



Charter Hall

Waste Management Plan

149-155 Airids Road Minto NSW

16 November 2023

63052/ 147,738 (Rev E)

JBS&G Australia Pty Ltd

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1. Introduction

JBS&G Pty Ltd (JBS&G) has been engaged by Charter Hall Holdings Pty Ltd (the client) to prepare a Waste Management Plan (WMP) as part of a development application (DA) for the redevelopment of 149-155 Airds Road, Minto NSW (the site) into two warehouse buildings (the Proposal).

The site is currently occupied by existing industrial warehouse buildings, associated offices and a carpark area. The site is legally identified as part Lot 12 in DP 251997 (part of 149 Airds Road), Lot 131 in DP583995 (149 Airds Road) and Lot 213 in DP260735 (155 Airds Road) which have a combined area of 90,246m² (see **Figure 1, Section 2**).

The application seeks consent for construction of two new warehouse buildings (Warehouses A and B) including ancillary office space, access roads, landscaping and car parking.

1.1 Purpose

The purpose of this WMP is to provide an outline of the considerations regarding waste during construction and operational phases of the Proposal with respect to types, estimated volumes and potential reduction opportunities. This assessments will support the planned Development Application (DA) with Campbelltown City Council.

Upon approval of the DA, a more detailed Waste Management Plan will be prepared to include the consent conditions. This Plan will also include additional details of the location of designated waste management areas.

2. Project Description

The site is currently an industrial site, containing warehouses, landscaped areas and a carpark area. Planned works will result in continued industrial use as the site is planned to include two warehouses once construction is complete. (refer to **Appendix A** for site plan).

2.1 Location and Site Layout

Information relating to the site is provided in **Table 2.1** below. The site location is illustrated in **Figure 1**.

Table 2.1 Site Details

Site address	149-155 Airds Road, Minto NSW 2214
Local Government	Campbelltown City Council
Zoning	IN1 – General Industrial, Campbelltown Local Environmental Plan (LEP) 2015
Surrounding Land Use	The site is located in Minto and is bound by Airds Road to the east and Campbelltown Road is located to the west. It is within an area largely surrounded by other industrial buildings (distribution centres, construction supplies etc.) to the north and south.

2.2 Project Scope of Works

The site will undergo the following redevelopment works including:

- Construction, fit out and operation of warehouse and general industry buildings comprising of the following:
 - Warehouse A
 - warehouse GFA of 11,358m²
 - offices GFA of 289m² (A1) and 281m² (A2): total of 570m²
 - total building GFA 11,928m²
 - 75 carparks
 - Warehouse B
 - warehouse GFA of 11,809m²
 - offices GFA of 586m² (B1) and 94m² (dock office)
 - total building GFA 12,489m²
 - 81 carparks
- General infrastructure to support the warehouses include:
 - Private access road and turning circle
 - Vehicular access and loading docks
 - Hard and soft landscaping as well as signage
 - Hard and soft landscaping, as well as signage

Detailed design drawings are included in **Appendix A**.



Figure 1 Site location (in blue)

3. Legislation and Other Requirements

3.1 Legislation and Policies

The waste management for the construction and operational phases of the Proposal is required to be conducted in accordance with a series of legislation, policies and plans. Legislation and other instruments considered for this WMP are provided in **Table 3.1**.

Table 3.1 NSW Waste Legislation and Policy Instruments

Instrument	Purpose
<i>Protection of the Environment Operations Act 1997</i> Protection of the Environment Operations (Waste) Regulation 2014 Protection of the Environment Operations (General) Regulation 2009	<i>The Protection of the Environment Operations Act 1997</i> (POEO Act) is the key piece of environment protection legislation administered by the NSW Environment Protection Authority (EPA). The object of the Act is to achieve the protection, restoration and enhancement of the quality of the NSW environment. The Act provides a definition of 'waste' for regulatory purposes, along with a list of activities that require an environmental protection licence (EPL). The Act enables the Government to establish policy instruments for setting environmental standards, goals, protocols and guidelines. The POEO Act and Regulations are administered by the Environmental Protection Authority (EPA) who can issue clean-up notices, prevention notices, fees and fines.
<i>Waste Avoidance and Resource Recovery Act 2001</i>	The WARR Act promotes waste avoidance and resource recovery to achieve a continual reduction in waste generation, provides for development of a state-wide Waste Strategy, and introduces a scheme to promote extended producer responsibility for the life cycle of a product. Objectives of the Act include: • To encourage the most efficient use of resources and to reduce environmental harm; • To ensure that resource management options are considered against a hierarchy (see Section 3.2); • Provide for the continual reduction in waste generation; • To minimise the consumption of natural resources and the final disposal of waste; • To ensure that industry shares with the community the responsibility for reducing and dealing with waste; and • To assist in the achievement of the objectives of the <i>POEO Act</i>.
<i>Environmentally Hazardous Chemicals Act 1985</i>	The Act provides for control of the effect on the environment of chemicals and chemical wastes. The EPA is responsible for administering this legislation, in partnership with other state government agencies. It is the primary legislation for specifically regulating environmentally hazardous chemicals throughout their life cycle. The Act sets out requirements for: • Chemical Control Orders (CCOs) which are used to manage specified hazardous chemicals and chemical wastes; • Technology assessments, which ensure that premises treating or destroying chemicals are safe and appropriate for their purpose; and • Licensing of individuals or industries who manage chemicals that are subject to a CCO.
<i>Contaminated Land Management Act 1997</i> Contaminated Land Management Regulation 2013	The Act establishes a process for investigating and (where appropriate) remediating land that the EPA considers to be contaminated significantly enough to require regulation.
Campbelltown Development Control Plan 2015	With regards to waste management during construction and demolition, the DCP requires the following: • All waste and recyclable streams shall be stored separately on site; • All storage areas/ containers for each waste and recycling stream shall be kept on the site at all times and shall be indicated on the site plans/drawings as part of the Waste Management Plan (WMP); • Where material cannot be reused or recycled, it shall be disposed at an appropriately licensed waste management facility. Details of disposal arrangements shall be specified in the WMP; • Convenient and safe vehicular access to waste and recycling material storage areas shall be provided; and

Instrument	Purpose
	The removal, handling and disposal of asbestos or other hazardous materials shall be carried out in accordance with SafeWork NSW, NSW EPA and other regulatory authority guidelines and requirements
Australian Government Construction and Demolition Waste Guide, 2011	The aim of the guide is to help develop effective markets for materials diverted or derived from the construction and demolition waste stream.
Australian Government Sustainable Procurement Guide, 2018.	The guide aims to reduce the adverse environmental, social and economic impacts of purchased products and services throughout their life through considerations such as waste disposal and the cost of operation and maintenance over the life of the goods. The guide was developed to assist Australian Government purchasers to include sustainability considerations in all stages of the procurement process, from identifying the business need to disposal of goods.
NSW Environment Protection Authority (EPA) Waste Classification Guidelines 2014 (EPA 2014)	The Waste Classification Guidelines have been established by the NSW EPA to assist waste generators to classify wastes. Wastes are classified into groups that pose similar risks to environment and human health. Waste classifications are discussed further in Section 4.1.1
Building Code of Australia (BCA)	The BCA contains technical provisions for the design and construction of buildings and other structures, covering such matters as structure, fire resistance, access and egress, services and equipment, and energy efficiency, as well as certain aspects of health and amenity.
NSW EPA's Waste Avoidance and Resource Recovery (WARR) Strategy 2014-21	The WARR strategy provides a framework for waste management for the state until 2021. Key targets include: - Avoid and reduce waste generation; - Increase recycling; - Divert more waste from landfill; - Manage problem wastes better; - Reduce litter; and - Reduce illegal dumping.
NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012	The guide provides advice to assist architects, developers, council staff and building managers to incorporate better waste management practice into the design, establishment, operation and ongoing management of waste services in commercial and industrial developments.
How to manage and control asbestos in the workplace, SafeWork NSW Code of Practice, 2016 (NSW Government)	The Code of Practice is an approved code of practice under the <i>Work Health and Safety Act 2011</i>. The code provides guidance on how to manage risks associated with asbestos and asbestos containing material at the workplace and thereby minimise the incidence of asbestos-related diseases such as mesothelioma, asbestosis and lung cancer.
How to safely remove asbestos, SafeWork NSW Code of Practice, 2016 (NSW Government)	The Code of Practice is an approved code of practice under the <i>Work Health and Safety Act 2011</i>. The code provides practical guidance on how to safely remove asbestos from all workplaces including structures, plant and equipment, and is to be read in conjunction with <i>How to manage and control asbestos in the workplace</i> Code of Practice.
Sampling Design Guidelines – Contaminated Sites. NSW EPA, 2022	The Sampling Design Guidelines were established by the NSW EPA to: - Encourage the use of a statistically based approach to the design and sampling for contaminated sites and the interpretation of these samples for assessing and validating contaminated sites; and - Provide a convenient summary of statistical methods.

3.2 Waste Hierarchy

Waste management for the Proposal will be assessed in accordance with the waste hierarchy, which underpins the objectives of the *Waste Avoidance and Resource Recovery Act 2001*. The waste hierarchy shown in **Figure 2** demonstrates preferred approaches to waste management to ensure sustainable development and use of resources.

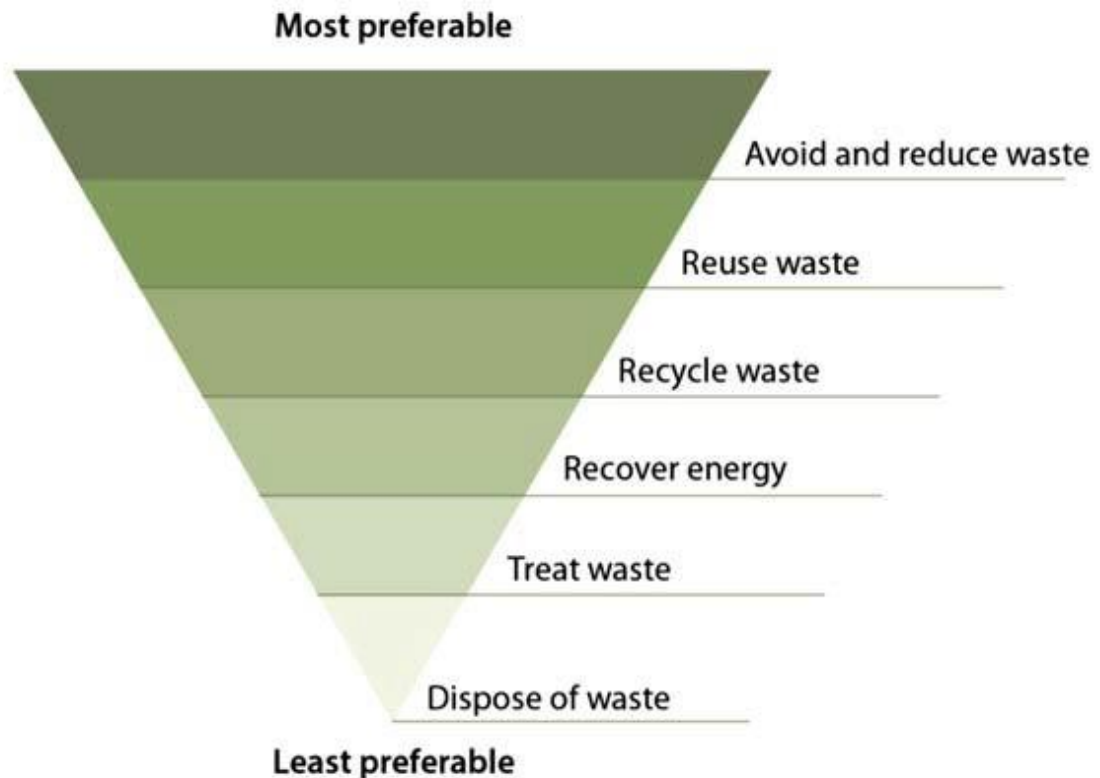


Figure 2 Waste hierarchy

The hierarchy also aims to maximise efficiency and avoid unnecessary consumption of resources. This waste assessment seeks to implement the waste hierarchy to evaluate ways to minimise waste disposal and promote waste reduction in order of preference:

- Reduce or avoid waste through selection of items and design;
- Reuse materials without further processing;
- Recycle and process waste for reuse as a new product;
- Recover energy through combustion of materials where acceptable and in accordance NSW EPA Regulations;
- Treat waste to stabilise the waste product for disposal or reuse; and
- Dispose of waste when no other management options are appropriate.

4. Waste Generation

4.1 Waste Streams and Classification

4.1.1 EPA Waste Classification

The NSW EPA Waste Classification Guidelines (EPA 2014) provides for the classification of wastes into groups that pose similar risks to the environment and human health, which are defined in the POEO Act. Classes of waste described in the guideline are described in **Table 4.1**.

Table 4.1 Summary of NSW EPA Waste classifications

Waste Classification	Description
Special waste	Special wastes are wastes that pose specific regulatory requirements due to the risks of harm to the environment and human health. These wastes include clinical and related waste, asbestos waste, waste tyres, and anything classified as special waste under an EPA gazettal notice.
Liquid waste	Liquid waste is classified as any waste (other than special waste) that meets the following criteria: • Has an angle of repose of less than 5 degrees above horizontal; • Becomes free flowing at or below 60 degrees Celsius or when it is transported; • Is generally not capable of being picked up by a spade or shovel; and/or • Is classified as liquid waste under an EPA gazettal notice.
Pre-classified waste: • Hazardous waste • Restricted solid waste • General solid waste (putrescible) • General solid waste (non-putrescible).	Where the waste is neither liquid nor special waste; the EPA has pre-classified other commonly generated waste types, as defined in Schedule 1 of the POEO Act. This includes hazardous waste, restricted solid waste, general solid (putrescible) and general solid (non-putrescible) waste. Putrescible waste is the component of the waste stream that is liable to become putrid, and usually refers to vegetative, food and animal products. A list of all currently gazetted waste classifications is provided on the EPA website at: www.epa.nsw.gov.au/waste/wastetypes.htm . Where material is classified as hazardous waste, it is noted that such materials cannot be directly disposed and must be treated prior to disposal by an appropriately licensed facility/operator.
Wastes classified via chemical assessment: • Hazardous waste • Restricted solid waste • General solid waste (putrescible) • General solid waste (non-putrescible).	Where the waste does not fall into one of the above categories, chemical assessment of the material is required to finalise a waste classification as per the procedures outlined in detail in EPA (2014) and/or consideration of General or Specific Waste immobilisation approvals as approved under the <i>Protection of the Environmental Operations (Waste) Regulation</i> (2014).

4.2 Construction

4.2.1 Waste Generating Activities During Construction

Potential waste generating activities during the construction phase of the Proposal are outlined in **Table 4.2** below

Table 4.2 Waste generating construction activities

Phase	Activity
Construction	• Excavation associated with foundation work • Surplus material and offcuts from: ○ Foundation work and floor slab installation ○ Erection of framework and structural walls ○ Installation of roofing and wall coverings ○ Internal fit out of building ○ Connection to new utilities

Phase	Activity
	- Landscaping - Preparation of warehouse access road and car-parking areas - Forming of new kerbs, gutters, medians and other structures - Construction of asphalt and concrete pavements
Post Construction	- Decommissioning/demobilisation of construction sites - Landscaping - Removal of construction ancillary facility

4.2.2 Waste Types Generated During Construction

A variety of waste types are expected be generated during the site preparation and construction of the Proposal. Potential waste types, corresponding EPA classifications and likely management for the construction of the Proposal are summarised in **Table 4.3**.

Table 4.3 Construction waste types, classification and management

Waste Type	EPA Classification	Reuse/recycling	Disposal
Excavated Soil	Subject to Waste Classification as per EPA 2014 following excavation	On-site reuse and/or taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Rock and excavated stone	Subject to Waste Classification as per EPA 2014 following excavation	On-site reuse and/or taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Green waste (vegetation)	General solid waste (non-putrescible)	On-site reuse and/or taken off-site for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Metals (including roofing)	General solid waste (non-putrescible)	Off-site disposal for sale or reuse/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Wood waste (including joinery offcuts)	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Blockwork	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Asphalt (excluding coal tar)	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Concrete (Building frames, cores & roof; external works; slab)	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Plasterboard	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Glass	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Carpet Tiles	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Vinyl	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility

Waste Type	EPA Classification	Reuse/recycling	Disposal
General refuse	General solid waste (putrescible), and General solid waste (non-putrescible)	Taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Electrical (HV and LV)	General solid waste (non-putrescible)	Taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Optic fibre wiring	General solid waste (non-putrescible)	Taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Light bulbs	Hazardous waste	NA	Off-site disposal at an appropriately licensed facility
Batteries	Hazardous waste	NA	Off-site disposal at an appropriately licensed facility
PVC pipes (stormwater, electrical, optic fibre, sewer)	General solid waste (non-putrescible)	Taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Site runoff (stormwater)	Liquid waste	On-site reuse and/or taken off-site for recycling/reuse/reprocessing where relevant	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility
Sewage	Liquid waste	NA	Off-site disposal at an appropriately licensed facility
Asbestos containing materials	Special waste	NA	Off-site disposal at an appropriately licensed facility
Lead based paints	Hazardous waste	NA	Off-site disposal at an appropriately licensed facility

4.2.3 Estimated Waste Volumes Generated During Construction

An estimate for the volume of waste generated during construction of the Proposed is based on information provided in **Table 4.4** and **Table 4.5**.

Table 4.4 Average volumes of waste produced by different project types

Project Type	Average volume (m ³) of waste per 100 m ²
Residential	18.1
Public buildings	20.9
Leisure	14.4
Industrial Buildings	13.0
Healthcare	19.1
Education	20.7
Commercial Other	17.4
Commercial Offices	19.8
Commercial Retail	20.9

Source: BRE (2012)

For the purposes of this Proposal, “Industrial Buildings” has been used as the project type.

Table 4.5 Guide to waste composition and volumes during construction

Material	Estimated Waste %	Conversion Factor (Density) (Tonne per m ³)
Hard material	32%	1.2
Timber	24%	0.3
Plastics	15%	0.13
Cement sheet	9%	0.5
Gypsum material	6%	0.2
Metals	6%	0.9
Paper / card	4%	0.1

Material	Estimated Waste %	Conversion Factor (Density) (Tonne per m ³)
Vegetation	3%	0.15
Soil	1%	1.6
Other	0.3%	0.3

Source: Sustainability Victoria Waste Wise Tool Kit (2013)

These benchmark estimates allow for waste volumes for the Proposed to be calculated during the construction phase based on a total development area of 51,240m², as provided in **Table 4.6** below.

Table 4.6 Approximate quantities of waste generated during construction phase

Waste Type	Approximate quantity (m ³)
Hard material	2,558
Timber	480
Plastics	130
Cement sheet	300
Gypsum material	80
Metals	360
Paper / card	27
Vegetation	30
Soil	107
Other	6
TOTAL	4,076

Source: Sustainability Victoria Waste Wise Tool Kit (2013)

4.2.4 Waste Storage and Collection During Construction

During construction, waste storage areas should be designated for the collection all construction waste. Areas designated for waste storage should:

- Allow unimpeded access by site personnel and waste disposal contractors;
- Employ adequate environmental management controls to prevent off-site migration of waste materials and/or contamination from the waste; and
- Not present hazards to human health or the environment.

Waste materials produced from site preparation and construction activities are to be segregated and stored separately on site. It is anticipated that the site will provide allowances for storage (for example, separate skip bins and/or appropriately managed stockpiles) of the waste types outlined in **Table 4.3**:

All waste should be disposed by a licensed waste contractor to a licensed waste facility. It is the responsibility of the contractor to:

- Arrange for suitable waste collection contractors to remove site preparation and 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 contractor(s) and facilities receiving the waste or 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)
- Waste classification documentation for materials disposed to off-site recycling or landfill facilities
- Remove waste during hours approved by Council.

4.3 Operation

4.3.1 Waste Generating Activities During Operation

Potential waste producing activities during operation are outlined in **Table 4.7** below.

Table 4.7 Waste generating operation activities

Operation Location	Activity
Warehouse	● De-stuffing from containers (including cardboard, flexible plastics, pallets, metal plastic ties etc) ● Possible maintenance consumables and general waste, if maintenance undertaken on site ● Spill kit consumables (Note: future warehouse owners may have specific wastes that require further consideration)
Office	● General solid waste (putrescible) – mixed residual waste ● General solid waste (non-putrescible) – recyclable materials (paper, plastic containers, glass containers and aluminium cans), cardboard and plastic packaging

4.3.2 Waste Types Generated During Operation

Potential operation waste types and corresponding EPA classifications for the operation of facilities constructed on the site are summarised in **Table 4.8**.

Table 4.8 Potential operational waste types

Waste Type	EPA Classification	Reuse/recycling	Disposal
Residual waste (office and lunchroom)	General solid waste (putrescible)	NA	Disposed off-site at an appropriately licensed facility
Recyclables	General solid waste (non-putrescible)	Off-site material recycling/recovery/reprocessing facility	Disposed off-site at an appropriately licensed facility
Maintenance/workshop consumables	General solid waste (non-putrescible)	Off-site disposal for reprocessing/recycling	Any element unable to be reused or recycled will be disposed at an appropriately licensed facility

4.3.3 Estimated Waste Volumes Generated during Operation

Estimated waste generation during operation are based on guidance within Sustainability Victoria's *Waste Management and Recycling in Multi-unit Developments Better Practice Guide* (2019). This guide identifies the "commercial waste generation rates" for offices and warehouses is 10L/100m² of floor area/day for both general waste (garbage) and recyclables.

Based on the following areas (from **Section 2.2**), estimated waste volumes during operation are summarised in **Table 4.9**.

Table 4.9 Estimated operational waste volumes

Warehouse (area)	Waste Type	Volume
Warehouse A (11,928m ²)	Garbage	1,193 L per day
	Recycling	1,193 L per day
Warehouse B (12,489m ²)	Garbage	1,249 L per day
	Recycling	1,249 L per day

4.3.4 Waste Storage and Collection During Operation

There are designated waste storage areas located on the northern side of the warehouses adjacent to the recessed loading dock areas. As highlighted in yellow in **Appendix A**, as follows:

- Warehouse A: 2 No (eastern and western sides of the loading dock).
- Warehouse B: 1 No. eastern side of the loading dock)

These waste storage areas will have separate bins designated for general waste and for recycling.

The location of these designated waste storage areas allow for easy access by vehicles when removal off site is required.

There is the potential for specific wastes to be produced at the warehouse depending on future tenants' operations. Provisions for waste storage (within the designated waste storage area) and collection for these potential wastes should be identified and managed by any future tenant.

5. Potential Impacts

Potential impacts from waste generation relate mainly to waste management. Waste management practices differ between construction and operation phases. This section considers options in which waste management could cause potential impacts to on-site and off-site receptors.

5.1 Construction

Potential impacts resulting from waste generation and treatment, or disposal are outlined below in **Table 5.1**.

Table 5.1 Potential construction waste generating impacts

On-site waste management	Off-site waste management
Treatment and/or Reprocessing - Vegetation will be either re-processed on-site or transferred off-site for reprocessing. Should this occur on-site, it will have an impact on noise sensitive receivers. - Concrete and asphalt will be reprocessed on-site or transferred off-site for reprocessing. Should this occur, it would potentially generate dust and have an impact on noise sensitive receivers.	Recycling - Noise associated with recycling activities - Dust caused by recycling activities - Odour associated with putrescible waste processing - Greenhouse gas emitted from recycling activities
Storage - VENM / ENM will be stored on-site for re-use or prior to removal from site. - Should concrete and asphalt be re-processed and re-used for on-site applications, it will be stockpiled on-site. Potential impacts associated with concrete stockpiling include health and safety hazards, dust and impact on visual amenity. - Timber, plasterboard, bricks / pavers / tiles, sediment controls, surplus building materials and other C&D wastes will be temporarily stockpiled on site prior to re-use, re-processing and / or off-site disposal. This could result in health and safety issues, dust and could impact visual amenity. - If waste is stored incorrectly, it may result in airborne litter and stormwater pollution.	Disposal - Dust from loading/unloading and transport vehicles - Consumption of landfill airspace - Disposal of potentially valuable natural resources - Health and safety risks associated with hazardous waste disposal
Re-use The Contractor may re-use some waste materials on-site. This is not expected to have an impact as it will essentially replace virgin materials.	

5.2 Operation

Potential impacts from waste generation and treatment or disposal from operational activities are outlined in **Table 5.2**.

Table 5.2 Potential operation waste generating impacts

On-site waste management	Off-site waste management
No on-site recycling is anticipated ,however will be dependent on the future warehouse tenant.	Recycling - Noise and odour associated with recycling activities - Greenhouse gas emitted from recycling activities
Storage - Odour associated with storage of putrescible waste generated at the office - Vermin attracted by outside storage of putrescible waste - If waste is stored incorrectly, it may result in airborne litter and stormwater pollution	Disposal - Greenhouse gas associated with disposal of putrescible waste - Dust - Consumption of landfill airspace - Odour at putrescible waste landfill - Disposal of potentially valuable natural resources - Health and safety risks associated with hazardous waste disposal

6. Mitigation Measures

Measures to mitigate the potential impacts of waste generated as part of the Proposal differ between the activities undertaken in the construction and operation phase. This section outlines mitigation measures that can be employed to minimise these potential impacts.

6.1 Construction

There are expected to be more waste management requirements during the construction phase of the Proposal due to more waste generating activities occurring. Mitigation measures for incorporation into future management plans include:

- Characterisation of construction waste streams;
- Management of any identified hazardous waste streams;
- Procedures to manage construction waste streams, including handling, storage, classification, quantification, identification and tracking;
- Mitigation measures for avoidance and minimisation of waste materials; and
- Procedures and targets for reuse and recycling of waste materials.

Best-practice waste management principles would also be incorporated into future plans. These include:

- All waste and recyclable streams shall be stored separately on site;
- All storage areas / containers for each waste and recycling stream shall be kept on the site at all times and shall be indicated on the site plans/drawings;
- Convenient and safe vehicular access to waste and recycling material storage areas shall be provided;
- The removal, handling and disposal of asbestos or other hazardous materials shall be carried out in accordance with SafeWork NSW, the NSW EPA and other regulatory authority guidelines and requirements;
- Appropriate signage will be used in the waste storage area to ensure correct separation of recyclables;
- Stockpiles will be maintained in accordance with adequate erosion and sedimentation controls;
- Waste to be stored so as to avoid airborne litter, vermin and stormwater pollution;
- Re-processing, recycling and/or removal of waste materials for disposal should be scheduled to limit stockpiling and associated impacts;
- Putrescible materials need to be removed from site as soon as practical to avoid odour impacts. Non-putrescible materials should be reprocessed or removed from site on an 'as-needs' basis to limit logistical, health and safety and dust impacts. Hazardous waste materials, should they arise, must be immediately removed to limit environmental and health and safety risks;
- Waste materials should only be transported to their next destination using a licensed contractor;
- Waste materials should only be transported to an appropriately licensed facility for recycling or disposal; and
- Records to be maintained on all waste exiting the construction site.

Further, recommended waste avoidance principles that could be incorporated into the Proposal are outlined below:

- Avoidance and reuse of material would have priority over recycling;
- Recycling would have priority over disposal;
- If possible concrete components would be crushed and re-used on-site, with the remainder sent to a recycling facility;
- Waste generation would be minimised by ordering the correct quantity of materials;
- Selection of materials which maximise recycled content, while having low embodied water and energy use;
- Selection of materials which maximise durability and lifespan;
- Selection of reputable waste removal contractors who will guarantee that recyclable material will be recycled and will provide any relevant certificates;
- Vegetation removed should be either preserved for use in the new development, or mulched for inclusion in landscaping activities. The remainder should be sent to a composting facility;
- Excavated earth should be used for infill and landscaping where feasible, the remainder should be sent to a recycling facility;
- Asphalt should be re-used by transferring it to a batching plant or using it as a base layer for access roads;
- Coordinate and sequence trades people to minimise waste;
- Pre-fabricate materials where possible;
- Use modular construction to reduce the need for excess waste, where possible or feasible;
- Reuse formwork;
- Separate off-cuts to facilitate reuse, re-sale or efficient recycling;
- Select landscaping which reduces green waste;
- Engage with the supply chain to supply products and materials that use minimal packaging; and
- Set up schemes with suppliers to take back packaging materials.

6.2 Operation

Operation waste mitigation measures should be incorporated into future environmental plans and policies developed for the proposal. These mitigation measures include:

- Addressing waste management requirements and goals in staff inductions;
- Providing staff access to documentation outlining the facility's waste management requirements;
- Locating recycling bins in kitchen areas beside general waste bins to prevent contamination of recycling;
- Positioning paper recycling bins close to printer/photocopying equipment;
- Minimising general waste bins at desks but providing adequate container and paper recycling to encourage sorting of recyclables;
- Providing adequate bin storage for the expected quantity of waste;
- Appropriate areas should be provided for the storage of waste and recyclable material;

- Standard signage on how to use the waste management system and what materials are acceptable in the recycling should be posted in all waste collection and storage areas;
- All waste should be collected regularly and disposed of at licensed facilities; and
- An education programme and on-going monitoring should be implemented for training personnel to properly sort and transport waste into the right components and destinations.

7. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only and has been based in part on information obtained from the client and other parties.

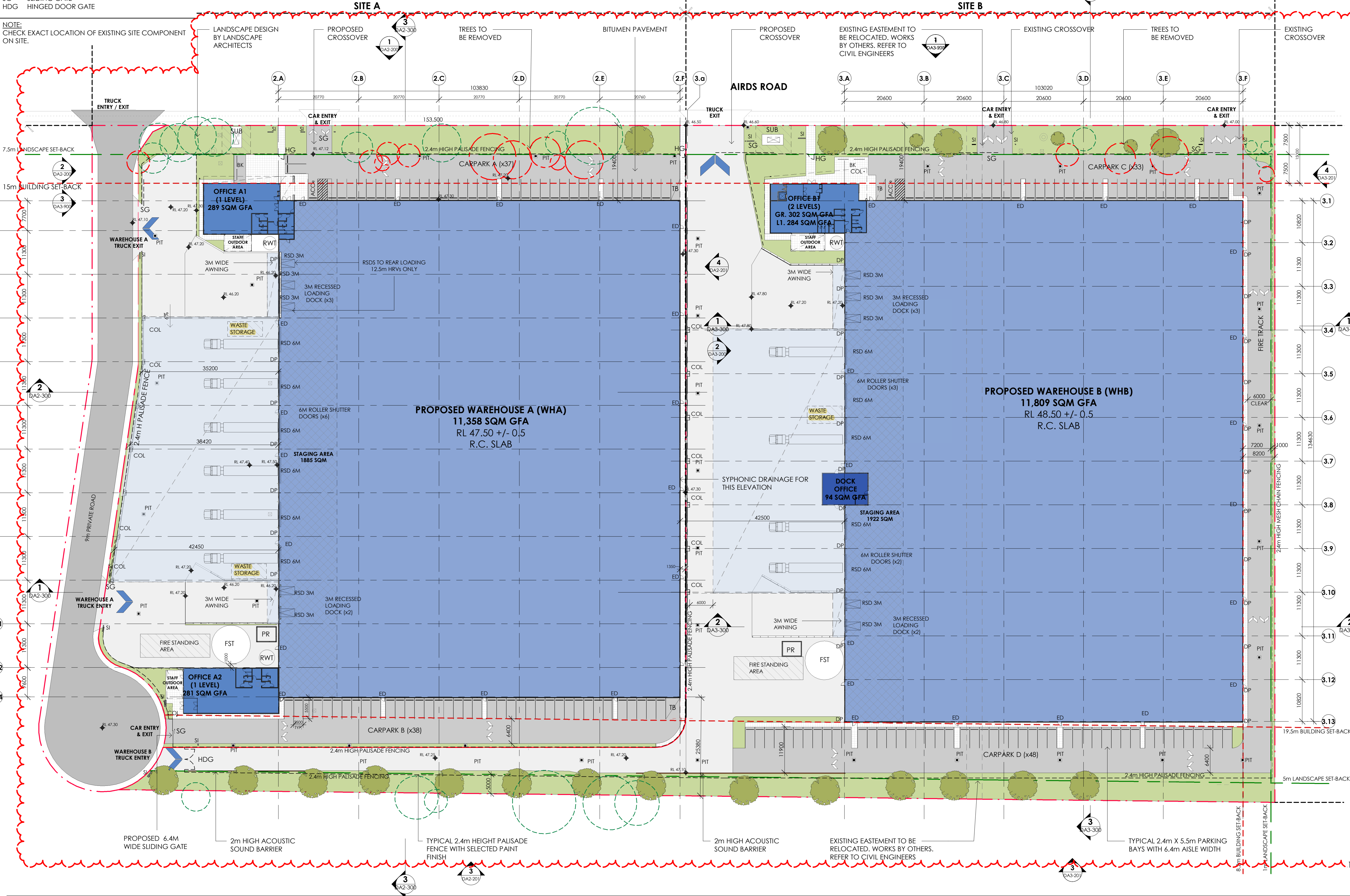
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Appendix A Design Drawings

LEGEND

BR	BIKE
DP	DOWNPIPE WITH PROTECTIVE SLEEVE
ED	EXIT DOOR
FST	FIRE SPRINKLER TANK - REFER TO HYDRAULIC ENG.
PR	PUMP ROOM - REFER TO HYDRAULIC ENG.
RED	RECESSED LOADING DOCK
RSD	ROLLER SHUTTER DOOR
RWT	RAIN WATER TANK
PER	PERGOLA OR SIMILAR
SI	SIGNAGE
SG	SLIDING GATE
HGD	HINGED DOOR GATE

NOTE:
CHECK EXACT LOCATION OF EXISTING SITE COMPONENT
ON SITE.



149 AIRDS RD, MINTO

WH A - AREA & CARPARK SCHEDULE

Total Site Area	23,080 sqm
Landscape Calculations Actual Provided 2,193 sqm (9.50% of site area 23,080 sqm)	
Warehouse GFA	11,358 sqm
Office A1 GFA (1 Level)	289 sqm
Office A2 GFA (1 Level)	281 sqm
Total Building GFA	11,928 sqm
CARPARKING	
Carpark A	37
Carpark B	38
Total carparking provided	75
Total carparking required	75

WH B - AREA & CARPARK SCHEDULE

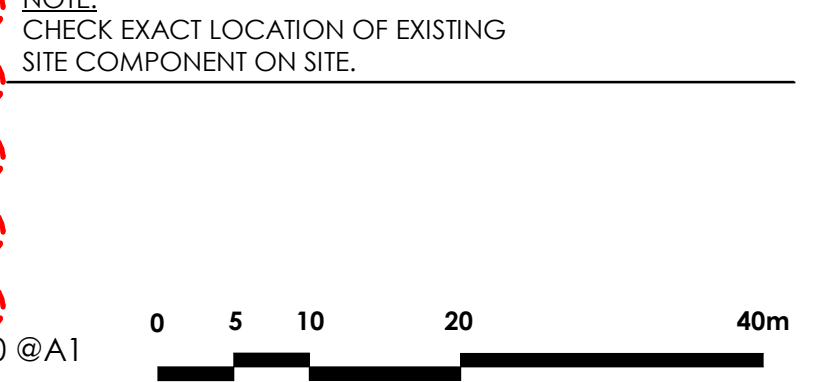
Total Site Area	28,160 sqm
Landscape Calculations Actual Provided 2,493 sqm (8.85% of site area 28,160 sqm)	
Warehouse GFA	11,809 sqm
Office B1 Ground level GFA	302 sqm
Office B1 Level 1 GFA	284 sqm
Dock Office GFA (1 Level)	94 sqm
Total Building GFA	12,489 sqm
CARPARKING	
Carpark C	33
Carpark D	48
Total carparking provided	81
Total carparking required	80

NOTE:
ALL AREAS SHOWN ARE SUBJECT TO CHANGE
ALL PROPOSED LEVELS ARE SUBJECT TO CIVIL
ENGINEER REVIEW AND ADVICE.

LEGEND

	PROPOSED SITE BOUNDARY LINE
	LOT BOUNDARY LINE
	LANDSCAPE SET-BACK
	BUILDING SET-BACK
	2.4m HIGH MESH CHAIN FENCING
	2.4m HIGH PALISADE FENCE LINE
	STORM WATER PIT, OSD TANK TO CIVIL ENG'S DETAIL
	PYLON SIGNAGE
	CONCRETE COLUMN AS PER ENG. DETAILS
	SUB - STATION
	WAREHOUSE
	OFFICE
	AWNING
	HEAVY DUTY AREA
	LIGHT DUTY AREA
	LANDSCAPING AREA
	ESTATE ROAD
	TREES PROPOSED TO BE REMOVED. REFER TO ARBORIST REPORT FOR DETAILS.
	EXISTING TREES TO BE RETAINED. REFER TO ARBORIST REPORT FOR DETAILS.

NOTE:
CHECK EXACT LOCATION OF EXISTING
SITE COMPONENT ON SITE.



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