



# Project Atlas Data Centre

## Waste Management Plan

### Goodman Property Services (Aust) Pty Ltd

The Hayesbery  
1-11 Hayes Road  
Rosebery NSW 2018

Prepared by:

**SLR Consulting Australia Pty Ltd**

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## Revision Record

| Revision                | Date          | Prepared By  | Checked By | Authorised By |
|-------------------------|---------------|--------------|------------|---------------|
| REV A – SSDA Submission | 31 March 2026 | Andrew Quinn | Gavin Hull | Andrew Quinn  |

## Basis of Report

This report has been prepared by SLR Consulting Australia Pty Ltd (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 (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.



## Executive Summary

This waste management plan has been prepared by SLR Consulting to accompany a state significant development application (SSDA) for the construction and ongoing operation of a data centre facility and associated offsite enabling infrastructure at 10 Roberts Road, Eastern Creek in the Blacktown City Council area. The site is legally described as Lot 553 in deposited plan 1110447.

This report has been prepared to address the industry Secretary's Environmental Assessment Requirements (SEARs) for the Project Atlas Data Centre (SSD - 101067971) dated 16 January 2026.

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

- Separation of waste and recyclables and recovery of recyclables as described.

Following the implementation of the above mitigation measures, the remaining impacts are appropriate.



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## 1.0 Introduction

A state significant development application (SSDA) has been prepared to support the approval for development of a data centre at 10 Roberts Road, Eastern Creek and associated offsite enabling infrastructure.

The proposal will include:

- Site preparation works including demolition, bulk excavation and removal of existing structures on the site, tree and vegetation clearing and bulk earthworks.
- Construction, fit-out and operation 24 hours per day, seven days per week of a data centre
- Offsite enabling infrastructure
- Two data centre buildings
  - o Building 1 – two levels and rooftop plant
  - o Building 2 – three levels and rooftop plant
- Ancillary office, EOT and amenity
- Provision of required utilities including:
  - o Diesel storage tanks
  - o Water tanks
  - o Substations on site
- Vehicle access for 20 m articulated vehicles (semi-trailers)
- Associated landscaping and site servicing
- Installation of site services and drainage infrastructure.

This waste management plan (WMP) has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) and accompanying cover letter issued for the Project Atlas Data Centre (SSD - 101067971) dated 16 January 2026.

Specifically, this report has been prepared to respond to the SEARs requirements issued and shown in below Table 1 below.

**Table 1 SEARs**

| Description of requirement                                                                                                                                                                                                                                                   | Section reference (this report)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Waste</b> – a waste management report that includes details of: <ul style="list-style-type: none"><li>– the quantities and classification of all waste streams to be generated on site during construction and operation of the development, including e-waste.</li></ul> | <ul style="list-style-type: none"><li>• For the identification and classification of demolition and construction waste please refer to <i>Table 4 Potential demolition and construction waste types, classifications and management methods</i></li><li>• For the estimated quantities of demolition waste please refer to <i>Table 6 Estimated types and quantities of demolition waste</i></li><li>• For the estimated quantities of construction waste please refer to <i>Table 8 Estimated types and quantities of construction waste</i></li><li>• For the identification and classification of operational waste please refer to <i>Table 10 Potential</i></li></ul> |



| Description of requirement                                                                                                                                                           | Section reference (this report)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                      | <p><i>operational waste types, classifications and management methods</i></p> <ul style="list-style-type: none"> <li>For the estimated quantities of operational waste please refer to: <ul style="list-style-type: none"> <li>Table 12 <i>Estimated quantities of operational waste and recycling – Building 1</i></li> <li>Table 13 <i>Estimated quantities of operational waste and recycling – Building 2 South</i></li> <li>Table 14 <i>Estimated quantities of operational waste and recycling – Building 2 North</i></li> </ul> </li> <li>Section 9.7.2 E-waste.</li> </ul>                                                  |
| Waste storage, handling and disposal                                                                                                                                                 | <p>For construction and demolition waste please refer to:</p> <ul style="list-style-type: none"> <li>Section 8.6 Reuse, Recycling and Disposal</li> <li>Section 8.7 Waste Storage and Servicing</li> </ul> <p>For operational waste please refer to:</p> <ul style="list-style-type: none"> <li>Section 9.7 Other waste management arrangements</li> <li>Section 9.7.2 E-waste</li> <li>Section 9.6 Space allowed for waste storage</li> <li>Section 9.9 Management of bins and waste storage area</li> <li>Section 9.4 Waste Storage Area Size</li> <li>Section 9.10 Waste Vehicle Access</li> <li>Section 9.13 Signage</li> </ul> |
| the measures that would be implemented to ensure that the development is consistent with the aims, objectives and guidance in the NSW Waste and Sustainable Materials Strategy 2041. | <p>For construction and demolition waste please refer to:</p> <ul style="list-style-type: none"> <li>Section 8.1 Targets for Resource Recovery</li> </ul> <p>For operational waste please refer to:</p> <ul style="list-style-type: none"> <li>Section 9.1 Targets for Resource Recovery</li> </ul>                                                                                                                                                                                                                                                                                                                                 |

Preparation of this WMP has been guided by the Blacktown Development Control Plan 2015 (BDCP) and *Blacktown City Council's guideline for waste management in new developments*.

## 2.0 Site Description

The proposed data centre is located at 10 Roberts Road, Eastern Creek, legally referred to as Lot 553 DP1110447 with offsite enabling infrastructure (OEI) proposed across Lot 21 DP1246626, Lot 20 DP1157491, and Lot 22 DP1246626 to connect to TransGrid's Sydney West Substation and Switchyard (refer to Figure 1 below). The site is located on Country of the Dharug people in the Blacktown City Council area.





**Figure 1 - Site Aerial**

The data centre site has a land area of approximately 168,574 m<sup>2</sup>.

The site is identified as part of the Eastern Creek Precinct Stage 3 in the Western Sydney Employment Area. It is located approximately 35 km of the Sydney Central Business District and 5.1 km from Rooty Hill Train Station.

The site has a site area of approximately 17 ha and is bounded by industrial development and has a primary frontage of 400 m to Roberts Road. The existing site contains an industrial warehouse and surrounding hard-stand areas. This is shown in Figure 1 above.

Surrounding land uses in the vicinity include:

- Northeast: A range of mixed-use industry and commercial buildings
- Southeast: Data centre and substation
- South, southwest and west: Land primarily owned and operated by TransGrid Sydney
- Northwest: Commercial industry and the Industrial Harvest café.

The site is zoned IN1 General Industrial in Chapter 2 Western Sydney Employment Area of State Environmental Planning Policy (Industry and Employment) 2021. The proposal is permissible with development consent in the IN1 zone as per the State Environmental Planning Policy (Transport and Infrastructure) 2021.

A summary of key features for the site and surrounding context is shown in Table 2 below.



**Table 2 Summary of Key Features**

| Item              | Description                                                                                       |
|-------------------|---------------------------------------------------------------------------------------------------|
| Site Area         | Data Centre – 168,574 m <sup>2</sup>                                                              |
| Ownership         | Goodman                                                                                           |
| Legal Description | Data Centre - Lot 553 DP1110447<br>OEI - Lot 21 DP1246626, Lot 20 DP1157491, and Lot 22 DP1246626 |

The two, three-level data centre buildings are referred to in this WMP as follows:

- Building 1, on the western side of the site,
- Building 2 on the eastern side - divided into two identical sections, named 'north' and 'south' in this waste plan. See Figure 2 below.

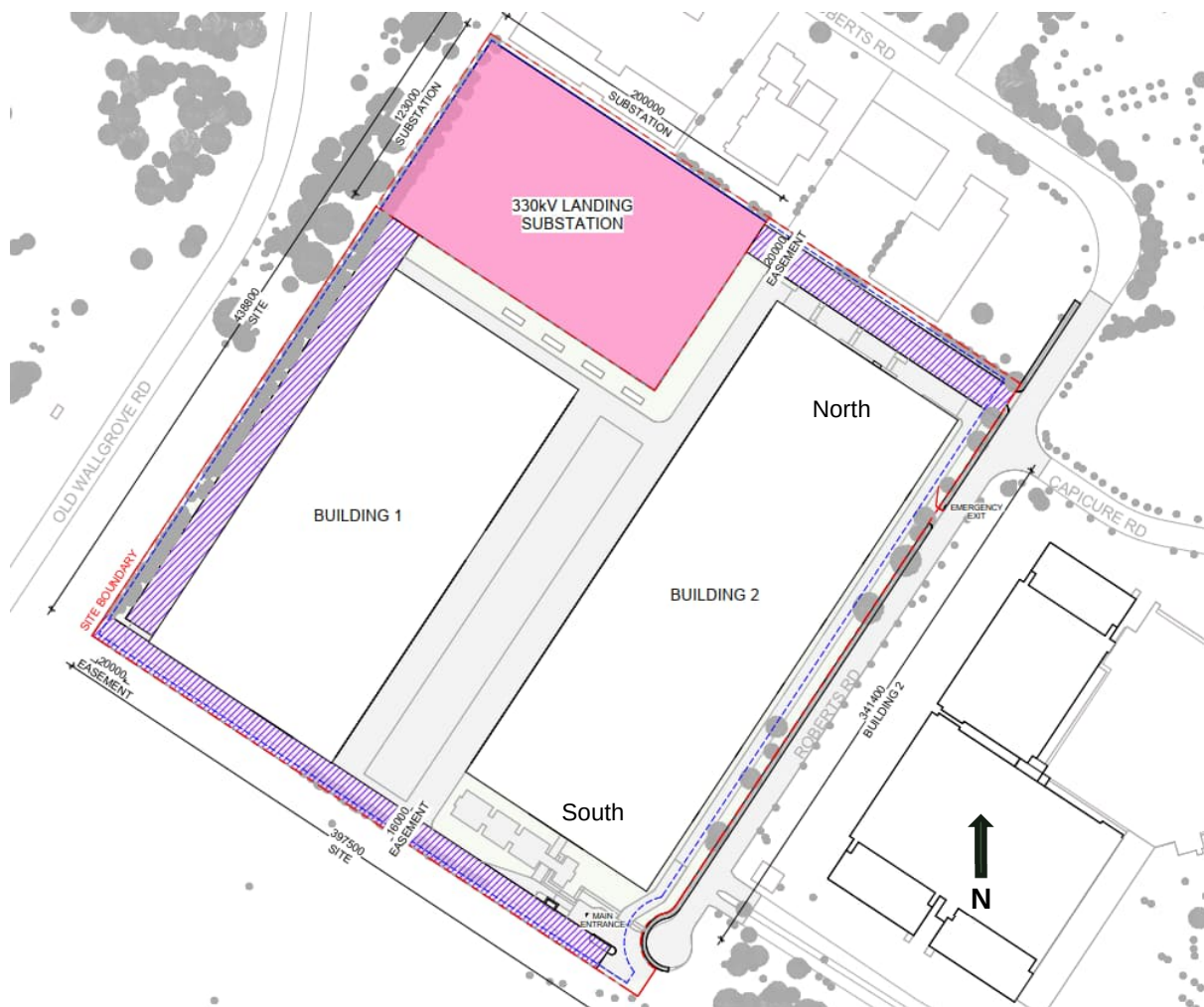


**Figure 2 - Building orientation**



## 3.0 Objectives

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

The specific objectives of this WMP are as follows:

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

## 4.0 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 should be retained by the building manager. Changes made to the WMP, as well as the reasons for the changes made, should be documented by the building manager as part of the review process.

## 5.0 Better Practice Waste Management and Recycling

### 5.1 Waste Management Hierarchy

This WMP has been prepared in line with the waste management hierarchy shown Figure 3, which 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.



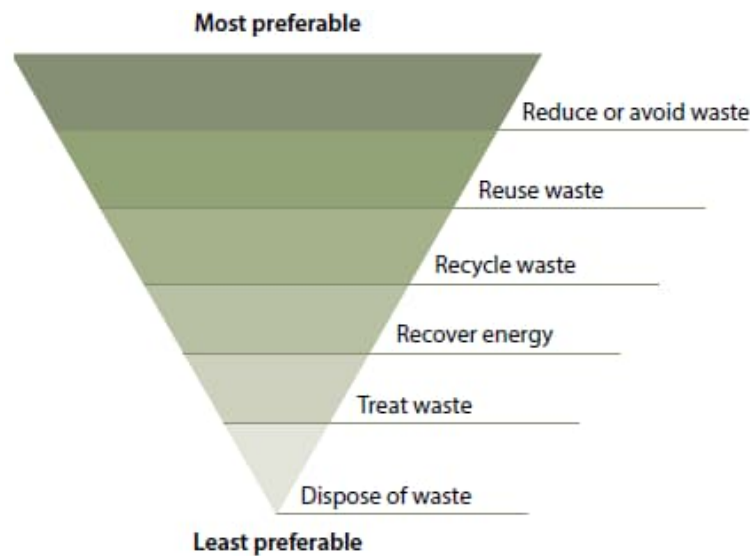


**Figure 3 - Waste Management Hierarchy**

*Image from NSW EPA (2014) NSW Waste Avoidance and Resource Recovery Strategy 2014-21.*

## 5.2 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.

## 6.0 Waste Specialist

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 from the University of Technology Sydney (2000), a Master of Environmental Studies from Macquarie University (2009) and has lectured in waste management at the University of NSW.

His experience includes preparing waste management plans for new developments, transfer station and resource recovery facility concept design and master planning, operational waste systems assessments, expert witness and due diligence for waste projects, waste chapters for EISs, waste 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. Those most relevant to this project include:

- For Goodman Property
  - o Project Apollo, Talavera Road Data Centre, Macquarie Park
  - o Project Mars, Mars Road Data Centre, Lane Cove West
  - o Project Duke, Kent Road Data Centre, Mascot
  - o Project Pluto, McCredie Road Data Centre, Smithfield
  - o Project EOS, Lanceley Place Data Centre, Artarmon
- For AW Edwards – AirTrunk Data Centre, Lane Cove
- For EMKC<sup>3</sup> Developments
  - o AirTrunk Data Centre, Huntingwood, two sites
  - o AirTrunk Data Centre, Lane Cove, two sites
- For ESR Australia – AirTrunk Data Centre, Blacktown
- For Digital Reality - Lockwood Road Data Centre, Erskine Park
- For Urbis - Canberra Data Centres, Eastern Creek
- For Lindsay Bennelong Developments - Gore Hill Data Centre.

## 7.0 Waste Legislation and Guidance

### 7.1 Blacktown DCP 2015

#### Part G Site Waste Management and Minimisation

##### ***Waste Storage room location***

*Waste storage areas should be located so that:*

- *They are convenient, safe, functional and directly accessible to users and servicing collection staff, but inaccessible to the public.*
- *They are integrated with the use, form and arrangement of the Development.*
- *Adverse impacts, such as odour and noise, are minimised to neighbouring properties and the streetscape.*
- *Servicing vehicles can enter and exit the premises in a forward direction.*
- *Servicing can be efficiently conducted without impeding general access in the Site.*
- *Access and the path for wheeling bins between storage and collection is level free from ramps and gradients.*
- *The area can accommodate general waste, comingled recycling and paper and cardboard bins together but with enough space to minimise cross-contamination, and*
- *Litter and contamination of the stormwater drainage system is avoided.*



## **Waste Storage area features**

*Waste storage areas should have the following features:*

- *Be constructed in accordance with the requirements of the National Construction Code 2016 (NCC) and ensuring impervious floors and ceilings, and fire safety and resistant provisions*
- *Suitable strength and geometric driveway design, to accommodate collection servicing vehicles*
- *Can accommodate a sufficient number of bins for the anticipated operational waste and recycling generated between collection services*
- *Have adequate spacing between bins to enable ease of servicing*
- *Have space to allow bulky waste*
- *Be accessible to all users*
- *Unobstructed, easy access to the waste collection point*
- *Have smoke detectors be installed in accordance with Australian Standards and connected to the fire prevention system of the building*
- *Path for wheeling bins between storage and collection is level, free from steps, and all gradients compliant with SafeWork NSW*
- *Flooring must be smooth and durable*
- *Flooring must be graded with an approved drainage outlet and sewer connection to Sydney Water*
- *Roof drainage must be funnelled to the stormwater system*
- *Equipped with a hot and cold tap-based water supply centralised mixing valve*
- *Hose cock must be protected from the waste bins and be located for easy accessibility when the area is filled with waste bins*
- *Doors or gates are to be durable and able to be opened from both inside and outside of the storage area*
- *Doors or gates must be wide enough to permit easy passage of waste and recycling bins*
- *Adequate signage*
- *Adequate vermin prevention*
- *Blend into the design of the wider development and be well-ventilated*
- *Not incorporate incinerators*
- *Have protection from weather conditions, including those which compromise the integrity of the bins and site, and*
- *Adequate security and is able to be locked.*

## **Waste Servicing**

*The collection point must be accessible for waste collection vehicles.*



*The following additional waste servicing access requirements should be implemented:*

- *Waste will be removed regularly*
- *The gradient of the waste and recycling storage rooms and any associated access ramps will be sufficiently level so that access for the purpose of emptying containers can occur in accordance with SafeWork NSW Workplace Health and Safety requirements, and*
- *Arrangements should be in place so that the waste and recycling storage rooms are not accessible to the general public.*

## **7.2 Blacktown City Council's guideline for waste management in new developments<sup>1</sup>**

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

*A waste management plan must accompany all development applications.*

*Applications must include scaled site and floor plans that clearly identify compliance with the specific requirements as identified in the matrix at Appendix 1. Additional information to assist you in completing your waste management plan can be found in Appendix 2.*

#### **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?**

*The details required in a waste management plan will vary across the different stages of development.*

##### **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*

---

<sup>1</sup> <https://www.blacktown.nsw.gov.au/files/assets/public/guideline-for-waste-management-in-new-developments.pdf>



- *proposed service provider*
- *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*
- *information on the bin tug and trolley equipment for the site (if required)*
- *specification sheets for all waste management equipment proposed for the site*
- *cleaning and maintenance schedules for all required waste equipment*
- *compliance measures with NSW Government regulations for activities generating hazardous, intractable or clinical waste.*

## **2.3 Generation rates**

*The number of bins for your development will be dictated by the generation rates listed below.*

### **2.3.2 Commercial and retail**

*The waste and recycling generation rates for various retail and commercial operations, as outlined in the EPA Better Practice Guide for Resource Recovery in Residential Developments 2019 (EPA Guide).*

*If the retail or commercial tenancies are not known at the development application stage, the rates for the largest waste and recycling generator permitted in the zoning of the proposed development, must be applied.*

## **2.4 Collection frequencies**

*Collection frequencies vary between service providers and development types and sizes as outlined below.*

### **2.4.3 Retail, commercial and industrial developments**

- *waste collected up to 5 times a week*
- *recycling collected up to 5 times a week*

*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.*

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

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

- *4 square metres for developments between 100 to 2000 square metres*
- *an additional 4 square metres is required for... every 20,000 square metres of office space.*



## 7.3 Other Legislation and Guidance

The legislation and guidance outlined in Table 3 below should be referred to during the demolition and construction phases of the Development.

**Table 3 Legislation and guidance**

| Legislation and Guidance                                                                                             | Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 2016                                                    | The National Construction Code 2016 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.                                                                                                                                                                                                                                                                                                                                                                                                           |
| 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                                                    | <p>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 waste that may be recovered for beneficial re-use. These waste typically include those from demolition and construction works, as well as operational waste such as food waste.</p> <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 <i>Waste Classification Guidelines</i> 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 <i>POEO Act 1997</i> and <i>POEO Amendment Act 2011</i> are administered by the NSW Environment Protection Authority (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 waste 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 provide detailed actions and guidance associated with the topics discussed in <i>Work Health and Safety Act 2011</i> . 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.                              |



| Legislation and Guidance                              | Objectives                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Waste Avoidance and Resource Recovery Act 2001</i> | <p>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:</p> <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/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 Demolition 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>2</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 demolition and construction stages of The Development.

### 8.2 Waste Streams and Classifications

The demolition and construction of the Development is likely to generate the following broad waste streams:

- Demolition waste
- Construction waste
- Plant maintenance waste
- Packaging waste, and
- Work compound waste from on-site employees.

A summary of likely waste types generated from demolition and construction activities, along with their waste classifications and proposed management methods, is provided in Table 4.

<sup>2</sup> <https://www.epa.nsw.gov.au/your-environment/waste/waste-overview/waste-performance-data>



**Table 4 Potential demolition and construction waste types, classifications and management methods**

| Waste Types                                                                                     | NSW EPA Waste Classification          | Proposed Management Method                                                                                                                                                |
|-------------------------------------------------------------------------------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Demolition 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                                                                                                                    |
| 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>3</sup>                                                                              |
| Paint                                                                                           | Liquid waste                          | Off-site recycling, Paintback collection <sup>4</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                                                                                                                                     |

<sup>3</sup> Available online from <http://www.fluorocycle.org.au/> or <http://www.environment.gov.au/settlements/waste/lamp-mercury.html>

<sup>4</sup> Available online from <https://www.paintback.com.au/>



| Waste Types                                                                                                                                                                                                                             | NSW EPA Waste Classification                                       | Proposed Management Method                                                                                                                     |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------|
| <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. Contact <i>Business Recycling</i> for more information <sup>5</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>6</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                                                                                                                           |
| <b>Plant Maintenance</b>                                                                                                                                                                                                                |                                                                    |                                                                                                                                                |
| Empty oil and other drums or containers, such as fuel, chemicals, paints, spill clean ups. Containers 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. Containers have been cleaned by washing or vacuuming.                                                                                        | General solid waste (non-putrescible)                              |                                                                                                                                                |
| Air filters and rags                                                                                                                                                                                                                    | General solid waste (non-putrescible)                              | Off-site disposal                                                                                                                              |
| Oil filters, drained                                                                                                                                                                                                                    | General solid waste (non-putrescible)                              | Off-site recycling                                                                                                                             |
| Lead-acid or nickel-cadmium batteries                                                                                                                                                                                                   | Hazardous waste                                                    | Off-site recycling, Contact the Australian Battery Recycling Initiative <sup>7</sup> for more information                                      |
| Other batteries                                                                                                                                                                                                                         | General solid waste (non-putrescible)                              |                                                                                                                                                |

For further information on how to classify a waste type refer to the NSW EPA (2014) *Waste Classification Guidelines*<sup>8</sup>. Further information on managing demolition and construction waste is available from the NSW EPA website<sup>9</sup>.

<sup>5</sup> Available online from <https://businessrecycling.com.au/>

<sup>6</sup> Available online from <http://returnandearn.org.au/>

<sup>7</sup> <http://www.batteryrecycling.org.au/home>

<sup>8</sup> Available online from <https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines>

<sup>9</sup> <http://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/construction-demolition>



## 8.3 Demolition Waste Types and Quantities

### 8.3.1 Demolition Waste Generation Rates

The BDCP does not provide any advice on demolition waste quantities. As an alternative, SLR has adopted the 'factory' and 'office' waste generation rates from *The Hills' Development Control Plan* (Hills DCP) for estimating the type and quantities of waste generated from demolition 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 waste demolition quantities.

The demolition waste generation rates used are shown in Table 5 below.

**Table 5 Demolition waste generation rates**

| Rate Type | Area (m <sup>2</sup> ) | Waste types and quantities (m <sup>3</sup> ) |                    |        |       |       |                  |                   |
|-----------|------------------------|----------------------------------------------|--------------------|--------|-------|-------|------------------|-------------------|
|           |                        | Timber/<br>Gyprock                           | Concrete           | Bricks | Metal | Other | Asphalt          | Granular<br>Base  |
| Factory   | 1,000                  | 4                                            | 448                | 205    | 23    | 18    |                  |                   |
| Office    | 1,000                  | 124                                          | 7,410              | 1,485  | 29    | 155   |                  |                   |
| Carpark   | 1,000                  |                                              | 22.5 <sup>10</sup> |        |       |       | 25 <sup>11</sup> | 100 <sup>12</sup> |
| Hardstand | 1,000                  |                                              | 30                 |        | 6     | 5     |                  |                   |

### 8.3.2 Buildings for Demolition

The demolition plan (ATL-GRM-XXX-XX-DG-AR-SSDA A01 0003) in Figure 4 below, shows the area of the existing warehouse to be demolished.

<sup>10</sup> Estimate of kerb profile

<sup>11</sup> 25 mm depth for passenger car parking areas of this size. *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* Australian Asphalt Pavement Association. Table 10 Passenger Car Parking Areas, 0-50 Bays

<sup>12</sup> 100 mm depth for passenger car parking areas of this size. *Light Duty Asphalt Pavements - Design, Specification and Construction 2002* Australian Asphalt Pavement Association. Table 10 Passenger Car Parking Areas, 0-50 Bays



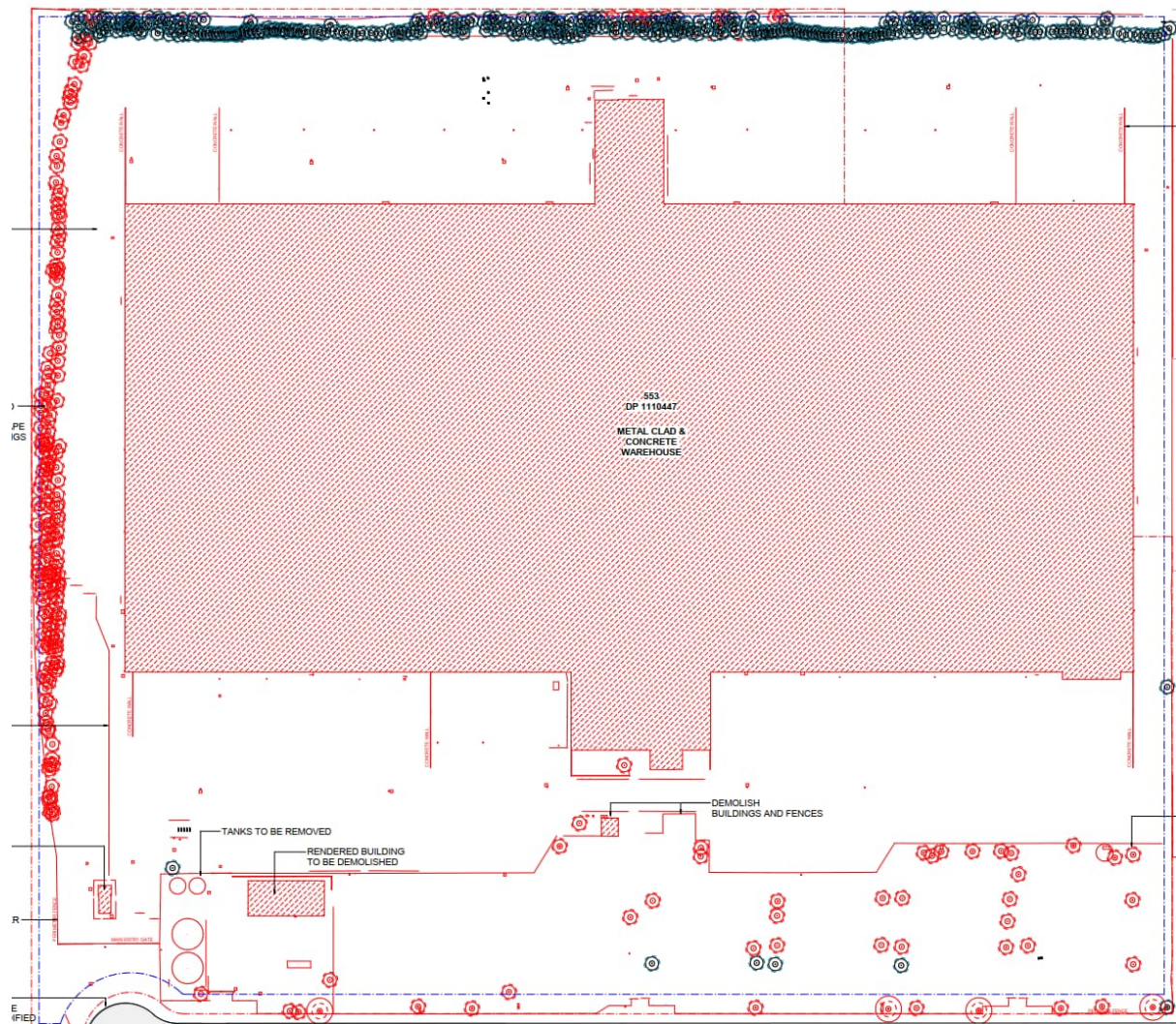


**Figure 4 - Demolition plan**

Images from Six Maps and Google Earth show the types of buildings currently on the site. The image from SixMaps (Figure 5) shows the current site layout with boundary and building types and has been used to calculate the areas of and car parking areas for demolition.





**Figure 5 - Current site layout**

The areas for demolition are shown in Table 6 along with estimates of the quantities of demolition waste that may be generated.

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

| Building     | Area (m <sup>2</sup> ) | Waste types and quantities (m <sup>3</sup> ) |              |            |            |            |           |                  |
|--------------|------------------------|----------------------------------------------|--------------|------------|------------|------------|-----------|------------------|
|              |                        | Timber/<br>Gyprock                           | Concrete     | Bricks     | Metal      | Other      | Asphalt   | Granular<br>Base |
| Warehouse    | 2,925                  | 12                                           | 1,310        | 600        | 67         | 53         | -         | -                |
| Hardstand    | 3,008                  | -                                            | 902          | -          | 180        | 150        | -         | -                |
| Car Park     | 798                    | -                                            | -            | -          | -          | -          | 24        | 100              |
| <b>Total</b> | <b>6,731</b>           | <b>12</b>                                    | <b>2,213</b> | <b>600</b> | <b>248</b> | <b>203</b> | <b>24</b> | <b>100</b>       |

## 8.4 Construction Waste Types and Quantities

The BDCP does not provide waste generation rates for construction activities. In the absence of readily available construction waste generation rates from Council, SLR has adopted the 'Office' waste generation rates from The Hills DCP for estimating the type and quantities of waste generated from construction of the Development.

The waste generation rates are shown in Table 7 below.



**Table 7 Construction waste generation rates**

| Rate Type | Per Floor Area (m <sup>2</sup> ) | Waste types and quantities (m <sup>3</sup> ) |          |        |         |              |       |       |
|-----------|----------------------------------|----------------------------------------------|----------|--------|---------|--------------|-------|-------|
|           |                                  | Timber                                       | Concrete | Bricks | Gyprock | Sand or Soil | Metal | Other |
| Office    | 1,000                            | 5.1                                          | 18.8     | 8.5    | 8.6     | 8.8          | 2.75  | 5     |

These waste generation rates are used to estimate the waste generated from the construction of the Development. The anticipated construction waste quantities for the Development are shown in Table 8 below and are based on the building areas shown on the drawing *ATL-GRM-XXX-XX-DG-AR-SSDA A03 0000.A\_GENERAL ARRANGEMENT PLAN - GROUND FLOOR - SSDA.pdf*.

The construction waste quantities anticipated are shown in Table 8 below.

**Table 8 Estimated types and quantities of construction waste**

| Area         | GFA (m <sup>2</sup> ) | Waste types and quantities (m <sup>3</sup> ) |            |            |            |               |             |            |
|--------------|-----------------------|----------------------------------------------|------------|------------|------------|---------------|-------------|------------|
|              |                       | Timber                                       | Concrete   | Bricks     | Gyprock    | Sand and Soil | Metal       | Other      |
| Building 1   | 66,617                | 34                                           | 125        | 57         | 57         | 59            | 18          | 33         |
| Building 2   | 172,529               | 88                                           | 324        | 147        | 148        | 152           | 47          | 86         |
| <b>Total</b> | <b>239,146</b>        | <b>122</b>                                   | <b>450</b> | <b>203</b> | <b>206</b> | <b>210</b>    | <b>65.8</b> | <b>120</b> |

## 8.5 Waste Avoidance

In accordance with better practice waste management, the Building Contractor, Building Designer and/or equivalent roles should:

- Develop a purchasing policy based on the approximate quantities of materials to be used so that the correct quantities are purchased.
- Arrange for delivery of materials on an 'as needed' basis to avoid material degradation through weathering and moisture damage.
- Communicate strategies to handle and store waste to minimise environmental, health and amenity impacts.
- Select materials with a low environmental impact over the lifecycle of the building.
- Choose timber from certified plantations and avoid unsustainable timber imports including western red cedar, oregon, meranti, luan or merbau.
- Use leased equipment rather than purchase and disposal.
- Minimise site disturbance and unnecessary excavation.
- Incorporate existing trees and shrubs into the landscape plan.
- Grouping wet areas together to minimise the amount of pipe work required.
- Design the Development to require standard material sizes or make arrangements with manufacturing groups for the supply of non-standard material sizes.
- Design works for de-construction.
- Reduce packaging waste by:



- o Returning packaging to suppliers where practicable to reduce waste further along the supply chain
- o Purchasing in bulk
- o Requesting cardboard or metal drums rather than plastics
- o Requesting metal straps rather than shrink wrap, and
- o Using returnable packaging such as pallets and reels.
- Use prefabricated materials.
- Select materials for Development works with low embodied energy properties or materials that have been salvaged or recycled for the construction of the Development including concrete that utilises slag and fly ash content, structural and reinforced steel that uses recycled steel content or bulk insulation products that contain recycled content, such as recycled glass in glass-wool.
- Preferentially use paints, floor coverings and adhesives with low VOC (volatile organic compound) content.
- Reduce the use of polyvinyl chloride products.
- Implement measures to prevent the occurrence of windblown litter, dust and stormwater pollution.
- Ensure subcontractors are informed of and implement site waste minimisation and management procedures.

## 8.6 Reuse, Recycling and Disposal

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

Refer to Table 4 for an outline of the proposed reuse, recycling and disposal methods for potential demolition and construction waste streams generated by the Development.

In accordance with best practice waste management, the following specific procedures should be implemented:

- Ensure the site's Development management of the site includes minimising waste generation, requiring the appropriate storage and timely collection of waste materials, and maximising re-use or recycling of materials.
- Store wastes on site appropriately to prevent cross-contamination and guarantee the highest possible re-use value.
- Consider the potential of any new materials to be re-used and recycled at the end of the Development's life.
- Determine opportunities for the use of prefabricated components and recycled materials.
- Strip topsoil from areas designated for excavation and store it on site for reuse.
- Reuse excavation material will be on-site where possible.
- Re-use formwork where appropriate.



- Retain roofing material cut-offs for re-use or recycling.
- Retain used crates for storage purposes unless damaged.
- Recycle cardboard, glass and metal wastes.
- Recycle or dispose of solid waste timber, brick, concrete, asphalt and rock, where such waste cannot be re-used on site, to an appropriately licenced construction and demolition waste recycling facility or an appropriately licenced landfill.
- Dispose of all asbestos and/or hazardous wastes in accordance with SafeWork NSW and NSW EPA requirements.
- Deliver batteries and fluorescent lights to drop off-site recycling facility.
- Return excess materials and packaging to the supplier or manufacturer.
- Dispose of all garbage via a council approved system.

## **8.7 Waste Storage and Servicing**

### **8.7.1 Waste Segregation and Storage**

Waste materials produced from demolition and construction activities should be separated at the source and stored separately on-site. It is anticipated that the Development will provide enough space on-site for separate storage, 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 segregation of waste types, the Site Manager, or equivalent role, should consult with the waste and recycling collection contractor to confirm which waste types may be co-mingled prior to removal from the site.

### **8.7.2 Waste Storage Areas**

Waste storage areas will be accessible and allow enough 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 are to 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 the waste does not fall, blow, wash or otherwise escape from the site. Waste containers and storage areas are to be kept clean and in a good state of repair.

Areas designated for waste storage should:

- Allow unimpeded access by site personnel and waste disposal contractors
- Consider 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 enough 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, accessibility and convenience in their selection, and
- Not present hazards to human health or the environment.

### **8.7.3 Waste Servicing and Record Keeping**

The Site Manager or equivalent role is to:

- 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 hours approved by Council.

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



## 8.8 Site Inductions

All staff, including sub-contractors and labourers, employed during the demolition and construction phases of the Development must undergo induction training regarding waste management for the Site.

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

It is the responsibility of the Site Manager or Building Contractor to notify Council of the appointment of waste removal, transport or disposal contractors.

## 8.9 Signage

Standard signage is to be posted in all waste storage and collection areas. All waste containers should 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 should be used where applicable. A selection of signs prepared by NSW EPA is provided in Figure 6.



Figure 6 - Examples of NSW EPA labels for waste skips and bins

<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>



## 8.10 Monitoring and Reporting

The following monitoring practices are to be undertaken to improve demolition 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 Resource Recovery Management Plans.

Records of waste quantities recycled, reused or contractor removed should be maintained. This can include dockets or receipts verifying recycling and disposal in accordance with this WMP. This evidence should also be presented to regulatory bodies when required.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists and logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits are to be carried out by the Building Contractor 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 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 Building Contractor to implement the WMP, and an employee and subcontractor responsibility to ensure that they always comply with the WMP.

Where possible, an environmental management representative should be appointed for the Development. Suggested roles and responsibilities are provided in Table 9.

**Table 9 Suggested demolition and construction waste management roles and responsibilities**

| Responsible Person        | General Tasks                                                                                                                                                                                                                                                                |
|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Construction Site Manager | Ensuring plant and equipment are well maintained.                                                                                                                                                                                                                            |
|                           | Ordering only the required amounts of materials.                                                                                                                                                                                                                             |
|                           | Keeping materials segregated to maximise reuse and recycling.                                                                                                                                                                                                                |
|                           | Ultimately responsible for routinely checking waste sorting and storage areas for cleanliness, hygiene and safety issues, contaminated waste materials, and also ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP. |
|                           | Approaching and establishing the local commercial reuse of materials where reuse on-site is not practical.                                                                                                                                                                   |



| Responsible Person                                     | General Tasks                                                                                                                   |
|--------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| Construction<br>Environmental<br>Manager or equivalent | Establishing separate skips and recycling bins for effective waste segregation and recycling purposes.                          |
|                                                        | Ensuring staff and contractors are aware of site requirements.                                                                  |
|                                                        | Provision of training of the requirements of the WMP and specific waste management strategies adopted for the Development.      |
|                                                        | Contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements. |
|                                                        | Approval of off-site waste disposal locations and checking licensing requirements.                                              |
|                                                        | Assessment of suspicious potentially contaminated materials, hazardous materials and liquid wastes.                             |
|                                                        | Monitoring, inspection and reporting requirements.                                                                              |

Daily visual inspections of waste storage areas may be delegated to other on-site staff. All subcontractors will be responsible for ensuring that their work complies with the WMP through the project induction and contract engagement process.

## 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, for example, lunch 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.

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



Potential waste types, their associated waste classifications, and management methods are provided in Table 10. For further information on how to determine a waste's classification, refer to the NSW EPA *Waste Classification Guidelines* 2014. Recycling drop-off locations and contacts can be found on <https://businessrecycling.com.au/> for each waste type.

**Table 10 Potential operational waste types, classifications and management methods**

| 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                                       | Waste transported to licensed recycling facility by licensed contractor. Off-site recycling, Contact the Australian Battery Recycling Initiative <sup>15</sup> for more information |
| Lithium-ion batteries                                                                 |                                                       |                                                                                                                                                                                     |
| Other batteries                                                                       |                                                       |                                                                                                                                                                                     |
| 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, see Section 9.7.2                                                                                                                                               |
| 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                                                                        |

### 9.3 Waste quantities

For estimating the type and quantities of waste generated from the operational activities of the Development, SLR has adopted the 'Offices' and 'Café' waste generation rates from the EPA Guide, which is preferred by Council.

The operational waste generation rates used are shown below in Table 11.

**Table 11 Operational waste generation rates**

| Type of Premises                                                                                        | EPA Guide Waste Premises Type | General Waste Generation (L/100 m <sup>2</sup> /day) | Recycling Generation (L/100 m <sup>2</sup> /day) |
|---------------------------------------------------------------------------------------------------------|-------------------------------|------------------------------------------------------|--------------------------------------------------|
| Offices, reception, meeting rooms, admin, staging <sup>19</sup> , NOC <sup>20</sup> , SOC <sup>21</sup> | Offices                       | 10                                                   | 15                                               |
| Kitchen/Breakroom                                                                                       | Café                          | 100                                                  | 120                                              |

Using the waste generation rates in Table 11 above, the approximate weekly waste quantities for the Development have been calculated. The operational waste quantities were calculated based on the assumptions below:

- The floor areas shown in the drawings in *ATL-GRM-XXX-XX-DG-AR-SSDA A03 0000.A\_GENERAL ARRANGEMENT PLAN - GROUND FLOOR - SSDA.pdf*

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

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

<sup>19</sup> Staging rooms are intermediate areas used to unpack, assemble, configure and test new IT equipment before it is moved into the main, sensitive data hall. Use of a staging room helps minimise contamination from dust and debris, and disruption in the live environment and acts as a buffer for preparing hardware, installing modules and performing initial power-up tests, ensuring everything is ready for deployment.

<sup>20</sup> NOC - Network Operations Centre - the central command hub where IT teams use specialised tools and video walls to monitor, manage and troubleshoot infrastructure to ensure high availability, performance and security. The NOC is the first line of defence against outages and disruption.

<sup>21</sup> SOC - Security Operations Centre - a dedicated physical facility where a specialised team of security professionals monitors the organisation's entire IT infrastructure to detect, analyse and respond to cyber threats. It serves as the command centre for cybersecurity defences.



- A week comprising seven days of operation.
- 95% of the office recycling stream is paper and cardboard and 5% is recyclable containers.<sup>22</sup>
- 69% of the office recycling stream is paper and cardboard and 31% is recyclable containers.<sup>23</sup>

The quantities of operational waste estimated to be generated by each data centre at the Development are shown in Table 12, Table 13 and Table 14 below.

**Table 12 Estimated quantities of operational waste and recycling – Building 1**

| Level        | Area                           | GFA (m <sup>2</sup> ) | Litres per day |            | Litres per week |                     |                       |
|--------------|--------------------------------|-----------------------|----------------|------------|-----------------|---------------------|-----------------------|
|              |                                |                       | Garbage        | Recycling  | Garbage         | Paper and Cardboard | Recyclable Containers |
| Ground       | Reception                      | 69                    | 6.9            | 10.4       | 48              | 69                  | 3.6                   |
| Ground       | Staging                        | 177                   | 18             | 27         | 124             | 177                 | 9                     |
| Ground       | Admin ES                       | 43                    | 4              | 6          | 30              | 43                  | 2                     |
| Ground       | NOC                            | 117                   | 12             | 18         | 82              | 117                 | 6                     |
| Ground       | SOC                            | 97                    | 10             | 15         | 68              | 97                  | 5                     |
| Ground       | Goodman FM Office and Workshop | 104                   | 10             | 16         | 73              | 104                 | 5                     |
| Ground       | Reception/Meeting Room         | 22                    | 2              | 3          | 15              | 16                  | 7                     |
| Level 1      | Office                         | 600                   | 60             | 90         | 420             | 599                 | 32                    |
| Level 1      | MV TC and Admin                | 24                    | 2              | 4          | 17              | 24                  | 1                     |
| Level 1      | Kitchen/Breakroom              | 94                    | 94             | 113        | 658             | 547                 | 243                   |
| <b>Total</b> |                                | <b>1,347</b>          | <b>219</b>     | <b>301</b> | <b>1,535</b>    | <b>1,791</b>        | <b>315</b>            |

**Table 13 Estimated quantities of operational waste and recycling – Building 2 South**

| Level        | Area                                 | GFA (m <sup>2</sup> ) | Litres per day |            | Litres per week |                     |                       |
|--------------|--------------------------------------|-----------------------|----------------|------------|-----------------|---------------------|-----------------------|
|              |                                      |                       | Garbage        | Recycling  | Garbage         | Paper and Cardboard | Recyclable Containers |
| Ground       | Reception and Reception Meeting Room | 60                    | 6.0            | 9.0        | 42              | 60                  | 3.2                   |
| Ground       | Staging                              | 296                   | 30             | 44         | 207             | 295                 | 16                    |
| Ground       | NOC                                  | 119                   | 12             | 18         | 83              | 119                 | 6                     |
| Ground       | SOC                                  | 93                    | 9              | 14         | 65              | 93                  | 5                     |
| Ground       | Office                               | 450                   | 45             | 67         | 315             | 449                 | 24                    |
| Ground       | MV TC + Admin                        | 59                    | 6              | 9          | 42              | 59                  | 3                     |
| Ground       | Goodman FM Office and Workshop       | 131                   | 13             | 20         | 92              | 131                 | 7                     |
| Ground       | Kitchen/Breakroom                    | 68                    | 68             | 82         | 476             | 396                 | 176                   |
| <b>Total</b> |                                      | <b>1,276</b>          | <b>189</b>     | <b>263</b> | <b>1,322</b>    | <b>1,601</b>        | <b>239</b>            |

<sup>22</sup> Industry fact sheets - Commercial offices EPA 2012/0341 November 2012 ISBN 978-1-74293-876-9

<sup>23</sup> Reducing business waste – Cafés and restaurants ISBN 978-1-76039-630-5 | EPA 2016/0773 March 2017



**Table 14 Estimated quantities of operational waste and recycling – Building 2 North**

| Level        | Area                                 | GFA (m <sup>2</sup> ) | Litres per day |            | Litres per week |                     |                       |
|--------------|--------------------------------------|-----------------------|----------------|------------|-----------------|---------------------|-----------------------|
|              |                                      |                       | Garbage        | Recycling  | Garbage         | Paper and Cardboard | Recyclable Containers |
| Ground       | Reception and Reception Meeting Room | 60                    | 6.0            | 9.0        | 42              | 60                  | 3.2                   |
| Ground       | Staging                              | 296                   | 30             | 44         | 207             | 295                 | 16                    |
| Ground       | NOC                                  | 119                   | 12             | 18         | 83              | 119                 | 6                     |
| Ground       | SOC                                  | 93                    | 9              | 14         | 65              | 93                  | 5                     |
| Ground       | Office                               | 450                   | 45             | 67         | 315             | 449                 | 24                    |
| Ground       | MV TC and Admin                      | 59                    | 6              | 9          | 42              | 59                  | 3                     |
| Ground       | Goodman FM Office and Workshop       | 131                   | 13             | 20         | 92              | 131                 | 7                     |
| Ground       | Kitchen/Breakroom                    | 68                    | 68             | 82         | 476             | 396                 | 176                   |
| <b>Total</b> |                                      | <b>1,276</b>          | <b>189</b>     | <b>263</b> | <b>1,322</b>    | <b>1,601</b>        | <b>239</b>            |

## 9.4 Waste Storage Area Size

### 9.4.1 Garbage and Recycling Bins

The waste storage areas 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 rear lift waste collection service is the most likely using 240 L bins and these have been assumed when calculating bin numbers and storage space.

All waste storage area calculations have used the bin dimensions listed in the EPA Guide, as shown in Table 15.

**Table 15 Dimensions and approximate footprint of bins**

| Bin Capacity | Height (mm) | Depth (mm) | Width (mm) | Footprint (m <sup>2</sup> ) |
|--------------|-------------|------------|------------|-----------------------------|
| 240 L        | 1080        | 735        | 580        | 0.43                        |

To allow for ready movement of bins into and out of the bin storage area, the bin storage area is to provide a floor area of at least 200% of the total minimum bin footprint. This can also act as a contingency in the event of spikes in waste generation. This has been considered in the calculation of the waste storage area for each of the units in the Development.

The estimated number of bins required for weekly storage of operational waste and recycling generated by each data centre at the Development are shown in Table 16 below, and are based on:

- The estimated quantities of operational waste and recycling shown in Table 12, Table 13 and Table 14
- Bin dimensions from the EPA Guide shown in Table 15.



**Table 16 Recommended number of bins and storage areas**

| Building         | Bin Capacity (L) |                     |                       | Collections per Week |                     |                       | Number of Bins |                     |                       | Bin Storage Area Required (m <sup>2</sup> ) |                     |                       |       |                             |
|------------------|------------------|---------------------|-----------------------|----------------------|---------------------|-----------------------|----------------|---------------------|-----------------------|---------------------------------------------|---------------------|-----------------------|-------|-----------------------------|
|                  | Garbage          | Paper and Cardboard | Recyclable Containers | Garbage              | Paper and Cardboard | Recyclable Containers | Garbage        | Paper and Cardboard | Recyclable Containers | Garbage                                     | Paper and Cardboard | Recyclable Containers | Total | Total Including Manoeuvring |
| Building 1       | 240              | 240                 | 240                   | 2                    | 2                   | 1                     | 4              | 4                   | 2                     | 1.7                                         | 1.7                 | 0.9                   | 4.3   | 8.5                         |
| Building 2 South | 240              | 240                 | 240                   | 2                    | 2                   | 1                     | 3              | 4                   | 1                     | 1.3                                         | 1.7                 | 0.4                   | 3.4   | 6.8                         |
| Building 2 North | 240              | 240                 | 240                   | 2                    | 2                   | 1                     | 3              | 4                   | 1                     | 1.3                                         | 1.7                 | 0.4                   | 3.4   | 6.8                         |

The recommended storage areas in Table 16 do not include storage of bulky waste. For additional storage space for bulky waste, refer to Section 9.5.

## 9.5 Bulky Waste

Bulky waste includes waste materials that, because of their size and shape, may be difficult to dispose of in the garbage or recycling bins. Council's Guideline says that bulky waste is *large bulky items like lounges, fridges, furniture, mattresses, pallets or whitegoods* but can also include damaged, disused or obsolete materials. The BDCP says that *4 square metres* of bulky waste storage space should be allowed *for developments between 100 to 2000 square metres*. As shown in Table 11, each data centre in this development has less than 2000 m<sup>2</sup> of office space, so only 4 m<sup>2</sup> of bulky waste storage is proposed to be provided for in each case.

## 9.6 Space allowed for waste storage

In addition to the recommended waste storage area shown in Table 16, the total waste storage area recommended for the Development is shown in Table 17 below. The drawings show one waste storage room on the ground floor of Building 1 and two waste storage rooms on the ground floor of Building 2, one at the north end and one at the south. The sizes of these waste storage rooms are also shown in Table 17 below.

**Table 17 Total recommended waste storage areas**

| Building         | Recommended Storage Area (m <sup>2</sup> ) |             |                    | Waste Storage Area Allowed (m <sup>2</sup> ) |
|------------------|--------------------------------------------|-------------|--------------------|----------------------------------------------|
|                  | Waste and Recycling Bins                   | Bulky waste | Total Storage Area |                                              |
| Building 1       | 8.5                                        | 4           | 12.5               | 30                                           |
| Building 2 South | 6.8                                        | 4           | 10.8               | 52                                           |
| Building 2 North | 6.8                                        | 4           | 10.8               | 52                                           |

In the case of all three rooms, there is more than enough space to contain the number of bins



proposed and space for bulky waste as well.

The locations of the rooms adjacent to the loading docks are satisfactory. Building 1 is shown in Figure 7 and Building 2 in Figure 8 below.



Figure 7 – Building 1 loading dock and waste room location





**Figure 8 – Building 2 loading dock and waste room with heavy vehicle access**

## **9.7 Other waste management arrangements**

### **9.7.1 Office waste management**

The waste management system proposed for office areas will consist of centrally located bins for garbage, recyclable containers, paper, printer cartridges and secure paper destruction.

Bins for garbage and recyclable containers will be located in kitchen areas. Bins for separated food waste may also be provided if there are sufficient quantities. Bins for paper, printer cartridges and secure paper will be located in print rooms or near printers. The precise locations will be determined during the design development stage for the office fit out.

Strategies described in Section 9.11 Waste Avoidance, Reuse and Recycling and Section 9.13 Signage, will also be employed including:



- Use of consistent signage
- Use of Australian Standard colour coding for bins
- Ensuring staff are informed of correct waste separation and management procedures
- Provision of directional signage to show locations and routes to waste storage areas
- Provision of educational signage to show how the system works
- Clearly labelled bins to reduce contamination and identify waste types for each bin.

### 9.7.2 E-waste

Although the data halls are not expected to regularly produce much waste, from time-to-time significant quantities of e-waste will be generated. E-waste may include broken or upgraded computer hardware, circuits and electrical components and their associated packaging. Some e-waste contains toxic chemicals, such as lead, mercury and arsenic, but can also contain precious metals that can be recycled.

A 348 MW data centre like that proposed could, over its life time, generate the quantities of materials from e-waste shown in Table 18 below.<sup>24</sup>

**Table 18 Life time quantities of materials**

| Material  | Quantities (t) |
|-----------|----------------|
| Plastics  | 5,209          |
| Aluminium | 11,523         |
| Steel     | 59,510         |

Where possible, facility operators will extend the life of equipment and hardware by implementing a regular maintenance schedule and adopting other proactive care measures such as monitoring the efficiency of cooling solutions to reduce the risk of equipment being discarded before its time. Smart thermostats and in-built sensors may be used to balance temperature maintenance with energy efficiency.

Equipment will be re-used by implementing circular models for servers, and re-purposing older hardware as back-up equipment.

Disposal of e-waste will be the responsibility of equipment suppliers who will collect obsolete equipment when new equipment is installed. Bulk bins, or other methods for transporting large quantities of e-waste, will be used at those times to remove it. Suppliers will use the loading dock as required. Once removed from the site it is expected that suppliers will sell-on any suitable hardware or recycle it lawfully through an approved recycler.

## 9.8 Batteries

### 9.8.1 Quantities

Table 19 shows the number and weight of battery racks installed at any one time.

<sup>24</sup> <https://www.simslifecycle.com/resources/white-paper-data-center/>



**Table 19 Number and weight of battery racks**

| Building | Number of Battery Racks | Weight of Battery Racks (t) |
|----------|-------------------------|-----------------------------|
| 1        | 1,085                   | 1,052.5                     |
| 2        | 2,002                   | 1,941.9                     |

During the life of the data centre, battery replacement is expected to occur at strategic points to address degradation and maximise the operating life of the data centre.

### 9.8.2 Legislative Requirements

Recently, battery recycling stewardship was mandated under the NSW *Product Lifecycle Responsibility Act 2025*, which was passed on 28 March 2025. This new legislation requires battery suppliers to take responsibility for the entire lifecycle of the products, including safe collection, reuse and recycling.

During battery replacement events, it is anticipated that heavy vehicles, including oversize and/or overmass vehicles and cranes, may be required.

In September 2025 waste lithium-ion batteries were added to the definition of hazardous waste, under the *Protection of the Environment Operations Act 1997*.<sup>25</sup>

Lithium-ion batteries are also classified as Class 9 Dangerous Goods, due to the risk of fire and explosion. They are subject to specific transport rules under the Australian Dangerous Goods Code.

### 9.8.3 Recovery Facilities

As well as batteries, associated infrastructure, such as cabling, inverters, transformers and other electrical and structural components may also be generated. These all have significant salvage value and will be recovered.

Table 20 below lists lithium-ion battery recycling facilities.

**Table 20 Battery Recycling Facilities**

| Facility Name                                                                           | Distance (km) | Approximate Travel Time (minutes) |
|-----------------------------------------------------------------------------------------|---------------|-----------------------------------|
| Envirostream Battery Recycling Facility - 17-19 Maria Street, Laverton North, Victoria  | 860           | 8 hours 30 minutes                |
| Ecocycle Recovery and Recycling and EcoBatt - 5-11 Reo Crescent Campbellfield, Victoria | 825           | 8 hours 10 minutes                |
| Ecocycle facility under construction in Brisbane                                        | 926           | 9 hours, 35 minutes               |

<sup>25</sup> <https://www.epa.nsw.gov.au/Licensing-and-Regulation/Legislation-and-compliance/whats-new-in-law>



#### 9.8.4 Waste Tracking

Hazardous waste must be tracked during transport and disposal in NSW.<sup>26</sup> The list of waste types that require tracking is outlined in Schedule 1 of the Protection of the Environment (Waste) Regulation 2014.<sup>27</sup> Lithium-ion batteries are classified as hazardous waste.

The waste producer, its authorised agent, transporter and receiving facility manager, are all responsible for ensuring that the waste is properly tracked. Waste producers include businesses such as construction companies and manufacturing industries that generate hazardous waste. They must ensure that hazardous waste is:

- Correctly characterised
- Properly transported
- Confirm that the receiving facility is legally permitted to accept the waste.
- Fully tracked in accordance with Part 4 of the Protection of the Environment (Waste) Regulation 2014.
- Follow the correct process depending on whether an authorised agent is used or not.

Producers may appoint an authorised agent, provided:

- The agent is approved by the EPA, and
- There is a written agreement between the producer and the agent.

If a producer manages its own waste tracking, it must:

- Apply for access to the EPA's online waste tracking system
- Obtain a consignment authorisation from the receiving facility.
- Create a transport certificate for each load
- Ensure the transporter is licensed or legally authorised.
- Provide the completed transport certificate to the transporter.
- Check the EPA public register for licensed transporters.

To transport hazardous waste interstate or overseas, producers must:

- Determine which types of waste require tracking for interstate transport.
- Use the EPA's online waste tracking system to create and manage tracking records.
- Obtain a consignment authorisation from the approved receiving facility in NSW.

If the waste is taken to another receiving facility in another state or territory, the waste producer should contact the relevant state or territory environmental agency.

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<sup>26</sup> <https://www.epa.nsw.gov.au/Your-environment/Waste/tracking-transporting-hazardous-waste/waste-must-tracked>

<sup>27</sup> <https://www.epa.nsw.gov.au/licensing-and-regulation/legislation-and-compliance/acts-administered-by-the-epa/regulation-summaries#poeow>



## **9.9 Management of bins and waste storage area**

Cleaners will be engaged to empty bins in office areas and maintain the waste storage areas and the bins within used to store waste and recyclables in clean and good condition,

## **9.10 Waste Vehicle Access**

The following access provisions will apply for collections:

- Collection vehicles will be able to enter and exit the site in a forward direction
- Unobstructed access, adequate driveways and ramps of sufficient strength to support waste collection vehicle have been allowed for.

Waste collection contractors will take bins from the waste storage room to the loading dock where they will be emptied into the collection vehicle and then returned to the waste storage room.

The collection frequency proposed in Table 16 but may be subject to change depending on negotiations between the facility operators and a waste contractor.

## **9.11 Waste Avoidance, Reuse and Recycling**

### **9.11.1 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.

### **9.11.2 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.

### **9.11.3 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.

## 9.12 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 Facility Manager:

- 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.

## 9.13 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.

All bin signage should also follow the NSW EPA's standard signage.

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 9 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.



Figure 9 - Example NSW EPA labels for ongoing waste

## 9.14 Roles and Responsibilities

It is the responsibility of the Facility Manager, 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. A summary of recommended roles and responsibilities are provided in Table 21.



**Table 21 Suggested operational waste-related roles and responsibilities**

| Responsible Person                  | General Tasks                                                                                                                                                                                                        |
|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Facility Manager or equivalent role | Ensure the WMP is implemented throughout the life of the development.                                                                                                                                                |
|                                     | 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 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.                                                                                                              |
|                                     | 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             | Transfer general waste and recyclables from offices and other areas to the waste and recycling storage areas each day or as required.                                                                                |
|                                     | Maintain and operate compactors and balers, if installed, and ensure no overfilling occurs.                                                                                                                          |
|                                     | Cleaning of all bins and waste and recycling area as per the direction of the site manager, or equivalent role.                                                                                                      |
|                                     | 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.                                                                                                                                                                          |
| Staff                               | Place waste, recyclables, cardboard waste in bins and store in designated waste storage area.                                                                                                                        |
|                                     | Adhere to all waste management directions and comply with the Development's waste management provisions as outlined by the Facility Manager.                                                                         |

## 10.0 Assessment and findings

The WMP establishes that during ongoing operation of the data centre, four collections for waste and paper and cardboard and one for recyclable containers will be provided per week. This amounts to five vehicle movements per week.

The WMP also establishes that the amount of space allowed for waste and recycling on-site is more than adequate to store the amounts projected to be generated.



## 11.0 Compliance with the BDCP

The waste management requirements of the BDCP 2023 are detailed in Sections 7.1 and 7.2 above. As far as it is possible to say, based on the proposed plans, the development complies with the DCP, other than the following:

### 2.2.2 Occupancy

- *proposed service provider*

The waste service provider is not yet known.

- *information on the bin tug and trolley equipment for the site (if required)*

No bin tug is proposed

- *specification sheets for all waste management equipment proposed for the site*

No equipment other than bins is proposed.

## 12.0 Cumulative impacts

The projected quantities of waste and recyclables, 9,954 L each per week, are insignificant compared to the quantities of waste and recyclables generated in Sydney every day. Allowance has been made for the separation of recyclables as much as possible, guided by the waste generation rates in the EPA Guide. It is possible that further separation and recovery of waste materials will be made during the operational phase of the development.

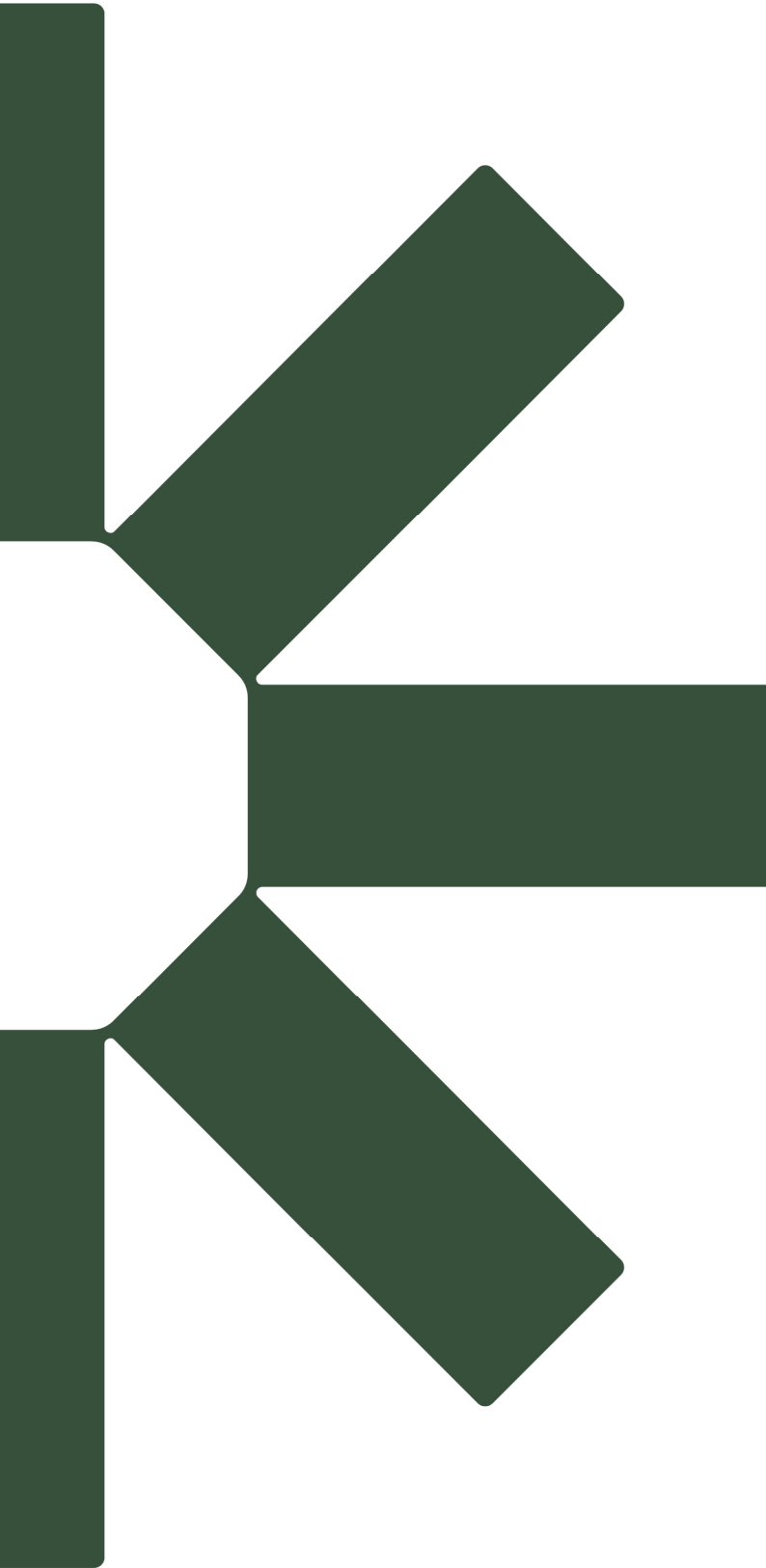
The five waste and recycling vehicle movements anticipated to be required each week are insignificant compared to the number of vehicle movements undertaken in this industrial area every day.

In addition, the Eastern Creek Waste Management Centre is about less than 3 km away and the Bingo Eastern Creek waste facility is less than 5 km away. These waste facilities are visited by thousands of large and small vehicles delivering waste, recyclables and organics every week. It is likely that the vehicles collecting waste and recyclables at the data centre will dispose of them at either of these facilities and may have been passing by Wallgrove Road on the way to these sites, whether the data centre was there or not. As a result, the number of waste collection vehicles travelling in the vicinity of the data centre will not be affected by its development.

## 13.0 Mitigation measures

As the waste-related impact of the data centre is zero or negligible, no mitigating measures are proposed beyond those for the separation of recyclables already detailed.





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