New High School for Googong
200 Wellsvale Dr, Googong NSW 2620
Educational Facility

OPERATIONAL WASTE MANAGEMENT PLAN

5/02/2025
Report No. 6359
Revision C

Client

NSW Department of Education
https://education.nsw.gov.au/

Architect

NBRS
https://nbrs.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

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	19/11/2024	S. Dib	T. McPherson	Draft
B	23/01/2025	T. McPherson	J. Parker	Amendment
C	05/02/2025	T. McPherson	J. Parker	Amendment

TABLE OF CONTENTS

LIST OF TABLES

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 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
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
L	Litre
LEP	Local Environmental Plan
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
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

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

Elephants Foot Consulting (EFC) has been engaged to prepare the following Operational Waste Management Plan (OWMP) for the New High School for Googong at 200 Wellsvale Dr, Googong NSW 2620.

Robust waste management strategies are required for new developments 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 and recycling provisions and procedures*** are established that will cater for potential changes during the operational phase of the development.

iii. ***Comply*** with all statutory requirements, policies, and guidelines.

To achieve these objectives, this OWMP identifies and details the following components:

- Waste streams expected to be generated onsite and anticipated volumes;
- Suitable bin sizes and quantities;
- Waste and recycling disposal procedures;
- Bin area size estimations and equipment recommendations; and
- Waste collection strategies, locations and frequencies.

It is vital 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 activity; 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 development.

The waste management of the construction phase of the activity are not addressed in this report. Reference is made to the Construction Waste Management Plan (CWMP), (revision C, dated 5th February 2025), prepared by EFC.

2.2 REPORT CONDITIONS

The purpose of this report is to document an OWMP as part of a development application, 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 such as 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 school management's approach to educating staff and students regarding waste management operations and responsibilities,
- School 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 finalised for the exhibition of the REF,
- 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,
- 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

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 include:

- Googong Development Control Plan 2010
- NSW Better Practice Guide For Resource Recovery In Residential Developments 2019
- 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
- NSW Net Zero Plan

4.0 DEVELOPMENT OVERVIEW

This Operational Waste Management Plan (OWMP) has been prepared by EFC on behalf of the NSW Department of Education (DoE) to inform a Review of Environment Factors (REF) for the proposed construction of a new high school for Googong (the activity) located at 200 Wellsvale Drive, Googong, NSW (the site).

The activity relates to the construction and operation of a new educational establishment to serve the needs of the growing Googong township by accommodating up to 700 students from years 7 – 12. Specifically, the activity includes the following:

- Building A, a three to four-storey building in the northern portion of the site, fronting Glenrock Drive, which will accommodate learning spaces and administrative functions of the school.
- Building B, a three-storey building in the north-west portion of the site, fronting Observer Street, which will accommodate learning spaces and administrative functions of the school.
- Building C, fronting Glenrock Drive, which will accommodate a school hall / gymnasium and canteen.
- Outdoor recreation areas, cricket nets, playing court and playing field.
- Main pedestrian entry established from Glenrock Drive.
- Car park and accessible pedestrian entry from Wellsvale Drive.
- Service entry from Observer Street.
- Associated civil works, earthworks, servicing and landscaping.
- Associated off-site works such as the construction of pedestrian crossings, drop off and pick up bays and a bus stop.
- School identification and wayfinding signage.

The REF describes the activity, documents the examination and consideration of all matters affecting, or are likely to affect, the environment, and details safeguards to be implemented to mitigate impacts.

The Department of Education is the determining authority for the project under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

5.0 INTRODUCTION

The site is identified in Figure 1 and the activity is shown in Figure 2.

Figure 1– Site Location Plan
Source: Mecone

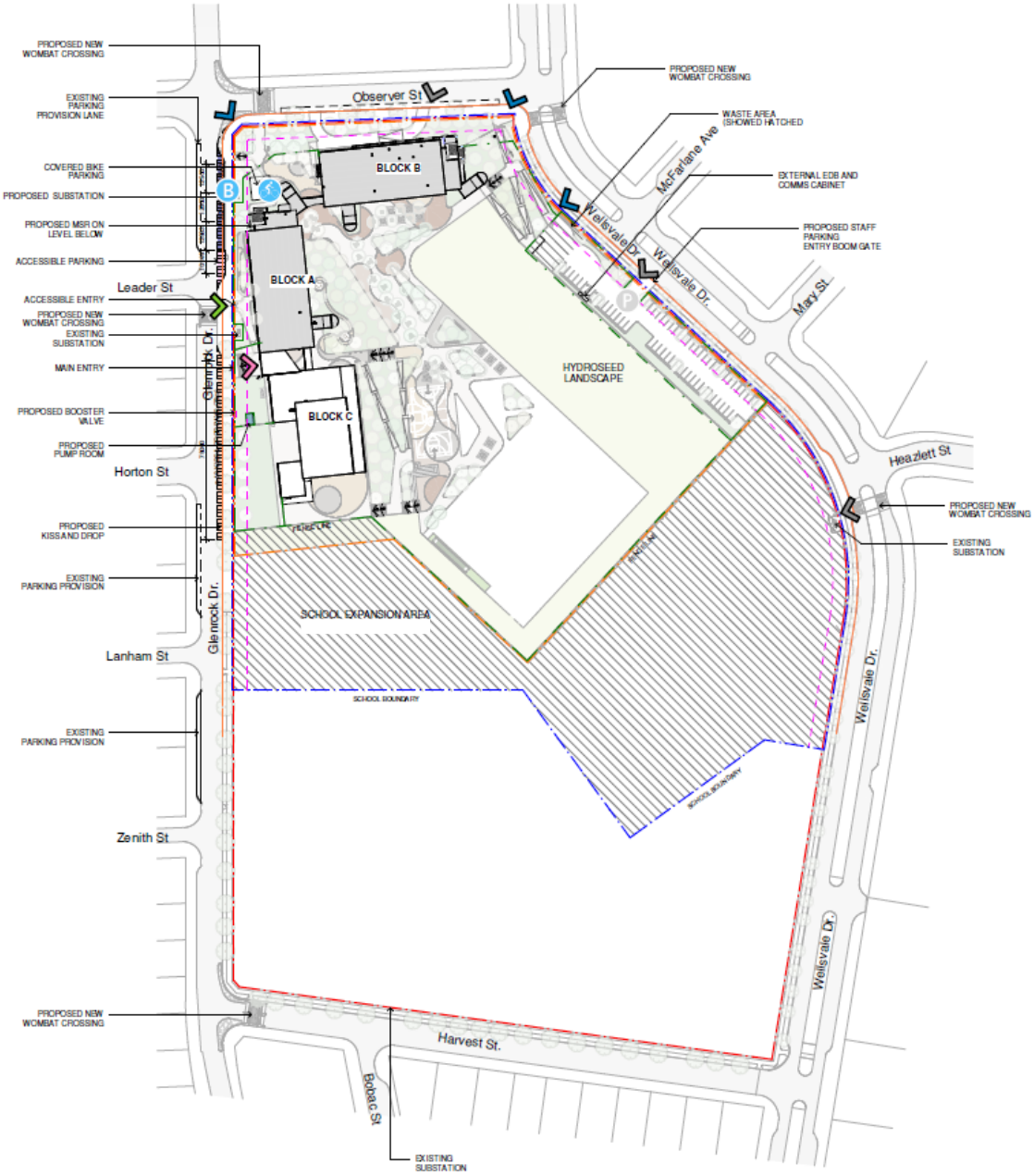


Figure 2 – New High School of Googong – indicative only, subject to detailed design
Source: NBRS, 20/01/2025

Googong is a new release area within the Queanbeyan-Palerang Local Government Area (LGA), located approximately eight kilometres south of Queanbeyan and 17 kilometres southeast of the Canberra Central Business District (CBD). Googong Reservoir, a significant waterbody, is located approximately 3 kilometres east of the subject site. Canberra Airport is located approximately 12 kilometres north of the subject site.

The site is legally described as Lot 829 in Deposited Plan 1277372. The proposed new high school site within this Lot has an area of approximately 5.84 hectares.

The site is currently zoned as R1 General Residential in the Queanbeyan Palerang Local Environmental Plan (LEP) 2022 and is located within Neighbourhood 2 of the Googong Masterplan, within the Googong DCP 2010. The site is surrounded by low-density residential development, recreational areas and a future local centre adjoining the site to the north.

The site is currently vacant with no existing structures and has been cleared of all trees and native vegetation. The site has an approximately 12 metre fall from the southwest corner of the site at RL ~763.550m Australian Height Datum AHD to the northeast at RL ~751.570m AHD.

6.0 SCHOOL WASTE MANAGEMENT

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

6.1 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 New High School for Googong. 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 school's' actual waste management practices. The following table shows the estimated volume (L) of general waste and recycling that will be generated.

Table 1: Estimated General Waste and Recycling Volumes

Category	# Students	General Waste Generation Rate (L/student/week)	Generated General Waste (L/week)	Recycling Generation Rate (L/student/week)	Generated Recycling (L/week)
High School	**700**	20	14000	15	10500
TOTAL	**700**		**14000**		**10500**
Bins & Collections		General Waste Bin Size (L)	4500	Recycling Bin Size (L)	4500
		General Waste Bins per Day	0.4	Recycling Bins per Day	0.3
		General Waste Collections per Week	3	Recycling Collections per Week	3
		Total General Waste Bins Required	**2**	**Total Recycling Bins Required**	**1**

6.2 BIN SUMMARY

The capacity 4500L bins will be serviced via front-lift vehicle, and will have the following bin quantities listed below:

General Waste: 2 x 4500L bins collected **3 x weekly.**
Recycling: 1 x 4500L bins collected **3 x weekly.**

Bins will also be required to be moved via the vehicle or forklift directly for collection. Bin sizes, quantities, and/or collection frequencies may be modified by the school management once the proposed development is operational. School 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.

6.3 WASTE DISPOSAL PROCEDURES

A bin holding area will be located at the Northern end of the car park (Eastern side of the site). The bin holding area will contain 4500L steel 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 holding 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 campus 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 the groundskeeper and cleaners.

On completion of each school day or as required, 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 will transport all general waste and recycling to the bin holding area, and dispose of the waste and recycling into the appropriate collection bins.

6.4 WASTE COLLECTION PROCEDURES

A private waste contractor will be engaged to service the school's general waste and recycling bins as per an agreed collection 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 3 times per week.

On the day of service, a private waste collection vehicle will enter the site from Wellsvale Dr and park adjacent to the bin storage area. Once the bins are serviced, the collection vehicle will exit the site onto Wellsvale Dr in a forward direction.

Waste collection is proposed to be collected during the off-peak periods to minimise peak traffic movements around the school. Please refer to the traffic report for more information.

6.5 OTHER WASTE MANAGEMENT CONSIDERATIONS

Based on the anticipated functions of the New High School for Googong, the following waste management practices are recommended.

6.5.1 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. Cleaners will circulate washroom facilities during their rostered hours, and will transport waste and recyclables to the bin holding area. Sanitary waste will be collected directly via a private contractor in accordance to their procedures.

6.5.2 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 cleaners or nominated staff are responsible for monitoring these receptacles and ensuring that items are transported collected and recycled by an appropriate contractor.

6.5.3 BULKY & SPECIAL WASTE

School management is responsible for managing bulky waste. Staff should contact management 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.

6.5.4 PROBLEM WASTE

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.

Problem waste streams include:

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

7.0 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	• Ensure all waste service providers submit monthly reports on all equipment movements and waste quantities/weights. • Organise internal waste audits/visual assessments on a regular basis. • Purchase any on-going waste management equipment or maintenance of equipment once building is operational; and • Manage any non-compliances/complaints reported through waste audits.
School Management or Grounds Keeper	• Co-ordinate general waste and recycling collections • Clean and transport bins as required. • Organise replacement or maintenance requirements for bins. • Organise, maintain and clean bin storage areas. • Investigate and ensure prompt clean-up of illegally dumped waste materials. • Prevent storm water pollution by taking necessary precautions (secure bin areas, prevent overfilling of bins). • Abide by all relevant WH&S legislation, regulations, and guidelines. • Provide staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management. • Assess any manual handling risks and prepare a manual handling control plan for bin transfers. • Ensure site safety for staff, students, visitors, staff and contractors; and • Ensure effective signage, communication and education is provided to students, staff, and cleaners.
Cleaners, Staff and Students	• Dispose of all general waste and recycling in the allocated bins provided; • Ensure adequate separation general waste and recycling streams; • Comply with the provisions of any public relevant authority and the OWMP; and • Flatten cardboard within the recycling bin.
Waste Collection Contractor	• Provide a reliable and appropriate bin 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 organics generated during gardening maintenance activities for recycling at an offsite location.

8.0 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 the Queanbeyan-Palerang Regional 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	General waste should be bagge before placing in in designate general 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, an instead should be placed loosely i the designated recycling bins. Cardboard should be flattene before placing in the designate recycling bin.
Garden Organics	Garden organics 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 garde organics from site during scheduled maintenance.
Secure Documents	Secure documents are printed paper materials that contain sensitive information.		Recycling Facility	Secure documents are placed i allocated secure document bins. Private contractor removes bin from site.
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 Waste 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 school 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 b 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 schoo management arranges collection b appropriate recycling services whe required.

9.0 EDUCATION

Educational material encouraging correct separation of general waste, and recycling must be provided to all staff and students. This should include the correct disposal process for bulky waste such as unwanted furniture, large discarded items, and other materials including electronic and chemical wastes. It is recommended that school management ensures that information is provided in multiple languages to support correct behaviours, and to minimise the possibility of contamination in communal bins.

Education and communication must be provided consistently on a regular basis to encourage behaviour change and account for transient building personnel such as new students, staff, or cleaning staff. Information should include:

- Descriptions of items accepted in the general waste and recycling streams (refer to Council guidance);
- How to dispose of bulky waste and any other items that are not general waste or recycling;
- Students and staff's obligations to health and safety as well as school management; and
- How to prevent cross contamination among waste streams.

9.1 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.

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.

10.0 POLLUTION PREVENTION

School management 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 areas (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

11.0 BIN WASHING

The bins will be cleaned by the cleaners periodically to ensure hygiene and minimise odour. Bin washing can occur within the bin storage area, using the area 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.

12.0 WASTE AREAS

The areas allocated for waste storage and collection areas are detailed in the table below and are estimates only.

Table 4: Waste Areas

Waste Area Type	Equipment	Estimated Area Provided (m^2)
Bin Area	**General Waste**: 2 x 4500L bins **Recycling:** 1 x 4500L bin	19

*Assumes waste areas are external, due to the head-height requirement for bins to be decanted into a front-lift vehicle.

EFC recommends bins sizes, collection frequencies and/or equipment for best practice waste management at this site, however EFC also acknowledges there are a range of other suitable options that may alter waste area requirements (e.g. floor area, accessibility, head height, etc.)

The waste areas have been calculated based on equipment requirements and/or bin dimensions with an additional 70% of bin GFA factored in for manoeuvrability. In addition, all doorways and passageways facilitating the movement of bins and/or bulky waste items must be wider than the largest bin proposed onsite.

The following table provides further waste area requirements.

Table 5: Waste Area Requirements

Waste Area Type	Waste Area Requirements
Bin Area	• Bins should be arranged so that all bins are accessible. Bins are not to be placed in front of one another or in such a way as to restrict access to the other bins for use. • Area must be well ventilated either naturally or mechanically in accordance with AS1668.4.2012 • Cleaning facilities such as hose hock and drainage for odour and hygiene control must be provided. • It is recommended a dustpan and broom is provided in this area for staff and cleaners to clean up unexpected spillages when using bins.

Elephants Foot Consulting have reviewed the architectural plans provided by NBRS; it is confirmed that the bin storage area have implemented the waste room requirements above.

13.0 USEFUL CONTACTS

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

LOCAL COUNCIL

Queanbeyan-Palerang Regional Council Customer Service	Ph: 1300 735 025	E: council@qprc.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

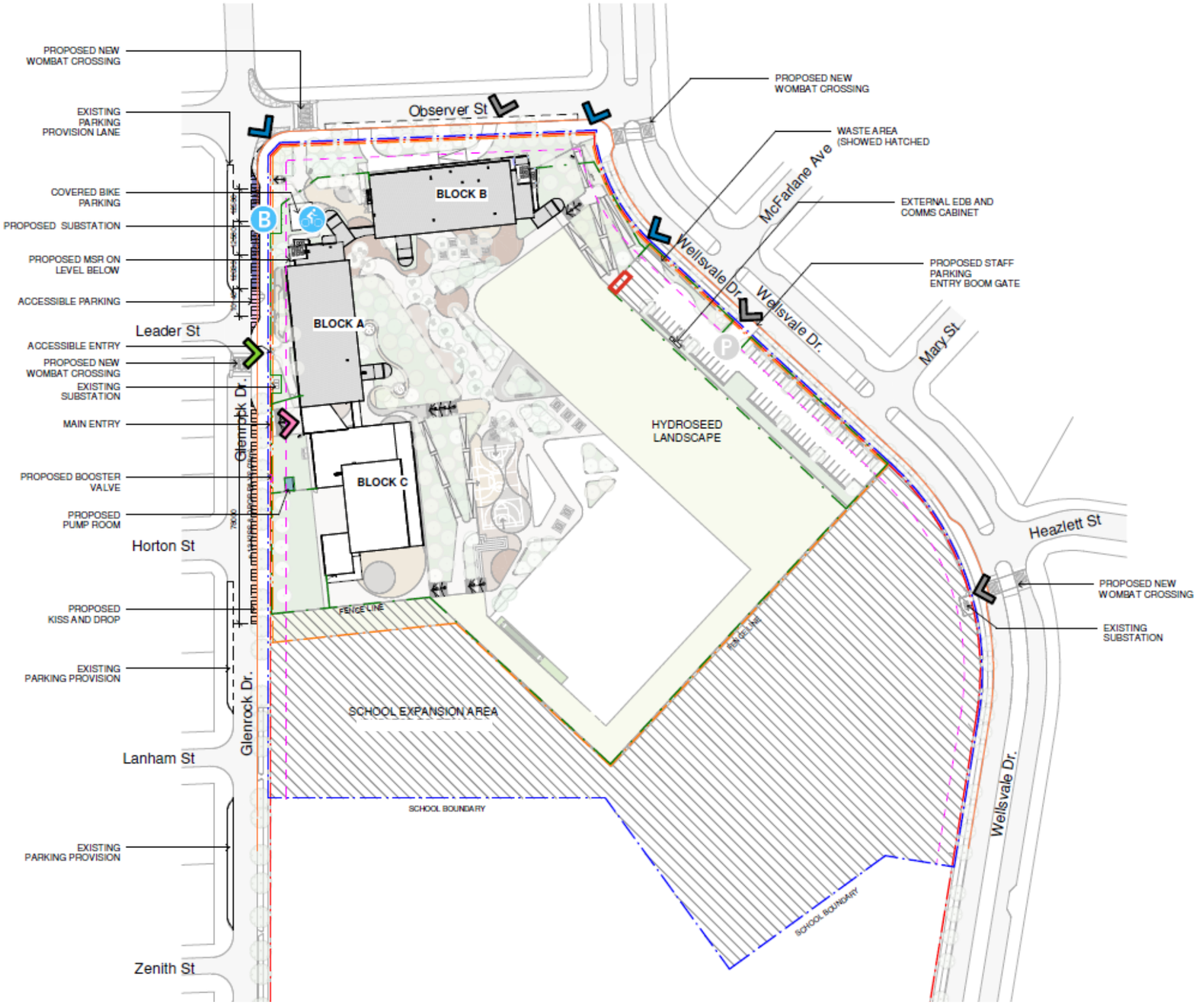
Elephants Foot Equipment	Ph: 1300 435 374	E: equipment@elephantsfoot.com.au
SULO	Ph: 1300 364 388	E: sulosales@pactgroup.com

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 GENERAL ARRANGEMENT PLAN



Source: NBRS, GGHS-NBRS-ZZ-ZZ-DR-A-00200, Rev 2, 20/01/2025 – 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)

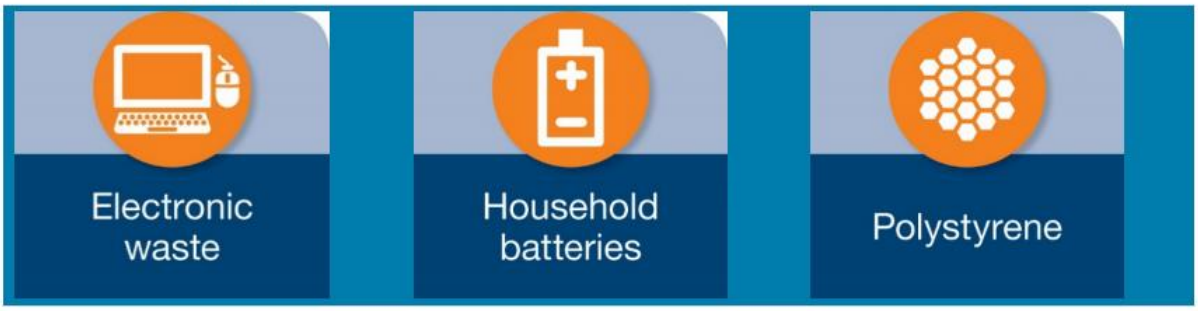
Figure I1.2: Examples of bin lid stickers (EPA supplied)

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

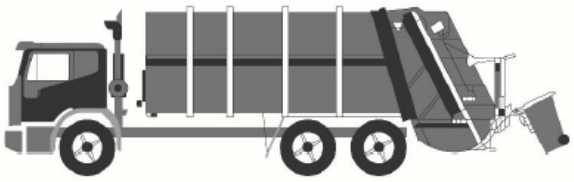
Vehicle type	Rear-loading	Side-loading*	Front-lift-loading	Hook truck	Crane truck
Length overall (m)	10.5	9.6	11.8	10.0	10.0
Width overall (m)	2.5	2.5	2.5	3.0	2.5
Travel height (m)	3.9	3.6	4.8	4.7	3.8
Operational height for loading (m)	3.9	4.2	6.5	3.0	8.75
Vehicle tare weight (t)	13.1	11.8	16.7	13.0	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

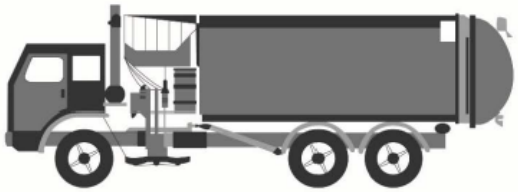
These vehicles are commonly used for domestic waste collections from MUDs and RFBs and sometimes for recycling. They can be used to collect waste stored in mobile bins or bulk bins, particularly where bins are not presented at the kerbside. They are also used for collecting bulky waste.



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 HANDHELD BIN MOVERS

movexx
smart electric tugs

MOVEXX T2500
BIN MOVER BATTERY ELECTRIC

Movexx T2500 Tow Tug is an extremely user friendly battery powered mobile towing unit that is ideal for applications where trolleys and rolling objects need to be moved from one place to another simply, efficiently and without physical effort. Some standard features included are: battery indicator, on board battery charger, battery, adjustable handle, dual speed and electric brake.

These units are fitted with an electromagnetic brake system for use on ramps and slopes

Features
- Electromagnetic brake for use on ramps and slopes
- Adjustable height handle

SPECIFICATION

MODEL	DIMENSIONS (MM)	OPTIONS	PULL - PUSH CAPACITY (KG)	BATTERY
T2500-D	511 (w) x 757 (l)	* Centre mount 2x 240 lt. wheelie bin attachment	2500	AGM batteries 2x 85AH up to 8 hrs continuous operation

TOWING CAPACITY - ON FLAT GROUND (all models)	TOWING CAPACITY - SLOPE (all models)
Towing up to 4x 660 lt. Wheelie Bin	Towing up to 2x 660 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)
Towing up to 4x 1100 lt. Wheelie Bin	Towing up to 1x 1100 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)
	**Electromagnetic brake for use on ramps and slopes

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Sitecraft - www.sitecraft.net.au

APPENDIX: C.2 EXAMPLE SEATED BIN MOVERS

MOTREC

MOTREC MT180
36V BATTERY ELECTRIC BIN MOVER

This hardworking tow device delivers outstanding performance. With its efficient motor and 4,500kg push-pull capacity.
The MT180 is ideal for moving bin trailer also narrow enough to fit through most door openings. From its all-steel construction to its all-wheel braking, this tow tractor is built for years of heavy use in total comfort and safety. All this combined with superior AC technology makes short work of though requests.

Features
- Front & rear brakes
- Pneumatic Tyres
- Comfortable ergonomic adjustable seat
- Complete with headlight, break lights, tailing lights & horn

SPECIFICATION

MODEL	DIMENSIONS (MM)	OPTIONAL EXTRAS	PULL - PUSH CAPACITY (KG)	BATTERY
MT180 36V	760 (w) x 2030 (l) x 1160 (h)	Flashing light on pole Conditional registration kit Cabin includes windscreen Weather Curtains	4500	48V TPPL battery pack, 157AH

TOWING CAPACITY - ON FLAT GROUND / SLOPE (all models) (all models)
Towing up to 5x 660 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)
Towing up to 4x 1100 lt. Wheelie Bin Up / Down maximum 25% (1:4 slope)

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Sitecraft - www.sitecraft.net.au

APPENDIX: C.3 EXAMPLE BIN TRAILERS

SITECRAFT
MATERIALS HANDLING EQUIPMENT

BIN TRAILER
WITH ALUMINUM RAMP

Bin trailer suitable for moving 240lt, 660lt and 1,100lt bins including a 1200mm rear ramp complete with locking latches and gas strut assist. Height draw bar fitted with a jockey wheel large pneumatic tyres with precision bearing hubs

SPECIFICATION

MODEL	DIMENSION (MM)	SUITABLE FOR MOVING	PART NUMBERS	REAR RAMP DIMENSION (MM)
4x Bins Trailer	Internal - 1560 (l) x 1200 (w) External - 2300 (l) x 1500	**4x 240lt.** Wheelie Bin **2x 660lt.** Wheelie Bin **1x 110lt.** Wheelie Bin	78811604	1200mm rear ramp complete with positive locking and gas strut assist
6x Bins Trailer	Internal - 2350 (l) x 1200 (w) External - 3100 (l) x 1500 (w)	**6x 240lt.** Wheelie Bin **3x 660lt.** Wheelie Bin **2x 1100lt.** Wheelie Bin	78811065	1200mm rear ramp complete with positive locking and gas strut assist
8x Bins Trailer	Internal - 3200 (l) x 1200 (w) External - 3900 (l) x 1500 (w)	**8x 240lt.** Wheelie Bin **4x 660lt.** Wheelie Bin **3x 1100lt.** Wheelie Bin	78811066	1200mm rear ramp complete with positive locking and gas strut assist
10x Bins Trailer	Internal - 3900 (l) x 1200 (w) External - 4600 (l) x 1500 (w)	**10x 240lt.** Wheelie Bin **5x 660lt.** Wheelie Bin **4x 1100lt.** Wheelie Bin	78811067	1200mm rear ramp complete with positive locking and gas strut assist

OPTIONS

- Full registration
- Upgrade Includes : Lights | Wiring | Suspension | aaa Tyres | Compliance Plate

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Sitecraft - www.sitecraft.net.au

APPENDIX: C.4 EXAMPLE BIN TOWING ATTACHMENTS

Logistec

UNIVERSAL BIN TOWING ATTACHMENTS

SUITE 660LT / 1100LT WHEELIE BINS

PARTS & FEATURES
Front Only - Part Number: 78811672
• Suit Sulo & Otto 600lt / 1100lt MGBs
• Spring loaded draw bar folds up
• No drilling of holes in the bin required
• Solidly fixed to the base of the bin using the castor mounting bolts
• Passivated zinc finish for long life
• Correct Rear Fixed or Directional Lock castors should be used
Rear Only - Part Number: 78811673
• Suit Sulo & Otto 600lt / 1100lt MGBs
• No drilling of holes in the bin required
• Solidly fixed to the base of the bin using the castor mounting bolts
• Passivated zinc finish for long life
• Correct Rear Fixed or Directional Lock castors should be used
For Steel Bin Front Only - Part Number: 78811781
• Suit Sulo & Otto 600lt / 1100lt MGBs
• No drilling of holes in the bin required
• Solidly fixed to the base of the bin using the castor mounting bolts
• Passivated zinc finish for long life
• Correct Rear Fixed or Directional Lock castors should be used
Direction Lock : 53191001
• Suit Sulo & Otto 600lt / 1100lt MGBs
• No drilling of holes in the bin required
• Solidly fixed to the base of the bin using the castor mounting bolts
• Passivated zinc finish for long life
• Correct Rear Fixed or Directional Lock castors should be used

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Sitecraft - www.sitecraft.net.au

APPENDIX: C.5 EXAMPLE BIN LIFTER FOR 240L BINS

versatip

Versatip Bin Tipper – 1500mm Tip

Specifications

Product Code	69121009
Product Name	1500mm Tip – Battery Powered
Capacity (kg)	250
Height (mm)	2085
Length (mm)	1330
Power Source	Battery Powered
Tipping Height (mm)	1500
Width (mm)	990

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Elephants Foot Equipment - www.elephantsfoot.com.au/equipment/

APPENDIX: C.6 EXAMPLE BALER

EF 300

This baler is suitable for premises with substantial waste. It produces an excellent bale of plastic or cardboard. It is an excellent starter machine for mill size bales.

EF300 baler produces bales of cardboard up to 250kg, making it possible to gain revenue on bales. It can be used to bale a range of materials including plastic and cardboard.

Features

- Two hand control for safe bale ejection
- Produces up to 250 kg bale cardboard which can be sold
- Visual bale full indicator informs operator when bale is full
- Automatic cycle saves labour time
- User friendly push button controls
- Robustly constructed for long life
- IP55 rated so machine can be situated outdoors

Excellent starter machine for mill size bales

Two hand control for safe bale ejection.

IP55 rated so machine can be situated outdoors

The robust construction ensures a long life span.

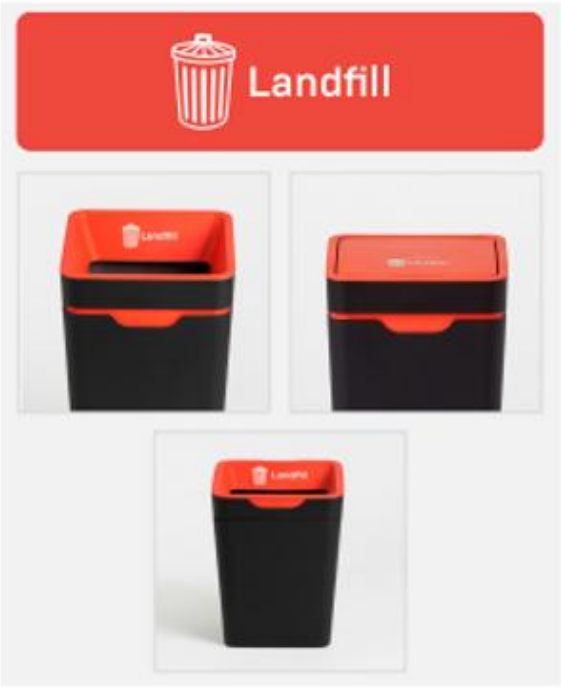
Specifications

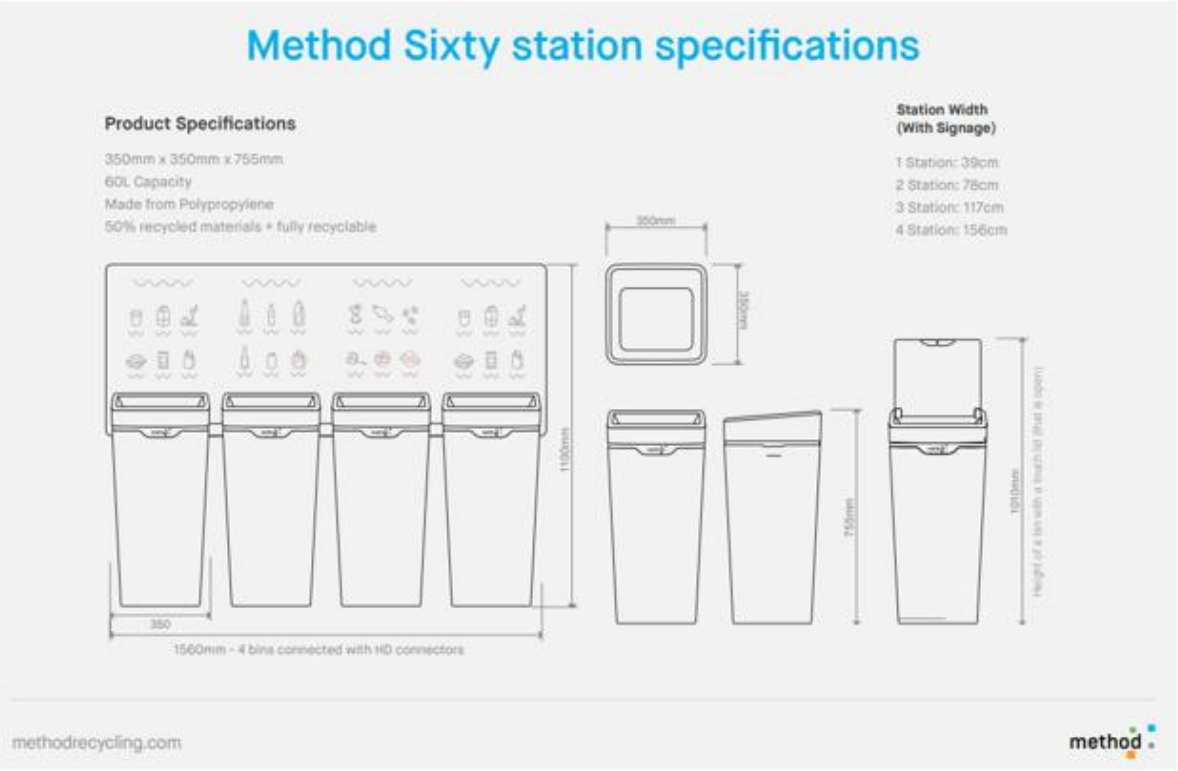
Dimensions HxWxD	2900x1500x1050
Feed Opening L x H	1100x500
(mm) Weight (Kg)	1900
Cycle Time (sec)	30
Compaction Force (T)	30
Power Supply (V)	415v 3 phase 20A
Motor (kW)	5.5kw
Chamber Height (mm)	1400
BALE DIMENSIONS	
HxWxD (mm):	900x700x1100
Bale Weight (kg):	Up to 250 (cardboard)

Please Note: This is an example only – please contact supplier for specific recommendations.

Source: Elephants Foot Equipment - www.elephantsfoot.com.au/equipment/

APPENDIX: C.7 EXAMPLE SOURCE SEPARATION RECEPTACLES





Source: Method Recycling - www.methodrecycling.com