New High School for Schofields & Tallawong,
Tallawong NSW

OPERATIONAL WASTE MANAGEMENT PLAN

21/01/2025
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Revision I

Client

NSW Department of Education
www.education.nsw.gov.au

Architect

DJRD Architects
www.djrd.com.au

Consulting
an Elephants Foot Company

ABN: 47 644 736 514
ELEPHANTS FOOT CONSULTING. PTY LTD
1300 456 374 | consulting@elephantsfoot.com.au
www.elephantsfoot.com.au

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GLOSSARY OF ABBREVIATIONS AND TERMS

TERM	DESCRIPTION
Bin-Carting Route	Travel path for transporting bins from their allocated storage location to the nominated collection point
Bin Hoist	A device used for lifting or lowering bins between different levels
Bin Lifter	A device used to mechanically lift bins for the purpose of emptying them into larger bins and/or compactors.
Bin Mover	Either a handheld device (commonly referred to as a bin tug) or a ride-on device (typically a tractor or Class C vehicle with an attached bin trailer) used to facilitate the movement of bins across long distances or up ramps
Bulk Bins	Containers with a capacity greater than 1100L designed to be collected by a front-loading vehicle
Bulky Waste	Recycling items that are too large to be deposited into bins, including furniture, whitegoods, electronics and mattresses
Collection Area/Point	Designated area or point where bins are loaded onto the collection vehicle for servicing
Comingled Recycling	Waste stream for the recycling of plastic bottles, other plastics, paper, glass and metal containers
Communal Bin Room	A central, shared bin room accessible to all residents or staff to dispose of their waste stream
DA	Development Application
DCP	Development Control Plan
EPA	Environment Protect Authority
FOGO	Food Organics and Garden Organics
General Waste	All non-recyclable and non-hazardous waste that is sent to landfill
HRV	Heavy Rigid Vehicle
Kerbside Collection	A collection arrangement whereby bins are presented in a single row along the kerb and serviced by a collection vehicle on the street.
L	Litre
LEP	Local Environmental Plan
Mobile Bins	Containers with a capacity up to and including 1100L designed to be collected by a rear-loading vehicle
MRV	Medium Rigid Vehicle
Onsite Collection	A collection arrangement whereby all bins are serviced by a collection vehicle within the property boundary, either in the building's basement or at grade and off-street.
Owners Corporation	An organisation or group of persons that is identified by a particular name and that acts, or may act, as an entity

Paper/ Cardboard Recycling	Waste stream for the recycling of paper and cardboard only.
Recycling	Waste stream that combines all recycling, including comingled recycling, paper/cardboard and metals.
Source Separation Receptacles	Communal containers used throughout the development for the day-to-day disposal of different waste streams
SRV	Small Rigid Vehicle
Waste Stream	A classification used to describe waste of a particular type (eg. food waste stream)
WHS	Workplace Health and Safety
Wheel-Out Wheel Back	A collection arrangement whereby a collection vehicle parks on the street and collection staff exit the vehicle to wheel each bin from a designated storage area to the vehicle for servicing and returns them upon completion.

1.0 ACKNOWLEDGEMENT OF COUNTRY

Elephants Foot Consulting (EFC) acknowledges that every project we work on takes place on First Peoples land. We recognise Aboriginal and Torres Strait Islander People as Traditional Custodians of this land. We pay respect to ancestors and Elders, past and present.

2.0 INTRODUCTION

This Operational Waste Management Plan has been prepared to support a Review of Environmental Factors (REF) for the Department of Education (DoE) for the construction and operation of the new Schofields - Tallawong High School, NSW.

The purpose of the REF is to assess the potential environmental impacts of the activity prescribed by State Environmental Planning Policy (Transport and Infrastructure) 2021 (T&I SEPP) as "development permitted without consent" on land carried out by or on behalf of a public authority under Part 5 of the Environmental Planning and Assessment Act 1979 (EP&A Act). The activity is to be undertaken pursuant to Chapter 3, Part 3.4, Section 3.37a of the T&I SEPP.

This document has been prepared in accordance with the Guidelines for Division 5.1 assessments (the Guidelines) by the Department of Planning, Housing and Infrastructure (DPHI). The purpose of this report is to undertake the operational phase of the proposed high school.

Waste management strategies and audits are required for new developments in order to support the design and sustainable performance of the building. It is EFC's belief that a successful waste management strategy contains three key objectives:

i. ***Promote responsible source separation*** to reduce the amount of waste that goes to landfill by implementing convenient and efficient waste management systems.

ii. ***Ensure adequate waste provisions and robust procedures*** that will cater for potential changes during the operational phase of the development.

iii. ***Comply*** with all relevant council codes, policies, and guidelines.

To achieve these objectives, this operational waste management plan (OWMP) identifies the different waste streams likely to be generated during the operational phase of the high school, as well as how the waste will be handled and disposed, details of bin sizes/quantities and waste rooms, descriptions of the proposed waste management equipment used, and information on waste collection points and frequencies.

It is essential that this OWMP is integrated into the overall management of the building and is clearly communicated to all relevant stakeholders.

2.1 SCOPE OF REPORT

This OWMP only applies to the **operational** phase of the proposed high school; therefore, the requirements outlined in this OWMP must be implemented during the operational phase of the site and may be subject to review upon further expansion of, and/or changes to the high school.

The waste management of the **construction** and **demolition** phases of the high school are not addressed in this report. A construction and demolition WMP will need to be provided separately.

2.2 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of the REF submittal, which is supplied by EFC with the following limitations:

- Drawings, estimates and information contained in this OWMP have been prepared by analysing the information, plans and documents supplied by the client and third parties including Council and other government agencies. The assumptions based on the information contained in the OWMP is outside the control of EFC,
- The figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building management's approach to educating residents and tenants regarding waste management operations and responsibilities,
- Building Management will adjust waste management operations as required based on actual waste volumes (e.g. if waste is greater than estimated) and increase the number of bins and collections accordingly,
- The report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures,
- The report has been prepared with all due care; however no assurance is made that the OWMP reflects the actual outcome of the proposed waste facilities, services, and operations, and EFC will not be liable for plans or results that are not suitable for purpose due to incorrect or unsuitable information or otherwise,
- EFC offer no warranty or representation of accuracy or reliability of the OWMP unless specifically stated,
- Any manual handling equipment recommended in this OWMP should be provided at the recommendation of the appropriate equipment provider who will assess the correct equipment for supply,
- Design of waste management chute equipment and systems must be approved by the supplier,
- EFC cannot be held accountable for late changes to the design after the OWMP has been submitted to Council,
- EFC will provide specifications and recommendations on bin access and travel paths within the OWMP, however it is the architect's responsibility to ensure the architectural drawings meet these provisions,
- EFC are not required to provide information on collection vehicle swept paths, head heights, internal manoeuvring or loading requirements. It is assumed this information will be provided by a traffic consultant,
- Council are subject to changing waste and recycling policies and requirements at their own discretion.
- This OWMP is only finalised once the draft watermark has been removed. If the draft watermark is present, the information in the OWMP is not confirmed.

3.0 LEGISLATION & GUIDANCE

Waste management and resource recovery regulation in Australia is administered by the Australian Constitution, Commonwealth laws, and international agreements. State and territory governments maintain primary responsibility for controlling development and regulating waste. The following legislation has been enacted in New South Wales, and provides the lawful underpinnings of this OWMP.

- NSW Environmental Planning & Assessment Act 1979
- NSW Protection of the Environment Operations Act 1997
- NSW Waste Avoidance & Resource Recovery Act 2001

This OWMP had been prepared to support a REF for DoE for the construction and operation of a new high school in Schofields-Tallawong. This OWMP is made in accordance with the following documents, which serve only as a guide:

- Blacktown City Council Growth Centre Precincts Development Control Plan 2013 State Environmental Planning Policy 2021

Information provided in this OWMP comes from a wide range of waste management guidance at the local, state, and federal levels. The primary sources of guidance, which serve solely as a guide, include:

- Blacktown City Council Growth Centre Precincts Development Control Plan 2013
- NSW Better Practice Guide For Resource Recovery In Residential Developments 2019
- NSW Department of Education *Educational Facilities Standards and Guidelines Requirement DG02 (2.7.2)*
- NSW Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018

4.0 PROPOSED ACTIVITY

The proposed activity is for the construction and operation of a new high school known as Schofields - Tallawong High School. The new high school will accommodate up to 1,000 students. The school will provide 49 permanent teaching spaces (PTS), and 3 support teaching spaces (STS) across three buildings.

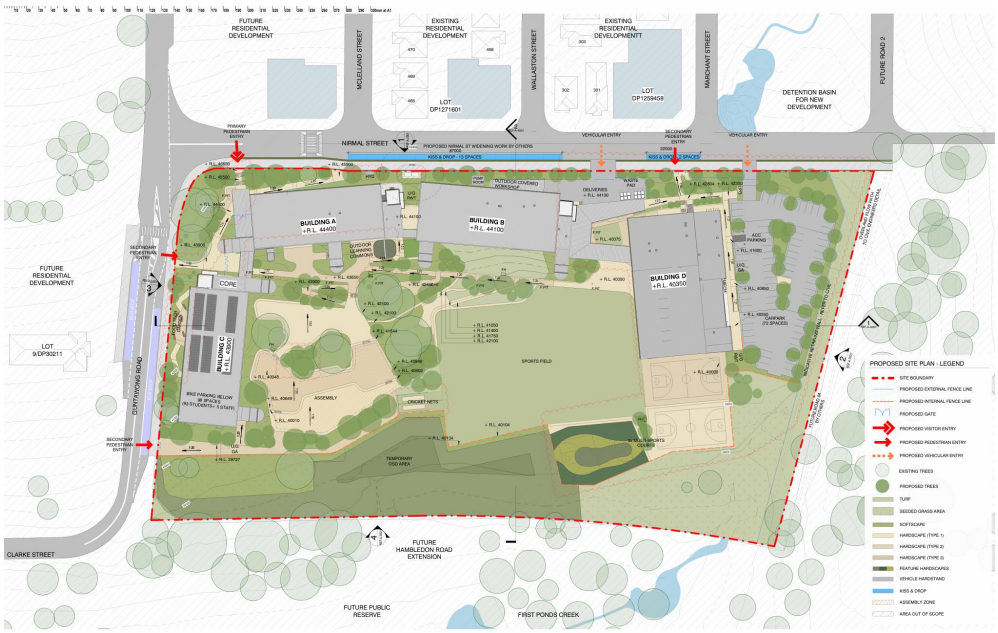
The buildings will be three-storey in height and will include teaching spaces, specialist learning hubs, a library, administrative areas and a staff hub. Additional core facilities are also proposed including a standalone school hall, a carpark, a pickup and drop off zone along Nirmal Street, two sports courts and a sports field.

Specifically, the proposal involves the following:

- Three learning hubs (three-storeys in height) accommodating 49 general teaching spaces and 3 support learning units (SLUs).
- Other core facilities including amenities, library, staff hub and administrative areas.
- Standalone school hall.
- Separate carpark with 72 spaces.
- Kiss and drop zone along Nirmal Street.
- Open play space including sports courts and sports field.
- Public domain works.

The proposed site access arrangements are as follows:

- Main pedestrian entrance to be located off Nirmal Street.
- Kiss and drop zone proposed along Nirmal Street.
- Onsite parking access via Nirmal Street.



All figures and calculations are based on information as advised by our client and shown on architectural drawings.

4.1 SITE LOCATION

The site is known as 201 Guntawong Road, Tallawong, NSW, 2762 (the site), and is legally described as part of Lot 1 in Deposited Plan 1283186. The site is located at the corner of Guntawong Road and Clarke Street, Tallawong and is approximately 4 hectares in area. The site has an approximately 100-metre-long frontage to Guntawong Road along its northern boundary. Nirmal Street provides a partial frontage along the eastern boundary of the site with plans to extend Nirmal Street to provide a future connection to Guntawong Road.

The site is predominantly cleared land and consists of grassland with several patches of remnant native vegetation particularly within the northern portion of the site. As a result of precinct wide rezonings, the surrounding locality is currently transitioning from a semi-rural residential area to a highly urbanised area with new low to medium density residential development with supporting services. The site is located approximately 1.5km to the north west of Tallawong Metro Station and is also serviced by an existing bus stop along Guntawong Road.

Figure 1: Site Location

Source: Urbis, 2024

5.0 SCHOOL WASTE MANAGEMENT

The following section outlines best practice waste management for the new high school, including waste generation estimates and waste disposal and collection procedures.

5.1 WASTE GENERATION ESTIMATES

The NSW EPA's *Better Practice Guide for Resource Recovery in Residential Developments* (2019) has been referenced to calculate the total number of bins required for the anticipated tenants. It is assumed that the waste and recycling generation rates from the NSW EPA's *Better Practice Guide for Resource Recovery In Residential Developments 2019* for educational facilities actually reflects weekly generation per student rather than a daily generation.

Calculations are based on generic generation rates. Actual volumes of waste and recycling may differ in operation according to the tenants' actual waste management practices.

The following table shows the estimated volume (L) of general waste and recycling that will be generated by this site.

Table 1: Estimated General Waste and Recycling Volumes – High School

Category	# Students	General Waste Generation Rate (L/student/day)	Generated General Waste (L/week)	Recycling Generation Rate (L/student/day)	Generated Recycling (L/week)
High School (Secondary)	**1000**	20	20000	15	15000
TOTAL	**1000**		**20000**		**15000**
Bins & Collections		General Waste Bin Size (L)	1100	Recycling Bin Size (L)	1100
		General Waste Bins per Day	2.6	Recycling Bins per Day	1.9
		General Waste Collections per Week	3	Recycling Collections per Week	3
		Total Bins Required	**7**	**Total Bins Required**	**5**

5.2 BIN SUMMARY

Based on the estimated waste and recycling volumes generated by this site, the recommended bin quantities and collection frequencies are as follows:

General Waste: 7 x 1100L bins collected **3 times weekly**
Recycling: 5 x 1100L bins collected **3 times weekly**

Bin sizes, quantities, and/or collection frequencies may be modified by the school management once the proposed school is operational. Building management will be required to negotiate any changes to bins or collections with the collection service provider. Fluctuations in waste generation (for example school holidays) should also be considered.

The general waste and general recycling can be further divided into more specific waste and recycling streams to increase recovery. The general waste stream can be separated into landfill waste, food waste and soft plastics recycling. The general recycling can be divided into co-mingled recycling, glass recycling and refundable containers. It is recommended that the further separation of waste streams is conducted once the site is operational to best reflect the operations of the site and the proportion of each waste stream generated. It is

recommended that annual waste audits are conducted to help understand the composition and total volumes of each waste stream generated during operation.

5.3 WASTE DISPOSAL PROCEDURES

A bin storage area will be located on the ground level, near the loading area. The bin storage area will contain 1100L mobile garbage bins for the collection of the waste and recycling. The groundskeeper, waste collection staff and cleaners will be the only personnel with access to the bin storage area. All transportation of waste and recycling must be co-ordinated with the groundskeeper or cleaners.

Suitably labelled waste and recycling receptacles or bins approx. 20L in size will be placed in each room and throughout the high school grounds. Garbage and recycling receptacles should be provided in convenient locations and areas of high waste generation. The students, staff and visitors will be responsible for placing their waste and recycling into the correct receptacle. The fullness of the source separation bins will be monitored by groundskeeper and cleaners.

The cleaners will circulate throughout the campus after hours and empty the waste and recycling receptacles situated throughout the school. The cleaners will then transport the waste and recycling to the bulk bins in the bin storage area and dispose of the waste and recycling into the appropriate bins.

5.4 WASTE COLLECTION PROCEDURES

A private waste collection contractor will be engaged to service the waste and recycling bins per an agreed schedule. The collections will be in accordance with the Department of Education's contracts with a private waste collection service. This report assumes that general waste and recycling will be collected three times weekly (approx. every 2 days).

On the day of service, a private waste collection vehicle will enter the site from Nirmal Street and park in the loading bay adjacent to the bin storage area.

The waste collection staff will collect the bins from the bin storage area. Once the bins are serviced, the collection vehicle will exit the site onto Nirmal Street in a forward direction.

5.5 OTHER WASTE MANAGEMENT CONSIDERATIONS

Based on the types of tenancies anticipated for this activity, the following waste management practices are recommended.

5.5.1 WASHROOM FACILITIES

Washroom facilities should be supplied with collection bins for paper towels (if used). Sanitary bins for female restroom facilities must also be arranged with an appropriate contractor.

5.5.2 PRINTING & PHOTOCOPYING ROOMS

It is recommended that rooms designed for printing or photocopying be provided with an area for the interim storage of paper receptacles, as well as separate receptacles for used toner and/or printer cartridges for recycling. The school management or nominated staff are responsible for monitoring these receptacles and ensuring that items are collected and recycled by an appropriate contractor.

5.5.3 BULKY & SPECIAL WASTE

Building management is responsible for managing bulky waste. Staff should contact the School caretaker when there is furniture or other large items that are broken or no longer required. Reusable furniture should be labelled and kept in storage or donated to a charitable organisation. Non – reusable furniture will be removed from the school grounds and disposed of at an appropriate recycling facility.

5.5.4 PROBLEM WASTE

The grounds keeper or school management is responsible for making arrangements for the disposal and recycling of problem waste streams with an appropriate contractor. Problem wastes cannot be placed in the general waste stream as they can have adverse impacts to human health and the environment if disposed of in landfill. Retail and commercial tenants must liaise with the groundskeeper when disposing of problem waste streams.

Problem waste streams include:

- Chemical Waste
- Liquid wastes
- Toner cartridges
- Lightbulbs
- eWaste
- Batteries

5.5.5 FUTURE WASTE AND RECYCLING STREAM SEPARATION

To design the bin storage area and waste facilities in the site, all possible waste and recycling streams have been grouped together into 'general waste' and 'general recycling'. This is to ensure the waste facilities have adequate capacity to manage total volumes of waste and recycling streams, regardless of the management of waste and recycling during operation.

Once the school is operational, the building management can choose to separate the general recycling stream and the general waste stream into more specific recyclable waste streams. This allows the site's waste management system to have greater potential to divert waste from landfill and contribute to wider environmental sustainability.

The more waste streams that are separated, the more complex the waste management strategy becomes. In turn, it is likely to increase operational cost, manual input of building caretaker and cleaners as well as the level of engagement required by all stakeholders involved in waste management. Therefore, it is recommended that the decision to separate and manage any additional waste streams comes from the building management, once the school is operational, and is directed by the operational experience and needs of the school.

As identified in NSW Department of Education *Educational Facilities Standards and Guidelines Requirement DG02 (2.7.2)* the waste streams that can be managed at schools are as follows;

- Food Organics and Garden Organics
- Co-Mingled Container Recycling
- Paper & Cardboard Recycling
- Container Deposit Scheme Recycling
- Soft Plastic Recycling
- General Waste
- Other waste streams such as batteries, e-waste, coffee cups

The building management can choose which waste streams are handled in the waste management strategy at any time by assessing the composition of waste and recycling generated in operation as well as the costs/benefits at that time.

The successful separation of the waste streams is significantly impacted by the behaviours of the waste generators and the key personnel who look after the waste management systems. The managers of the waste system will be the school management and grounds keeper.

The following are the key responsibilities required for successful ongoing source separation. These responsibilities should be taken into consideration when assessing whether to introduce the separation and management of more waste streams.

Responsibilities of the waste stream generator:

- Correctly identify the waste type.
- Place the waste item into the correct bin.
- Pending on waste item, partially dismantle waste item into different stream types (e.g. empty food waste into organics, lid into recycling and main container into landfill)

Responsibilities of the key staff managing the waste systems:

- Provide source separation bins in convenient locations.
- Monitor contamination of waste streams.
- Organise contracts with collection and recycling services of all waste streams.
- Educate waste stream generators on a ongoing basis
- Provide signage on all bins.
- Monitor and correct any issues.

If the management of any additional waste stream is introduced during operation, the building management would be responsible for setting up and maintaining the waste stream management procedures. Including;

- The provision of appropriate source separation bins around the campus.
- The update all waste related signage and waste management education material.
- The introduction of the collection bins of the waste stream in the Bin Storage Area.
- The reduction to the number of bins (or size of bins) for the general waste or general recycling stream being diverted.
- Engaging a specialist contractor to collect the bins and recycle the waste stream.
- Ensuring the collection timetables minimise conflicts with the loading area.
- Educating all staff and students on the new procedures, including which items are accepted in each bin.

Separation of food waste and soft plastic recycling streams will reduce the volume of general waste. Therefore, it is assumed that the number of general waste bins would go down by the corresponding number of food waste bins and or/soft plastic bins.

Separation of co-mingled recycling, paper & cardboard recycling and items refundable under the container deposit scheme will reduce the volume of general recycling. Therefore, it is assumed that the number of general recycling bins would go down by the corresponding number of co-mingled, paper & cardboard and refundable container bins introduced.

In addition, as identified in NSW Department of Education's *Educational Facilities Standards and Guidelines Requirement DG02 (2.7.2),* during operation the building management can implement measures to reduce the volumes of waste generated by;

- Examining all processes to determine where wastes are produced and to devise measure for waste prevention or reduction.
- Devising ways of recycling waste with students so they too can share in the savings (for example rewards for students who reduce waste).
- Partnering with other organisations to assist with waste minimisation.
- Keep track of changes and improvements
- Reusing drums, cartridges and containers where possible
- Selling or donating usable waste materials to other organisations.

6.0 STAKEHOLDER ROLES & RESPONSIBILITIES

The following table outlines the primary roles and responsibilities of the respective stakeholders:

Table 2: Stakeholder Roles and Responsibilities

Roles	Responsibilities
School Management	• Ensuring that all waste service providers submit regular (i.e monthly) reports on all equipment movements and waste quantities/weights; • Organising internal waste audits/visual assessments on a regular basis; and • Manage any non-compliances/complaints reported through waste audits.
School Management or Grounds Keeper	• Ensuring effective signage, communication and education is provided to students, staff and cleaners; • Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; • Ensuring site safety for students, visitors, staff and contractors; • Abiding by all relevant OH&S legislation, regulations, and guidelines; • Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers; • Preventing storm water pollution by taking necessary precautions (securing Bin Storage Area, preventing overfilling of bins) • Cleaning and transporting of bins as required; • Organising, maintaining and cleaning the general and recycled waste holding area; • Organising both garbage and recycled waste pick-ups as required; • Organising replacement or maintenance requirements for bins; • Organising bulky goods collection when required; and • Investigating and ensuring prompt clean-up of illegally dumped waste materials.
Cleaners, Staff and Students	• Dispose of all general waste and recycling in the allocated MGBs provided; • Ensure adequate separation of general waste and recycling; and • Comply with the provisions of Council and the OWMP.
Private Waste Contractor	• Provide a reliable and appropriate waste collection service; • Provide feedback to school management regarding contamination of recyclables; and • Work with school management to customise waste systems where possible.
Gardening/ Landscaping Contractor	• Remove all garden organic waste generated during gardening maintenance activities for recycling at an offsite location.
Building Contractors	• Removing all construction related waste offsite in a manner that meets all authority requirements.

7.0 SOURCE SEPARATION

Better practice waste management includes the avoidance, reuse, and recovery of unwanted items, which can be achieved through source separation. The table below outlines what is typically included in various waste streams and how they can be managed. Refer to your local council for a list of accepted materials. Planet Ark can be accessed online to find other facilities that recover unwanted items.

Table 3: Operational Waste Streams

Waste Stream	Description	Typical Destination	Waste Stream Management
General Waste	The remaining portion of the waste stream that is not recovered for re-use, processing, or recycling. May include soft plastics, food scraps, polystyrene, etc.	Landfill	Waste should be bagged before placing in the designated waste bins.
Recycling	A mixture of items that are commonly recycled usually segregated through a MRF. Typically include food and beverage containers (e.g. aluminium, glass, steel, hard plastics, cartons). Also included cardboard and paper products.	Resource Recovery Centre	Recycling must not be bagged, and instead should be placed loosely in the designated recycling bins. Cardboard should be flattened before placing in the designated recycling bin.
Secure Documents	Secure documents are printed paper materials that contain sensitive information.	Recycling Facility	Secure documents are placed in allocated secure document bins. Private contractor removes bins from site.
Green Waste	Green waste consists of unwanted organic materials that are easily biodegradable and/or compostable (e.g. lawn clippings, branches)	Resource Recovery Centre	Landscape Maintenance Contractors will remove the green waste from site during scheduled maintenance.
Electronic Waste	Discarded e-waste, electronic components and materials such as computers, mobile phones, keyboards, etc.	Resource Recovery Centre	A location should be dedicated to the storage of e-waste. When a suitable amount has been accumulated, the Grounds Keeper or school management is responsible for arranging the collection of e-waste with an appropriate recycling service.
Bulky Items	Items that are to too large to place into general rubbish collection. This includes disused and/or broken furniture, mattresses, white goods, etc.	Resource Recovery Centre or Landfill	A location should be dedicated to the storage of bulky waste. When a suitable amount has been accumulated, the Grounds Keeper or building management is responsible for arranging the collection of bulky waste with an appropriate recycling service.
Sanitary Waste	Feminine hygiene waste generated from female bathrooms.	Incineration or Landfill	Sanitary bins are serviced by sanitary waste contractor.
Other	Other recyclable items that require special recovery may include ink cartridges, batteries, chemical waste, fluorescent tubes, etc.	Resource Recovery Facility	Grounds Keeper or building management arranges collection by appropriate recycling services when required.

8.0 EDUCATION

The school management is responsible for creating and implementing the waste management education process.

Educational material encouraging the correct separation of garbage and recycling items must be provided to each staff member, cleaners and students to ensure the correct disposal of waste and minimise the possibility of contamination in the waste and recycling bins.

It is recommended that the school investigates programs to teach students about recycling and resource recovery. These programs can be implemented into the operation of the school to reduce overall waste generation.

8.1 SIGNAGE

Signage and education are essential components to support best practice waste management including resource recovery, source separation, and diversion of waste from landfill.

Signage should include:

- Clear and correctly labelled bins,
- Instructions for separating and disposing of waste items. Different languages should be considered,
- Locations of, and directions to, the waste storage areas with directional signs, arrows, or lines,
- The identification of all hazards or potential dangers associated with the waste facilities, and
- Emergency contact information should there be issues with the waste systems or services in the building.

The school management is responsible for waste room signage including safety signage. Appropriate signage must be prominently displayed on doors, walls and above all bins, clearly stating what type of waste or recyclables is to be placed in each bin.

All signage should conform to the relevant Australian Standards.

9.0 POLLUTION PREVENTION

The Groundskeeper shall be responsible for the following to minimise dispersion of site litter and prevent stormwater pollution to avoid impact to the environment and local amenity:

- Promoting adequate waste disposal into the bins
- Securing all bin rooms (whilst affording access to staff/contractors)
- Prevent overfilling of bins, keep all bin lids closed and bungs leak-free
- Taking action to prevent dumping or unauthorised use of waste areas
- Require collection contractor/s to clean up any spillage when clearing bins

10.0 BIN WASHING

The bins will be cleaned by the Groundskeeper and or cleaners periodically to ensure hygiene and minimise odour.

Bin washing can occur within the bin rooms, using the room clean down facilities (i.e tap connection and drain). Alternatively, a specialist bin washing contractor can be engaged to clean the bins to an agreed schedule. The specialist bin contactor would collect the bins from the bin holding area and clean the bins with their specialised vehicle.

11.0 BIN MOVING PATHS

Minimal movement of bins is anticipated for this site, as bins are to be collected directly from their storage location.

The cleaners are responsible for the transportation of receptacles from their designated operational locations to the collection area when full and returning them once emptied to resume operational use. Typically waste and recycling is transported using trollies containing other cleaning equipment.

Any movement of bins should minimise manual handling where possible, as bins become heavy when full. The school management must assess manual handling risks and provide any relevant documentation to key personal.

The routes along any bin moving paths should;

- Allow for a continuous route that is wholly within the property boundary.
- Be free from obstruction and obstacles such as steps and kerbs.
- Be constructed of solid materials with a non-slip surface
- Be a minimum of 300mm wider than the largest bin used onsite.
- If bins are moved manually, the route must not exceed a grade of 1:14.
- If a bin moving device is used, the route cannot exceed the maximum operating grade of the device. This is typically a grade of 1:4, however this will vary depending on the model of bin moving device acquired for the site.

These have been achieved as part of the design submitted for the REF.

12.0 WASTE ROOMS

The areas allocated for waste management are detailed in the table below and are estimates only. Final areas will depend on the waste storage area and bin layouts.

To design the school's bin storage area, all possible waste and recycling streams have been grouped together into 'general waste' and 'general recycling', as detailed in the table below. This is to ensure the waste facilities have adequate capacity to manage total volumes of waste and recycling streams, regardless of the management of waste and recycling during operation. At any time during the operation of the school, at the building management's discretion, the waste streams separated from the 'general waste' or 'general recycling streams can be adjusted general waste and general recycling can be separated into any of the following waste streams:

General Waste:

- Food waste and Garden Organics
- Soft Plastic Recycling
- Waste (landfill disposal only)

General Recycling:

- Co-Mingled Container Recycling
- Paper & Cardboard Recycling
- Container Deposit Scheme Recycling

As further separation of waste streams will reduce the volume of general waste or general recycling, it is assumed that the number of general waste bins or general recycling bins would go down by the corresponding number of bins. Thus, the space within Bin Storage Area required to store the bins should remain consistent.

Table 4: Waste Room Areas

Waste Room Type	Equipment	Estimated Area Required (m^2)	Actual Area Provided (m^2)
Bin storage area	7 x 1100L MGBs (General Waste) 5 x 1100L MGBs (Recycling)	35.0	42.5

The "estimated area required" in the table above have been calculated based on equipment requirements and/or bin dimensions with an additional 70% of bin GFA factored in for manoeuvrability. Other factors such as the shape of the room, position of the chutes, configuration of the equipment, access needs and position of the door may impact the size of the room required. Thus, a smaller or larger room size may also be suitable for purpose, as long as the room can accommodate the required equipment with adequate access.

The following table provides further waste room requirements, which will be achieved as part of the mitigation measures to be satisfied as part of the detailed design to be met prior to commencement of construction.

Table 5: Waste Room Requirements

Waste Room Type	Waste Room Requirements
Bin storage area	• The bin storage area must ensure that bins are screen from view from neighbouring residential properties and public land • In order to ensure staff safety, all bins should be arranged so they can be accessed without moving another bin • All doorways and passageways facilitating the movement of bins items should be 1.5 time wider than the largest bin. For 1100L Bins a doorway width of 1900mm is recommended.

13.0 CONSTRUCTION REQUIRMENTS

Bin storage area construction must comply with the minimum standards as outlined in *Blacktown Development Control Plan 2015,* in order to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area.

The *NSW Better Practice Guide For Resource Recovery In Residential Developments (2019)* also states that better practice bin storage areas should achieve more than the minimum compliance requirements, which are as follows:

- Ensuring BCA compliance, including ventilation. Where required, ventilation system must comply with AS1668.4-2012 The use of ventilation and air conditioning in buildings.
- Ensuring storage areas are well lit (sensor lighting preferred) and have lighting available 24 hours a day.
- Provision of bin washing facilities, including taps for hot and cold water provided through a centralised mixing valve. The taps must be protected from bins and be located where they can be easily accessed even when the area is at bin capacity.
- Floor constructed of concrete at least 75mm thick.
- Floor graded so that any water is directed to a sewer authority approved drainage connection to ensure washing bins and/or waste storage areas do not discharge flow into the stormwater drain.
- Provision of smooth, cleanable and durable floor and wall surfaces that extend up the wall to a height equivalent to any bins held in the area.
- Ensuring ceilings are finished with a smooth-faced non-absorbent material capable of being cleaned.
- All surfaces (walls, ceiling and floors) finished in a light colour.

13.1 ADDITIONAL CONSIDERATIONS

- Waste room floor to be sealed with a two-pack epoxy;
- All corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- Tap height and light switch height of 1.6m;
- Storm water access preventatives (grate);
- All walls painted with light colour and washable paint;
- Equipment electric outlets to be installed 1700mm above finished floor level;
- Optional automatic odour and pest control system installed
- If 660L or 1100L bins are utilised, 2 x 820mm (minimum) double-doors must be used;
- All personnel doors are hinged, lockable and self-closing;
- Conform to the Building Code of Australia, Australian standards and local laws; and
- Childproofing and public/operator safety shall be assessed and ensured
- Waste and recycling rooms must have their own exhaust ventilation system either;
    - Mechanically - exhausting at a rate of 5L/m² floor area, with a minimum rate of 100L/s minimum. Mechanical exhaust systems shall comply with AS1668.4.2012 and not cause any inconvenience, noise or odour problem; or
    - Naturally - permanent, unobstructed, and opening direct to the external air, not less than one-twentieth (1/20) of the floor area.

14.0 MITIGATION MEASURES

The table below presents a summary of measures to mitigate waste-related impacts during the construction and operational phases of the activity.

Table 6: Mitigation Measures

Mitigation Number/ Name	When is Mitigation Measure to be complied with	Mitigation Measure	Reason for Mitigation Measure
Waste reduction	Construction and Operation	Encourage practices that reduce waste generation at the source, such as using fewer materials or opting for less packaging.	Reducing waste at the source minimizes the volume of waste generated.
Recycling and Reuse	Construction and Operation	Implement recycling programs to recover valuable materials from waste.	Recycling conserves natural resources, reduces energy consumption, and lowers greenhouse gas emissions, helping to create a circular economy.
Education	Construction and Operation	Conduct campaigns to inform the community about proper waste disposal and the benefits of reducing waste.	Increasing public awareness leads to better waste sorting, reduces contamination in recycling streams.
Safe disposal Methods	Construction and Operation	Ensure proper management and disposal of all waste streams.	Effective waste management minimizes environmental contamination.
Monitoring and Reporting	Construction and Operation	Implement data collection and reporting systems for waste management activities.	Monitoring provides insights into waste generation patterns, helping identify areas for improvement and ensuring compliance with regulations.
Policy and Regulation Compliance	Construction and Operation	Regularly review and update waste management plans to comply with environmental regulations.	Compliance with regulations ensures that waste management practices are environmentally responsible.

In conclusion, this Operational Waste Management Plan, prepared by R. Jayaratnam supports the REF for the new high school in Tallawong. The report promotes best practice waste management, minimizing waste generation, and maximizing reuse. It ensures efficient design, storage, and equipment for sustainable operations.

15.0 USEFUL CONTACTS

EFC does not warrant or make representation for goods or services provided by suppliers.

LOCAL COUNCIL

Blacktown Council Customer Service	Ph: (02) 9839 6000	E: council@blacktown.nsw.gov.au

PRIVATE WASTE COLLECTION PROVIDER

Capital City Waste Services	Ph: 02 9599 9999	E: service@ccws.net.au
Sydney Waste	Ph: 02 8661 0031	
Waste Clear	Ph: 1300 525 352	E: admin@wastecleart.com.au

BIN MOVING DEVICE SUPPLIERS

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
Sitecraft	Ph: 1300 363 152	E: sales@sitecraft.com.au

BALER SUPPLIERS

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au

ORGANIC DIGESTERS AND DEHYDRATORS

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
Waste Master	Ph: 1800 614 272	E: hello@wastemasterpacific.com.au

COOKING OIL CONTAINERS AND DISPOSAL

Cookers	Ph: 1300 882 299	E: info@cookers.com.au
Auscol	Ph: 1800 629 476	E: sales@auscol.com

ODOUR CONTROL

Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au

SOURCE SPERATION BINS

Method Recycling	Ph: 0499 890 455	

BINS AND BIN EQUIPMENT

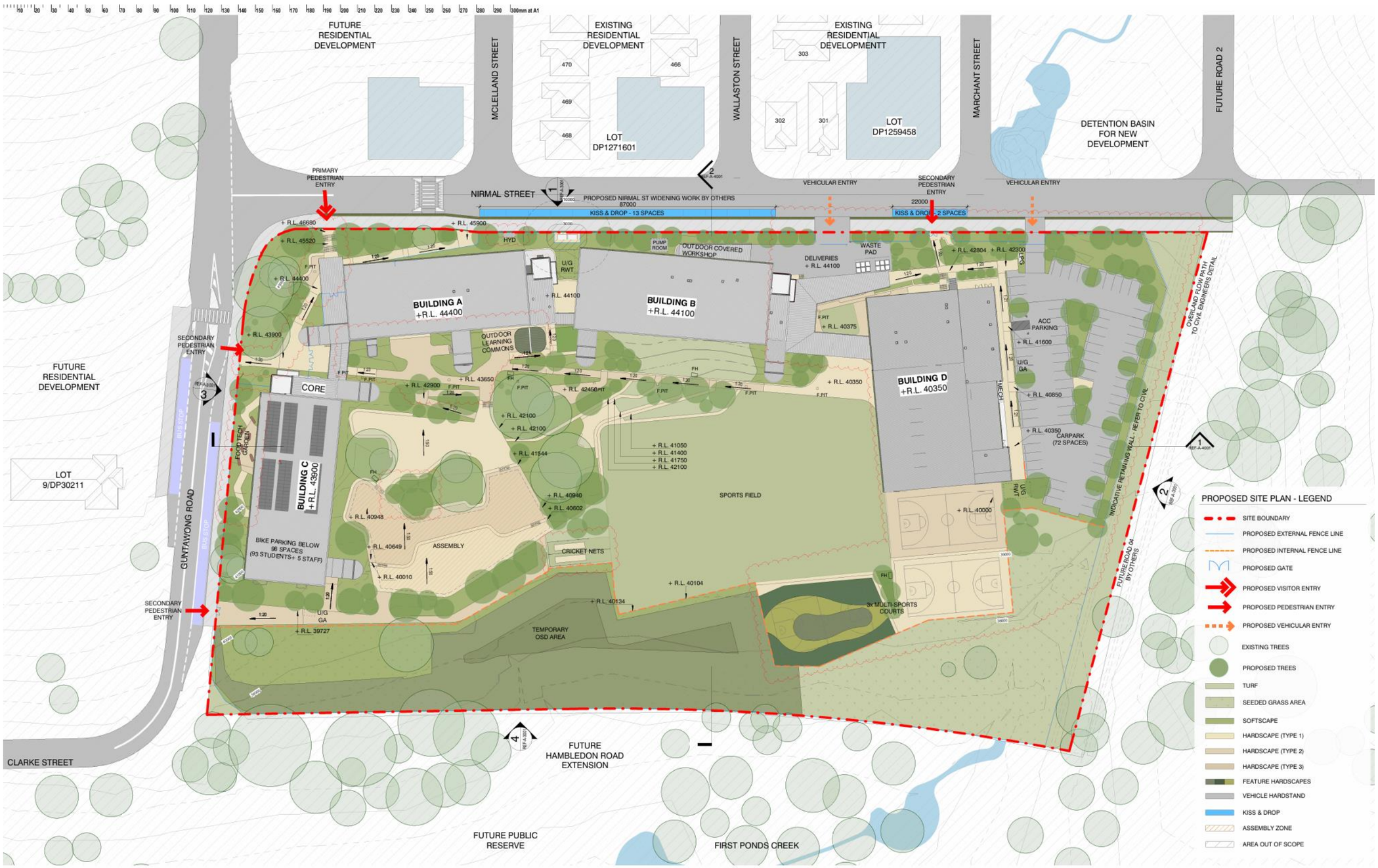
Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
SULO	Ph: 1300 364 388	E: sulosales@pactgroup.com

CHUTES, COMPACTORS AND EDIVERTER SYSTEMS

Elephants Foot Chute Solutions	Ph: 1300 435 374	E: chutes@elephantsfoot.com.au

APPENDIX A: ARCHITECTURAL PLANS

APPENDIX: A.1 SITE PLAN



Source: DJRD Architects, Project No. 24-411, Drawing No. STHS-DJRD-00-00-REF-A-0103, 22/11/2024; Rev. 09 – Site Plan

APPENDIX B: PRIMARY WASTE MANAGEMENT PROVISIONS

APPENDIX: B.1 TYPICAL BIN SPECIFICATIONS

Mobile bins

Mobile bins come in a variety of sizes and are designed for lifting and emptying by purpose-built equipment.

Mobile bins with capacities of up to 1700L must comply with *AS4123.6-2006 Mobile waste containers* which specifies standard sizes and sets out the colour designations for the bodies and lids of mobile waste containers indicating the type of materials they are used to collect.

The most common bin sizes are provided below, although not all sizes are shown. The dimensions are a guide only and differ slightly between manufacturers. Some bins have flat or domed lids and are used with different lifting devices. Refer to *AS4123.6-2006* for further details.

Table G1.1: Average dimension ranges for two-wheel mobile bins

Wheelie bin

Bin capacity	80L	120L		140L		240L	360L
Height (mm)	870	940	1065	1080	1100		
Depth (mm)	530	530		540		735	820
Width (mm)	450	485		500		580	600
Approximate footprint (m^2)	0.24	0.26–0.33		0.27-0.33		0.41–0.43	0.49
Approximate weight (kg)	8.5	9.5		10.4		15.5	23
Approximate maximum load (kg)	32	48		56		96	Not known

Sources include Sulo, Single Waste, Cleanaway, SUEZ, just wheelie bins and Perth Waste for two-wheel mobile bins

Table G1.2: Average dimension ranges for four-wheel bulk bins

Dome or flat lid container

Bin capacity	660L	770L	1100L	1300L	1700L
Height (mm)	1250	1425	1470	1480	1470
Depth (mm)	850	1100	1245	1250	1250
Width (mm)	1370	1370	1370	1770	1770
Approx footprint (m^2)	0.86–1.16	1.51	1.33–1.74	2.21	2.21
Approx weight (kg)	45	Not known	65	Not known	Not known
Approx maximum load (kg)	310	Not known	440	Not known	Not known

Sources include Sulo, Signal Waste, Cleanaway, SUEZ, Just Wheelie Bins and Perth Waste

Source: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

APPENDIX: B.2 SIGNAGE FOR WASTE AND RECYCLING BINS

Waste signs

Signs and educational materials perform several functions including:

- informing residents why it is important to recover resources and protect the environment
- providing clear instructions on how to use the bins and services provided
- alerting people to any dangers or hazards within the bin storage areas.

All waste, recycling and organic bins should be Australian Standard colours and clearly and correctly labelled, such as by a sticker on the lid and/or the body of the bin.

Communal bin storage areas should be clearly signposted with signs outlining how to correctly separate waste into the bins provided. The local council responsible for waste services may be a good source of signs and posters and can advise on what signs are suitable.

Information on who to contact to find out more about the recycling and/or other resource recovery services in the building should also be displayed in communal areas, such as on a noticeboard.

The Planet Ark website also has resources available free of charge for use by businesses and councils. These signs can be found at businessrecycling.com.au/research/signage.cfm

Figure I1.1: Examples of waste wall posters (EPA supplied)

Figure I1.2: Examples of bin lid stickers (EPA supplied)

Source: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

Problem waste signs

The EPA has also produced a range of images and signs that can be used for problem wastes, such as fluoro globes and tubes, household and car batteries, e-waste and smoke detectors. To access these resources, contact the NSW EPA. Some examples are shown below.

Figure I2.1: Problem waste signs

Safety signs

The use of safety signs for waste resource recovery rooms must comply with *AS1319 Safety signs for occupational environments*. Safety signs must be used to regulate and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Suitable signs should be decided for each development as required.

Figure I3.1: Example safety signs

Source: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

APPENDIX: B.3 EXAMPLE COLLECTION VEHICLE INFORMATION

General

Appropriate heavy rigid vehicle standards should be incorporated into the road and street designs in new developments where onsite collections are proposed. Road and street designs must comply with relevant Acts, regulations, guidelines, and codes administered by Austroads, Standards Australia, NSW Roads and Maritime Services, WorkSafe NSW and any local council traffic requirements.

Applicants and building designers should consult with councils and other relevant authorities before designing new roads or streets and access points for waste collection vehicles to establish specific design requirements.

Table H4.1: Australian Standards for turning circles for medium and heavy rigid class vehicles

Vehicle class	Overall length (m)	Design width (m)	Design turning radius (m)	Swept circle (m)	Clearance (travel) height (m)
Medium rigid vehicle	8.80	2.5	10.0	21.6	4.5
Heavy rigid vehicle	12.5	2.5	12.5	27.8	4.5

Source: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

Large collection vehicles

Waste collection vehicles may be side-loading, rear-loading, front-lift-loading, hook or crane lift trucks. Vehicle dimensions vary by collection service, manufacturer, make and model. It is not possible to provide definitive dimensions, so architects and developers should consult with the local council and/or contractors.

The following characteristics represent typical collection vehicles and are provided for guidance only. Reference to *AS2890.2 Parking facilities: off-street commercial vehicle facilities* for detailed requirements, including vehicle dimensions, is recommended.

Table B2.1: Collection vehicle dimensions

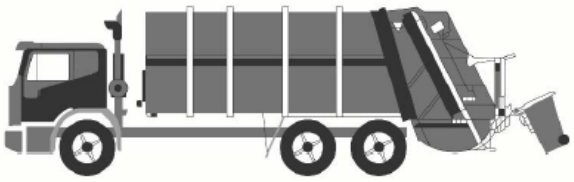
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0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

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

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

Rear-loading collection vehicles

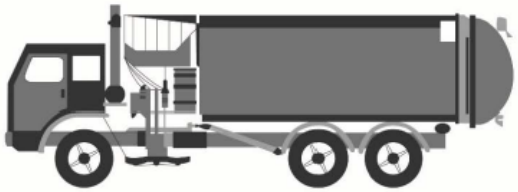
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



Rear-loading waste collection vehicle

Side-loading collection vehicles

This is the most commonly used vehicle for domestic waste, recycling and organics collections. It is only suitable for collecting mobile bins up to 360L in capacity.



Side-loading waste collection vehicle

Front-lift-loading collection vehicles

These vehicles are commonly used for collecting commercial and industrial waste. They can only collect specially designed front-lift bulk bins and not mobile bins.

Front-lift-loading waste collection vehicle

Small collection vehicles

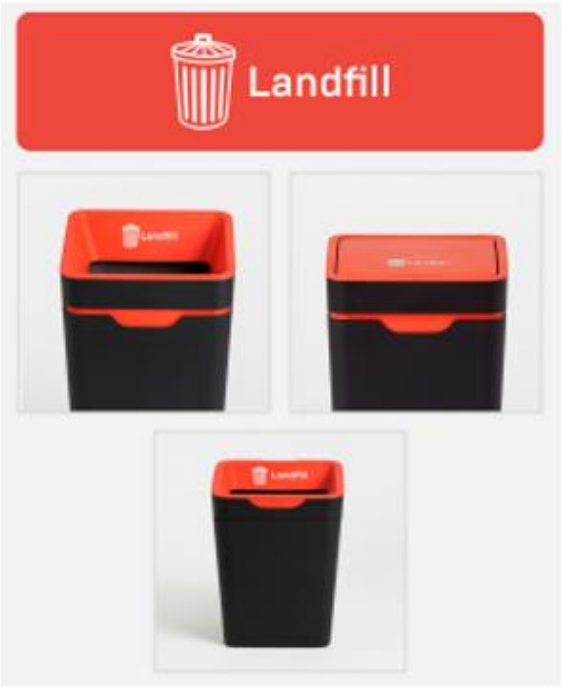
Typically, councils and their contractors operate with large collection vehicles (heavy rigid class vehicles) because they carry greater payloads and allow for more cost-effective collection services. Some councils, or their contractors, may have smaller collection vehicles in their fleet. Early discussion with the council is important to confirm this, but it should not be assumed that the council will have access to small collection vehicles.

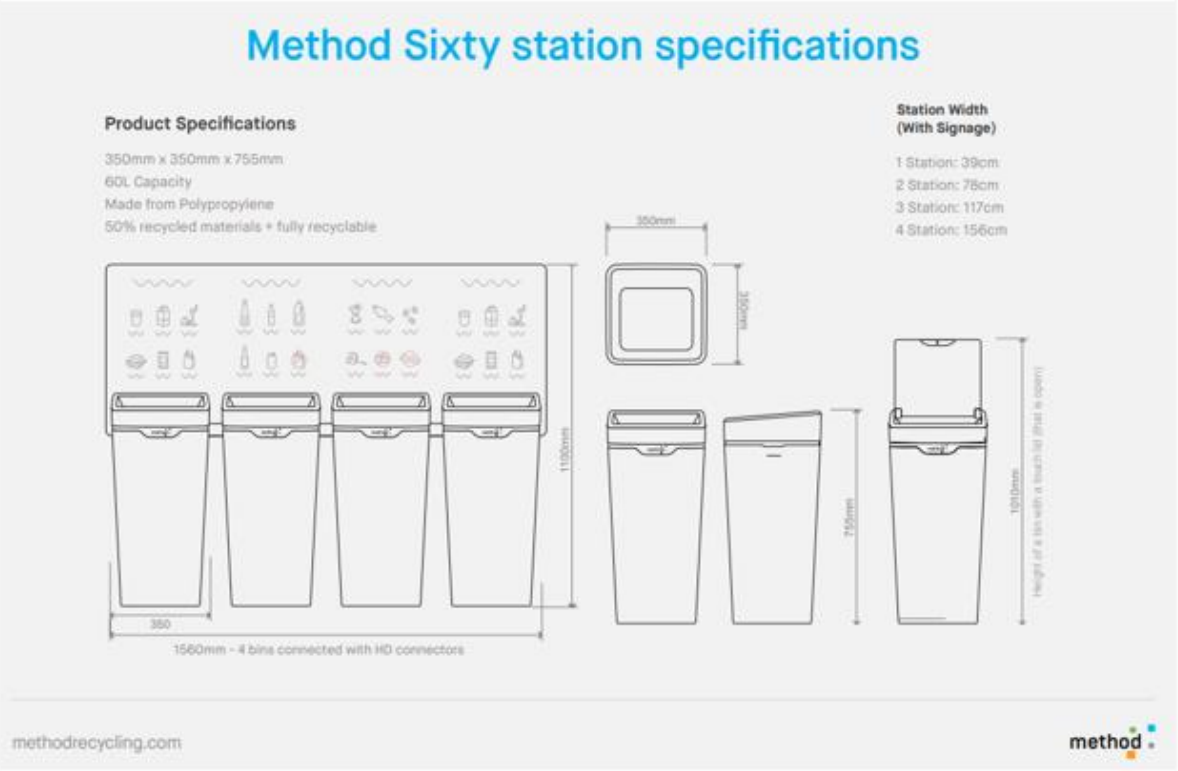
The waste management systems and the location of the collection point should always be designed so that the council can provide the standard domestic waste service.

Source: Better Practice Guide For Resource Recovery In Residential Developments 2019, NSW Environmental Protection Authority

APPENDIX C: SECONDARY WASTE MANAGEMENT PROVISIONS

APPENDIX: C.1 EXAMPLE SOURCE SEPARATION RECEPTACLES





Source: Method Recycling - www.methodrecycling.com