

INDUSTRIAL, COMMERCIAL AND MIXED-USE WASTE MANAGEMENT GUIDELINES

BACKGROUND

Waste management practices of all proposed developments need to consider tenant, public amenity and safety at all stages of the waste management process, including storage, transport and collection.

1. INTRODUCTION: DESIGN PRINCIPLES

1.1 WASTE MANAGEMENT CONSIDERATIONS

It is essential that new **Commercial and Industrial** developments select and provide a waste management system that is responsive to the development's need.

To ensure new developments are able to access a waste service in an efficient and effective manner, the following must be taken into consideration in the assessment of development applications:

- Site planning of the development accommodates on-site waste collection and allows the waste collection vehicle to enter/exit, manoeuvre within the site and access the nominated collection point in a safe and efficient manner.
- Site planning of the development ensures amenity and safety of all users (tenants, caretakers, cleaners and waste collection staff) at all stages of the waste management process.
- Waste management system selection ensures that it is safe and convenient for tenant use; and
- Adequate waste storage area(s) are provided within the development to store all required waste bins.

1.2 UNDERSTANDING WASTE COLLECTION SERVICES

New developments are required to provide tenants with access to respective waste streams. The design of the proposed developments will need to consider how the waste management systems will be effectively integrated with overall design.

Standard waste collection services for Industrial or Commercial developments is an on-site collection service, where a nominated bin collection point and loading area is provided. To enable a safe and efficient service, the waste collection vehicle will be required to enter and exit the site in a forward direction.

2. SERVICE REQUIREMENTS

2.1 DEVELOPMENT CLASSIFICATION

The following controls relate to developments outlined within Part D – Land Use Controls of the Penrith Development Control Plan 2014:

- D3 Commercial and Retail Development
- D4 Industrial Developments
- D5 Other Land Uses

Note: Mixed-use developments to provide residential on-site waste collection and supporting infrastructure in accordance with the '*Residential Flat Building Waste Management Guideline*' Document.

2.2 ON-SITE WASTE COLLECTION

Waste collection vehicles proposed to service commercial and industrial developments are to be designed in accordance with the vehicle specifications outlined in section 3.5.

2.2.1 On-site Collection

The vehicle must be able to safely and efficiently access the site and the nominated collection point to perform on-site waste collection. There must be sufficient manoeuvring area on-site to allow the collection vehicle to enter and exit the site in a forward direction and service the development efficiently with little or no need to reverse.

2.2.2 Architectural Plans

Scaled architectural plans are required to support the development application which demonstrate the site's entry point, vehicle's route of travel and manoeuvring comply with a standard waste collection vehicle (section 3.5).

2.2.3 Swept Path Models

Swept path models to be provided illustrating how a standard waste collection vehicle (section 3.5) will enter, service and exit the site. A 0.5m unobstructed clearance is required from all obstructions for the vehicle's ingress and egress manoeuvres. The model to provide on-street parking on both sides of the road adjacent to the development to demonstrate unobstructed access during a 'business as usual' configuration.

2.2.4 Service Clearances

For rear loaded vehicles an additional 2m unobstructed loading zone is required behind the vehicle for the loading of 660L and 1,100L bins. Additionally, a 0.5m side clearance is required on either side of the vehicle for driver movements and accessibility.

2.2.5 Route of Travel for Collection Vehicle

The route of travel of the collection vehicle to the designated loading bay is to satisfy the dimensions of standard waste collection vehicle. To support unobstructed access adequate driveways and ramps of sufficient strength are required to support waste collection vehicle movements.

A structural engineer's report is required to be submitted accompanying the Waste Management Plan. The report to confirm all infrastructure used for vehicle ingress and egress movements can support the vehicle's 'gross weight' outlined within section 3.5.

2.2.6 Plan of Operations

All development applications to be submitted with accompanying 'Plan of Operations', outlining proposed; Bin Infrastructure Sizes, Collection Frequency, Waste Collection Vehicle Dimensions, Hours of Collection and Access to Waste Collection Room.

2.3 SITE RESTRICTED DEVELOPMENTS

There may be site characteristics that restrict the opportunity for the developments design to accommodate a standard waste collection vehicle entering and exiting the site in a forward direction. These site characteristics may include the width of the development site and its topography. There may be circumstances where the applicant is able to demonstrate an improved design outcome is achieved responsive to urban design, planning and waste collection operational specifications on-site by not accommodating the vehicle entering and exiting the site in a forward manner.

NOTE: This outcome is not acceptable on arterial roads, high vehicle and pedestrian movement areas and developments adjacent to schools.

2.3.1 Alternative Solutions

To apply for alternative solutions on restricted sites the following will need to be addressed and submitted:

- The onus is on the applicant to demonstrate that:
 - An improved planning outcome is achieved for the site; and
 - Site characteristics restrict or limit the development accommodating waste collection vehicles entering and exiting in a forward direction
- The applicant must also demonstrate that the waste collection vehicles alternative access manoeuvre to the proposed on-site loading bay does not compromise public, resident and contractor safety.
- The development application must be supported by scaled plans illustrating the swept paths required for the standard waste collection vehicle to enter the site in a single movement. The plans are to identify any features on-site or within the road reserve that may restrict or inhibit vehicle movements.
- All alternative solutions will be viewed and assessed by Council's Waste and Resource Recovery Department.

2.3.2 Alternative Solution Proposals

Alternative solutions may be proposed to Council for review. These solutions are permitted in circumstances where all options to accommodate vehicle entry and exit in a forward direct have been explored and deemed unviable by Council's Waste and Resource Recovery Department.

3. WASTE COLLECTION INFRASTRUCTURE

3.1 BIN INFRASTRUCTURE

The bin dimensions provided reflect typical bins used to service waste streams within commercial and industrial developments:

3.1.1 Rear Lift Bins

Size	Height (mm)	Depth (mm)	Width (mm)
240L Bin	1100	740	600
660L Bin	1400	1260	800
1100L Bin	1330	1240	1090

Table 1: Standard Bin Size and Dimensions (Note: sizes may vary with manufacturers)



Figure 1: Image of typical 240L, 660L and 1100L waste collection bins

3.1.2 Front Lift Bins

Size	Height (mm)	Depth (mm)	Width (mm)
1.5m ³ Bin	1190	1080	2070
3.0m ³ Bin	1540	1520	2060
4.5m ³ Bin	1850	1860	2050

Table 2: Standard Bin Size and Dimensions (Note: sizes may vary with manufacturers)

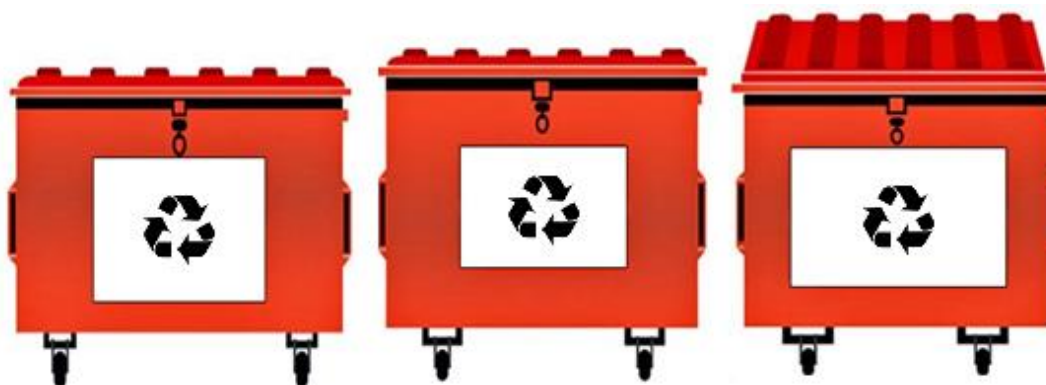


Figure 9: Image of typical 1.5m³, 3.0m³ and 4.5m³ waste collection bins

3.2 LIFTING THE BAR PROVISIONS

Alternative and innovative waste collection solutions and technologies can be proposed for new developments. These solutions will need to address and exceed the objectives outlined in Penrith's C5 Development Control Plan. A meeting is advised with Council's Waste and Resource Recovery Department to explore the innovative solutions proposed prior to pre-lodgement and formal submission of the development application.

3.3 MODEL WASTE GENERATION RATES

3.3.1 Food Premises

Type of Premise	Residual Waste Generation	Recycling Generation
Restaurant	660L/100m ² floor area/day	200L/100m ² floor area/day
Supermarkets	660L/100m ² floor area/day	240L/100m ² floor area/day
Convenience Store	300L/100m ² floor area/day	150L/100m ² floor area/day
Cafe	300L/100m ² floor area/day	200L/100m ² floor area/day
Takeaway/Café (pre-packaged food)	150L/100m ² floor area/day	150L/100m ² floor area/day
Childcare	80L/100m ² floor area/day	80L/100m ² floor area/day
Licensed club	50L/100m ² floor area/day	50L/100m ² floor area/day

Table 3: Model waste generation rates for food premises

3.3.2 Specialty Food Premises

Type of Premise	Residual Waste Generation	Recycling Generation
Butcher	80L/100m ² floor area/day	50L/100m ² floor area/day
Delicatessen	80L/100m ² floor area/day	50L/100m ² floor area/day
Fish Shop	80L/100m ² floor area/day	50L/100m ² floor area/day
Green grocer	240L/100m ² floor area/day	120L/100m ² floor area/day

Table 4: Model waste generation rates for specialty food premises

3.3.3 Accommodation

Type of Premise	Residual Waste Generation	Recycling Generation
Hotel/Motel	5L/bed/day	5L/bed/day

Table 5: Model waste generation rates for accommodation

3.3.4 Non-Food Premises

Type of Premise	Residual Waste Generation	Recycling Generation
Education/Training (Teaching Space)	5L/100m ² floor area/day or 0.5L/student/week	5L/100m ² floor area/day or 0.5L/student/week
Offices	10L/100m ² floor area/day	10L/100m ² floor area/day
Shops (no food)	50L/100m ² floor area/day	50L/100m ² floor area/day
Show Rooms	40L/100m ² floor area/day	10L/100m ² floor area/day
Warehouse (office)	10L/100m ² floor area/day	10L/100m ² floor area/day
Gym	10L/100m ² floor area/day	50L/100m ² floor area/day
Hairdresser	60L/100m ² floor area/day	50L/100m ² floor area/day

Table 6: Model waste generation rates for non-food premises

3.3.5 Alternate Use

For commercial and industrial waste streams that are not outlined in section 3.3, supporting documentation is required to validate the proposed volumes for the respective waste streams.

3.4 ON-SITE WASTE COLLECTION INFRASTRUCTURE

3.4.1 Waste Collection Room

All developments are required to provide a waste collection room integrated wholly within the developments built form to permit a safe and efficient waste collection service. The room will need to incorporate the following into its design:

- The room is to be large enough to accommodate the entire fleet of bins plus 0.2m between bins to allow adequate manoeuvrability (refer to section 3.1 & 3.3).
- 1.8m unobstructed clearance zone between the stored bins and the entrance to permit access and manoeuvrability.
- The room to provide suitable dual door access for the service of bins with a minimum width of 1.8m and accessed by a minimum 1.8m unobstructed access corridor.
- The room is to be located within close proximity to the on-site loading bay.
- The room is to be fully enclosed, walled and not permit through access to other on-site waste infrastructure.
- The floor is to be waterproofed, non-slip and sealed in accordance with the Building Code of Australia to permit the use of wash facilities.
- The floor is to be graded to a central drainage point connected to the sewer, enabling all waste to be contained and safely disposed of.

- The room is to be partitioned and enclosed with a minimum 2.7m unobstructed internal room height in accordance with the Building Code of Australia.
- The room is to be provided with an adequate supply of water through a centralised mixing valve and hose cock.
- The room to incorporate adequate lighting and natural/mechanical ventilation in accordance with the Building Code of Australia.

3.5 WASTE COLLECTION VEHICLES

3.5.1 Rear Loaded Waste Collection Vehicle

The following dimensions are provided for a standard heavy rigid vehicle as identified in Australian Standard 2890.2:

Vehicle Classifications	Heavy Rigid Vehicle Dimensions
Overall Length (m)	10.5
Operational Length (m)	12.5
Design Width (m)	2.8
Design Height (m)	3.7
Swept Circle (m)	22.5
Clearance (travel height) (m)	4.5
Roadway/ramp grade (max)	1:6.5 (15.4%)
Rate of change of grade (max)	1:16 (6.25%) in 7.0m of travel
Gross Weight (max tonnes)	28.0
Front Chassis Clearance	13°
Rear Chassis Clearance	16°

Table 3: Standard dimensions in accordance with AS 2890.2

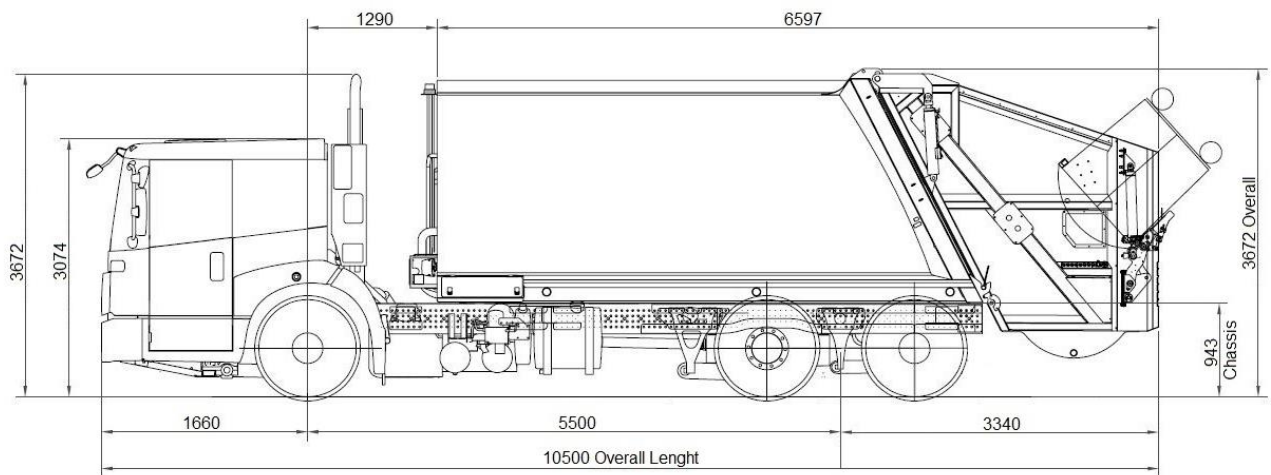


Figure 5: 10.5m Heavy Rigid Waste Collection Vehicle specifications

3.5.2 Front Loaded Waste Collection Vehicle

The following dimensions are provided for a standard heavy rigid vehicle as identified in Australian Standard 2890.2:

Vehicle Classifications	Heavy Rigid Vehicle Dimensions
Overall Length (m)	10.5
Operational Length (m)	12.5
Design Width (m)	2.8
Design Height (m)	4.1
Operational Height (m)	+4.5m (specific to bins proposed)
Swept Circle (m)	22.5
Clearance (travel height) (m)	4.5
Roadway/ramp grade (max)	1:6.5 (15.4%)
Rate of change of grade (max)	1:16 (6.25%) in 7.0m of travel
Gross Weight (max tonnes)	28.0
Front Chassis Clearance	13°
Rear Chassis Clearance	16°

Table 4: Standard dimensions in accordance with AS 2890.2

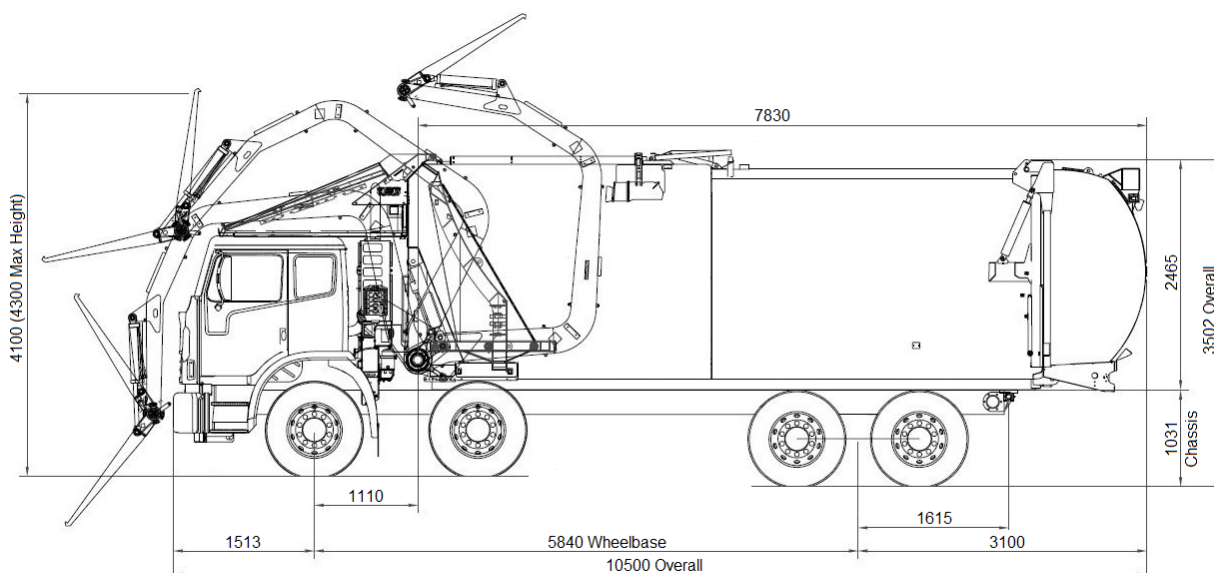


Figure 5: 10.5m Heavy Rigid Waste Collection Vehicle specifications

4. GLOSSARY

The following are standard terms used within this document:

Term	Definition
Bulk Bins	Large bins which have four swivel wheels so can be moved in any direction.
Collection Point	The nominated point from which waste and recycling is collected by the respective waste collection contractor.
Loading Area	The area provided adjacent or within proximity to the waste bin holding area that enables the waste collection vehicle to park and service the development.
Heavy Rigid Vehicle	Heavy Rigid Vehicle is defined as per Australian Standard 2890.2
Mobile Garbage Bins	Small bins that have two wheels so can only be moved forwards and backwards (not sideways).
Waste Collection Area	The nominated area within the development site where the bins will be carted to (from storage area) and temporarily stored for collection.