHARD HILLS	
<b>SITE AREA (m<sup>2</sup>)</b>	<b>104,959</b>
Total Building Foot Print	44,593
<b>WAREHOUSE AREA - GROUND FLOOR TOTAL (m<sup>2</sup>)</b>	<b>41,950</b>
LOW BAY AREA (m <sup>2</sup> )	29,665
HIGH BAY AREA (m <sup>2</sup> )	12,285
<b>WAREHOUSE AREA - MEZZANINES TOTAL (m<sup>2</sup>)</b>	<b>2,708</b>
MEZZANINE 1 AREA (m <sup>2</sup> )	2,385
MEZZANINE 2 AREA (m <sup>2</sup> )	323
<b>TOTAL WAREHOUSE AREA (m<sup>2</sup>)</b>	<b>44,658</b>
MHE	894
MHE WASHDOWN	80
MAINTENANCE	214
REWORK NO.02	111
DOUTANK STORAGE	181
SWITCHROOM - MSB	51
PUMP ROOM AND TANKS	125
<b>TOTAL SERVICES AREA (m<sup>2</sup>)</b>	<b>1,656</b>
<b>WAREHOUSE &amp; SERVICES AREA</b>	<b>46,314</b>
DOCK OFFICE 01(m <sup>2</sup> )	208
DOCK OFFICE 02 (m <sup>2</sup> ) - Ground	210
DOCK OFFICE 02 (m <sup>2</sup> ) - Level 1	210
MAIN OFFICE (m <sup>2</sup> ) - Ground	569
MAIN OFFICE (m <sup>2</sup> ) - Level 1	646
<b>TOTAL OFFICE AREA (m<sup>2</sup>)</b>	<b>1,843</b>
<b>TOTAL GLA AREA</b>	<b>48,157</b>
<b>FSR</b>	<b>0.46</b>
<b>PARKING</b>	
BICYCLE PARKING	46
MOTORCYCLE PARKING	30
<b>VEHICLE PARKING</b>	
CAR PARKING	246
HRV PARKING	64
B-DOUBLE PARKING	19
<b>TOTAL VEHICLE PARKING</b>	<b>329</b>
<b>EXTERNAL AREAS</b>	
CANOPIES	12,062
CAR PARKING	6,564
HARDSTAND	30,939
LANDSCAPE AREA	10,134
LIGHTDUTY CONCRETE	n/a
PAVEMENT - BRUSHED CONCRETE	n/a
PAVEMENT - EXPOSED CONCRETE	570
OUTDOOR AREA	97
<b>TOTAL</b>	<b>48,304</b>
<b>TOTAL</b>	<b>10,134</b>
<b>LANDSCAPE PERCENTAGE</b>	<b>10%</b>





## **About Arcadis**

Arcadis is the leading global Design & Consultancy firm for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering, project and management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets. We are 27,000 people, active in over 70 countries that generate €3.3 billion in revenues. We support UN-Habitat with knowledge and expertise to improve the quality of life in rapidly growing cities around the world.

## **Arcadis Australia Pacific Pty Ltd**

Level 16, 580 George Street  
Sydney NSW 2000

T **+61 2 8907 9000**