

WASTE MANAGEMENT GUIDE FOR NEW DEVELOPMENTS



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1.1

WHAT IS THE WASTE MANAGEMENT GUIDE?

This Guide is a valuable resource to improve the design and functionality of waste management systems within new developments.

This Guide has been prepared to assist you to achieve the objectives of and comply with Council's planning controls. The Guide will also help you:

- Facilitate access to Council's standard waste service;
- Provide suitable waste management systems in new developments that are efficient and effective;
- Provide opportunities for recycling in all stages of your development to help meet NSW Waste Avoidance and Resource Recovery Strategy targets; and
- Avoid delays in the assessment process so your Development Application (including your Waste Management Plan) contains all necessary information required.

1.2

OBJECTIVES OF THE GUIDE

- Ensure the design and operation of waste management systems within new developments are consistent with Council's commitment to building and creating a Sustainable City;
- Ensure all developments are provided with adequate provisions for waste storage that minimises impacts on the environment and protects amenity for occupants of the development and adjoining properties;
- Ensure waste collection from new developments can be serviced by Council's standard service with minimum traffic disruption and maximises public and contractor safety;
- Clearly outline the requirements for the management of waste in new developments to streamline the development assessment process.

1.3

APPLICATION OF THE GUIDE

It is important that waste issues are not overlooked in the design process. The Guide provides details of Development Application requirements to assist in the preparation of your application and Waste Management Plan to streamline the development assessment process.

It focuses on ensuring all developments implement optimal waste management systems that are fully integrated with Council's servicing system. Everyone involved in the design and construction process of your development can use the Guide including designers, architects, town planners, engineers and builders.

2. WASTE MANAGEMENT AND THE DEVELOPMENT APPLICATION PROCESS

Waste management must be considered at the design and planning stage of a development.

Consideration of waste management at this early stage will ensure appropriate waste facilities are provided to meet the needs of the development. In addition, early planning will ensure costly design amendments are not required at a later stage, reducing delays in the assessment process.

2.1 DEVELOPMENT APPLICATION SUBMISSION REQUIREMENTS

A Waste Management Plan (WMP) is required to accompany all Development Applications and should comply with the requirements contained within this Guide.

The WMP is an important planning document that will not only be utilised as part of the Development Application process, but during construction and for the ongoing use of the development. Where relevant, the WMP will continue to apply as a working reference for the life of the development. Conditions of consent will be used to enforce the commitments contained within the WMP.

On this basis, it is vital for developers and those involved in all aspects of your development to be aware of the requirements and commitments of the WMP.

Council has a WMP template to support all Development Applications which addresses the demolition, construction and ongoing operation of the development. It is mandatory to use Council's WMP template.

3. WASTE MANAGEMENT CONSIDERATIONS FOR RESIDENTIAL DEVELOPMENTS

3.1 GENERAL CONSIDERATIONS

In selecting the appropriate waste management system for your development, it is important to consider the number of bins required and how all allocated bins will be stored within the development.

It is also essential to have a clear understanding of Council's servicing requirements to ensure bin storage areas and collection points are integrated into the overall development from the initial planning stages and can be serviced efficiently and effectively by Council.

It is essential you read the components of this Guide that are relevant to your development type in selecting and designing a waste management system.

3.2 WASTE GENERATION RATES

The following generation rates will need to be used to identify the number of bins required for your development. These rates should also be used to assist in designing your overall waste management system such as size and location of bin storage areas and resident waste rooms.

Table 1: Waste generation rates per residential development type

DEVELOPMENT TYPE	WASTE GENERATION RATES PER DWELLING		
	General Waste	Recycling	Garden Organics
Single dwellings and dual occupancies	120L/unit/week	120L/unit/week	120L/unit/week
Multi dwelling housing	120L/unit/week	120L/unit/week	120L/unit/week
Residential flat buildings	120L/unit/week	120L/unit/week	On request

3.3

STANDARD WASTE SERVICE

Residential developments must utilise Council's standard waste collection service. To ensure your development can access Council's waste service in an efficient and effective manner the following must be taken into consideration in the planning and design of your development:

- An adequate bin storage area is provided within the development site to store all allocated bins. Depending on the nature and density of the development, an individual or communal bin storage area may be provided as recommended by Council.
- An adequate bin collection point has been provided.
- Single dwellings, dual occupancies, and multi dwelling housing developments are required to present all bins to a kerbside collection point.
- Residential flat building developments are required to have bins collected directly from the bin storage area where Council can service the development through a "collect and return" service.

Further details and requirements regarding collection points are provided later in this Guide for each development type.

3.3.1 BINS FOR RESIDENTIAL DEVELOPMENTS

Table 2: Standard bin sizes

RESIDENTIAL DEVELOPMENT TYPE	WASTE STREAMS		
	General Waste	Recycling	Garden Organics
Single dwellings and dual occupancies	120L	240L	240L
Multi dwelling housing	120L / 660L / 1100L	240L / 660L / 1100L	240L
Residential flat buildings	660L / 1100L	660L / 1100L	240L (on request)

Table 3: Standard bin dimensions

STANDARD BIN TYPE	DIMENSIONS*		
	Height	Width	Depth
120L Mobile garbage bin	940mm	485mm	560mm
240L Mobile garbage bin	1080mm	580mm	735mm
660L Bulk bin	1250mm	1370mm	850mm
1100L Bulk bin	1470mm	1370mm	1245mm

*Dimensions are only a guide and differ according to the manufacturer. Additional space should be allowed between bins for manoeuvring.

3.3.2 SERVICE FREQUENCY

The service frequencies are provided to assist in calculating the required number and size of bins.

Table 4: Standard service frequencies

RESIDENTIAL DEVELOPMENT TYPE	SERVICE FREQUENCY		
	General Waste	Recycling	Garden Organics
Single dwellings and dual occupancies	One collection per week	One collection per fortnight	One collection per fortnight
Multi dwelling housing	One collection per week	One collection per fortnight	One collection per fortnight
Residential flat buildings	One collection per week**	One collection per fortnight**	One collection per fortnight

**Frequency of service may be increased for high-density RFB developments only after discussion and recommendation of Council's waste management assessment officers.

3.3.3 BIN STORAGE AREA

It is essential for bin storage areas to be located within the development site where it is safe and convenient for occupants to use.

The bin storage area must be able to accommodate the required number of bins and volume of waste and recycling expected to be generated.

It is important to ensure the bin storage areas are located so they do not adversely impact on the streetscape, building presentation and amenity of occupants and adjoining dwellings. It is also important bin storage areas are located conveniently for all users including occupants, caretakers and collection staff.

Details and requirements regarding bin storage areas are provided later for each development type.

3.4

SINGLE DWELLINGS AND DUAL OCCUPANCIES

This section of the Guide applies to the residential development comprising single dwellings, dual occupancies, secondary dwellings and attached housing.

3.4.1

BIN STORAGE AREA FOR SINGLE DWELLINGS AND DUAL OCCUPANCIES

- Located behind the building line of the dwelling or where it is screened or cannot be viewed from public areas.
- Located away from habitable windows and doors of adjoining dwellings to reduce noise and odour.
- Allow residents to conveniently carry their waste to the correct bin from their dwelling.
- Allow bins to be moved safely to collection points.
- Ensure the bin-carting route from the bin storage area to the collection point does not pass through any internal rooms of the dwelling and must avoid steps and slopes.

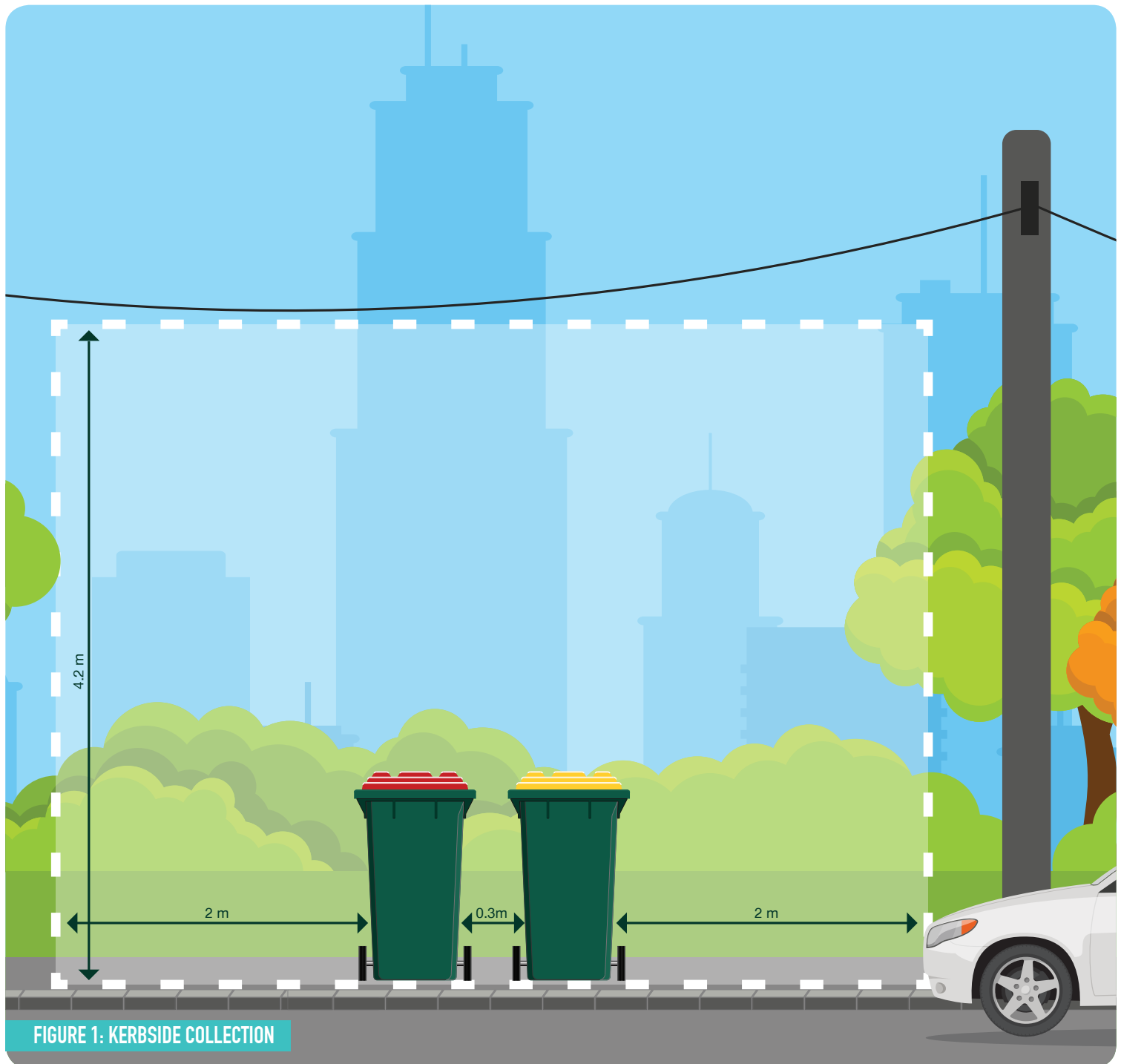


FIGURE 1: KERBSIDE COLLECTION

3.4.2 KERBSIDE COLLECTION

All allocated bins are required to be presented kerbside for collection. It is essential that a kerbside collection point be nominated on plans accompanying your Development Application.

KERBSIDE COLLECTION POINTS FOR SINGLE DWELLINGS AND DUAL OCCUPANCIES

Kerbside collection points are to be located so they:

- Present all allocated bins in single file with a 30cm gap between bins;
- Allow a minimum of 2m x 1m per dwelling for bins to be presented to the kerb;
- Ensure all allocated bins are placed within the site's allocated frontage, not in the driveway and not in front of neighbouring lots;

- Have a separation distance of 2m from street trees, bus stops, street furniture and road infrastructure such as round-a-bouts and speed humps; and
- Have a height clearance of 4.2m from overhanging tree branches, powerlines and other obstructions.

See Figure 1: Kerbside collection

3.4.3 BULKY WASTE

Council provides a kerbside collection service of up to 4m³ per dwelling for bulky waste (whitegoods, mattresses, household furniture etc). It is important to consider the kerbside location the materials will be placed by the resident for collection in your planning phase.

3.5

MULTI DWELLING HOUSING

It is essential the waste management system selected ensures occupant amenity and safety as well as provides bin storage areas that can be used conveniently.

For multi dwelling housing developments where all allocated bins can be presented kerbside for collection it is suitable for residents to have their own individual bin storage area on their property. Where kerbside space is not adequate for all allocated bins, it is appropriate for a communal bin storage area to be provided. It is recommended to confirm the service with Council during your planning stage.

3.5.1 INDIVIDUAL BIN STORAGE AREA

This is Council's preferred service option for multi dwelling housing developments. Where individual bin storage areas are to be provided, the development must be designed in accordance with the following requirements:

INDIVIDUAL BIN STORAGE AREAS FOR MULTI DWELLING HOUSING

- Located behind the building line of the dwelling or where it is screened or cannot be viewed from public areas;
- Located away from habitable windows and doors of adjoining dwellings to reduce noise and odour;
- Allow residents to conveniently carry their waste to the correct bin from their dwelling;
- Allow bins to be moved safely to collection points;
- Ensure the bin-carting route from bin storage area to collection point does not pass through any internal rooms of the dwelling and must avoid steps and slopes; and
- The bin-carting route from the bin storage area to the collection point has a maximum distance of 50m (in the case of battle-axe properties).

3.5.2 COMMUNAL BIN STORAGE AREA

A communal bin storage area is to be provided for multi dwelling housing developments that do not have adequate kerbside space available for all allocated bins.

It is essential communal bin storage areas be considered early in the design process so they can be successfully integrated into the overall design of the development and in an area convenient for all users. It is also important the bin storage area is located so it will not impact on residential amenity in regards to noise, odour and visual impacts for both residents within the development and adjoining the site.

In determining the appropriate location for the bin storage area, consideration should be given to the following factors:

- All residents have easy, safe and convenient access to the waste and recycling service;
- Cleaners/caretakers are able to transfer the bins to the nominated bin storage area for collection in a safe and efficient manner in accordance with Work Health and Safety legislation;
- Location cannot be viewed or easily accessed by the public domain;
- Location protects amenity for residential occupants and adjoining residential properties; and
- Location is positioned to prevent theft and vandalism and restricts unauthorised access to prevent illegal dumping.

The following requirements apply to bin storage areas for multi dwelling housing developments without adequate kerbside space for bin presentation.

Multi dwelling housing developments proposed on arterial roads must provide for an on-site collection from a communal bin storage area. It is unsafe for the waste collection vehicle to stop on an arterial road in order to perform the standard collect and return service. The on-site collection will require the waste collection vehicle to enter the property and collect bins from a designated loading area. Refer to Section 3.6.4 of this Guide for on-site collection specifications.

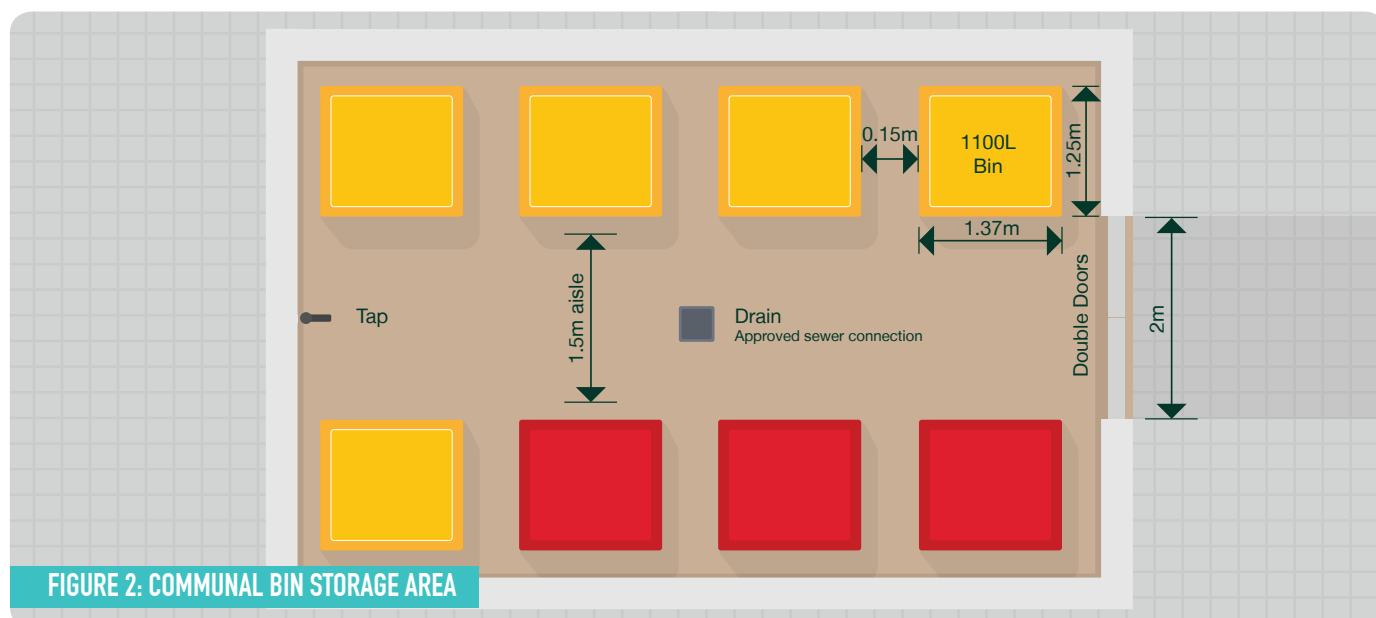


FIGURE 2: COMMUNAL BIN STORAGE AREA

COMMUNAL BIN STORAGE AREAS FOR MULTI DWELLING HOUSING

SIZE

- The development must provide a bin storage area of sufficient size to accommodate all allocated bins.
- Sufficient space must be provided to ensure adequate room for manoeuvring, cleaning and maintaining all bins (approximately 15cm between bins).
- Sufficient space must be provided for any required equipment to manage waste and bins (including washing and cleaning).
- Size will not be excessive so as to encourage the dumping of other household waste in the bin storage area.

LOCATION

- Within 10m of a layback to the nominated collection point to facilitate access to Council's collect and return service.
- Its use and operation will not adversely impact the amenity of occupants in terms of noise and odour.

DESIGN

- A designated room or enclosure.
- Must be integrated into the overall design of the development.
- To be of similar design to the remaining development and must be screened from public view by a visual barrier of at least 1.5m high.

LAYOUT

- The area is free from obstructions so as not to restrict the movement and servicing of the bins.
- An aisle space of 1.5m minimum is required to access and manoeuvre the bins.
- All bins must be placed side-by-side with equal access to all bins.

ACCESS

- Access for all intended users is safe and convenient.
- Any doorways are at least 2m wide with doors unobstructed by any locks and security devices. Restricts or deters access by non-residents.

CONSTRUCTION

- Floors must be constructed of concrete at least 75mm thick and graded and drained to a Sydney Water approved drainage fitting.
- The floors must be finished to a smooth, even surface.
- The walls must be constructed of solid impervious material.
- The ceilings must be finished with a smooth faced non-absorbent material capable of being cleaned.
- Walls, ceiling and floors must be finished in a light colour.
- Is to be provided with an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock.

- A self-closing door at least 1.5m high openable from within the room.
- Must prevent the entry of vermin and birds.
- Be provided with adequate light and ventilation. Light source must be through controlled light switches located both outside and inside the room.

See Figure 2: Communal bin storage area



3.5.3 KERBSIDE COLLECTION

All allocated bins are required to be presented kerbside for collection unless a communal bin storage has been approved which will utilise Council's collect and return service. It is essential a kerbside collection point be nominated on plans accompanying your Development Application.

KERBSIDE COLLECTION POINTS FOR MULTI DWELLING HOUSING

Kerbside collection points are to be located so they:

- Present all allocated bins in single file with a 30cm gap between bins.
- Allow a minimum of 2m x 1m per dwelling for bins to be presented to the kerb side-by-side.
- Ensure all allocated bins are placed within the site's allocated frontage, not in the driveway, and not in front of neighbouring lots.
- Have a separation distance of 2m from street trees, bus stops, street furniture and road infrastructure such as round-a-bouts and speed humps.

See Figure 1: Kerbside collection

3.5.4 BIN-CARTING ROUTE

Multi dwelling housing developments with a communal bin storage area are to be designed so they can be serviced by Council's collect and return service. This service will allow collection staff to collect all allocated bins from the bin storage area and return the bins immediately once the service is completed. Bins will be loaded from the kerbside.

To ensure the development can access Council's collect and return service, developments are required to locate communal bin storage areas within 10m of a layback to the nominated collection point. This maximises work health and safety for staff by minimising bin-carting routes. It also ensures bins can be carted in a timely manner to reduce traffic disruptions.

BIN-CARTING ROUTES FOR MULTI DWELLING HOUSING

The bin-carting route is to be identified on plans accompanying the Development Application.

Bin-carting routes are to be:

- Within 10m of a layback to the nominated collection point (communal bin storage areas only);
- Direct and as short as possible;
- Minimum 2m wide hard surface;
- Non-slip, free from obstacles and steps; and
- A maximum grade of 1:14 (or 1:30 where 660L or 1100L bins are used in communal bin storage areas).

3.5.5 BULKY WASTE

Council provides a kerbside collection service of up to 4m³ per dwelling for bulky waste (whitegoods, mattresses, household furniture etc). It is important to consider the kerbside location the materials will be placed by the resident for collection in your planning phase.

3.5.6 INSPECTION BY COUNCIL

To ensure the communal bin storage area and bin-carting route has been constructed in accordance with the approved plans and to confirm the development can be serviced by Council's collect and return service, an inspection is required to be undertaken by Council's waste representative prior to the issue of the Occupation Certificate.

A condition of consent will be imposed requiring the inspection be undertaken prior to the issue of the Occupation Certificate and any defects addressed prior to any agreement being entered into with Council.

Contact Council on 9707 9000 (Bankstown Branch) to arrange your pre-Occupation Certificate inspection.

3.5.7 DEED OF AGREEMENT AND INDEMNITY

Where collection staff are required to enter private property to perform the collect and return service, a Deed of Agreement (including indemnity) will be required to be entered into with Council.

A condition of consent will be imposed requiring an Indemnity Agreement to be entered into prior to the issue of the Occupation Certificate.

3.6

RESIDENTIAL FLAT BUILDINGS

New residential flat building (RFB) developments are required to provide safe, equitable and convenient waste storage facilities.

It may be suitable for residents to access a communal bin storage area within the ground floor footprint or a waste chute system may be proposed for larger developments.

Should a waste chute system be proposed it is recommended this be discussed with Council early in the design process.

Architects, designers and developers who are experienced in implementing innovative and alternate solutions for waste management systems in high-density RFB developments are encouraged to discuss these solutions with Council early in the planning process.

3.6.1 BIN-CARTING ROUTE

The standard waste service for RFB developments is Council's collect and return service. This service allows collection staff to collect all allocated bins from the bin storage area and return the bins immediately once the service is complete.

To ensure the development can access Council's service, developments are required to locate communal bin storage areas within 10m of a layback to the nominated collection point. This maximises work health and safety for staff by minimising bin-carting routes. It also ensures bins can be carted in a timely manner to reduce traffic disruptions.

BIN-CARTING ROUTES FOR RESIDENTIAL FLAT BUILDINGS

The bin-carting route is to be identified on plans accompanying the Development Application.

Bin-carting routes are to be:

- Within 10m of a layback to the nominated collection point;
- Direct and as short as possible;
- A minimum 2m wide hard surface;
- Non-slip, free from obstacles and steps; and
- A maximum grade of 1:30.

3.6.2 BIN STORAGE AREA

It is essential for communal bin storage areas to be located within the development site where it is safe and convenient for occupants to use. This ensures waste management systems are used effectively during the ongoing use of the development.

The bin storage area must be able to accommodate the required number of bins and the volume of waste and recycling expected to be generated between collections.

A bin storage area should be provided within the ground floor footprint of the development or as a separate enclosure. It must be designed so it can be integrated into the overall design of the development and located so it can be accessed conveniently and will not impact on residential amenity in regards to noise, odour and visual impacts.

Bin storage areas may be located within the basement footprint for higher density RFB developments. By locating the bin storage area within the basement, its use and operation will rely on a caretaker to move bins to a temporary holding area at ground level for collection by Council's collect and return service.

In determining the appropriate location point for the bin storage area, consideration should be given to the following factors:

- All residents have easy, safe and convenient access to the waste and recycling service;
- Cleaners/caretakers are able to transfer the bins to the nominated bin storage area for collection in a safe and efficient manner in accordance with Work Health and Safety legislation;
- Location cannot be viewed or easily accessed by the public domain;
- Location protects amenity for residential occupants and adjoining residential properties; and
- Location is positioned to prevent theft and vandalism and restricts unauthorised access to prevent illegal dumping.

BIN STORAGE AREAS FOR RESIDENTIAL FLAT BUILDINGS

SIZE

- The development must provide a communal bin storage area that is of sufficient size to accommodate all bins allocated for the development. For larger developments, multiple bin storage areas may be required to maximise accessibility for occupants.
- Sufficient space must be provided to ensure adequate room is provided to manoeuvre, clean and maintain all waste and recycling bins for the development (approximately 15cm between bins).
- Sufficient space must be provided for any required equipment to manage waste and bins (including washing and cleaning).
- Size must not be excessive so as to encourage the dumping of other household waste in the bin storage area.

LOCATION

- Located within the ground floor footprint (preferable) or within the basement footprint of the development (for larger RFBs).
- Ground floor areas are to be within 10m of a layback to the nominated collection point to facilitate access to Council's collect and return service.
- Located where its use and operation will not adversely impact the amenity of occupants in terms of appearance, noise and odour.

LAYOUT

- The area is free from obstructions so as not to restrict the movement and servicing of the bins.
- An aisle space of minimum 1.5m is required to access and manoeuvre bins.

ACCESS

- Located so access for all intended users is safe and convenient.
- Any doorways will be at least 2m wide and any doors unobstructed by any locks and security devices.

CONSTRUCTION

- Floors must be constructed of concrete at least 75mm thick and graded and drained to a Sydney Water approved drainage fitting.
- The floors must be finished to a smooth, even surface.
- The walls must be constructed of solid impervious material.
- The ceilings must be finished with a smooth faced non-absorbent material capable of being cleaned.
- Walls, ceiling and floors must be finished in a light colour.
- Is to be provided with an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock.
- A self-closing door at least 1.5m high openable from within the room.
- Must be constructed to prevent the entry of birds and vermin.
- Be provided with adequate light and ventilation. Light source must be through controlled light switches located both outside and inside the room.

See Figure 2: Communal bin storage area

For developments planning a waste chute system, further specifications for bin storage areas is provided in section 3.6.6.

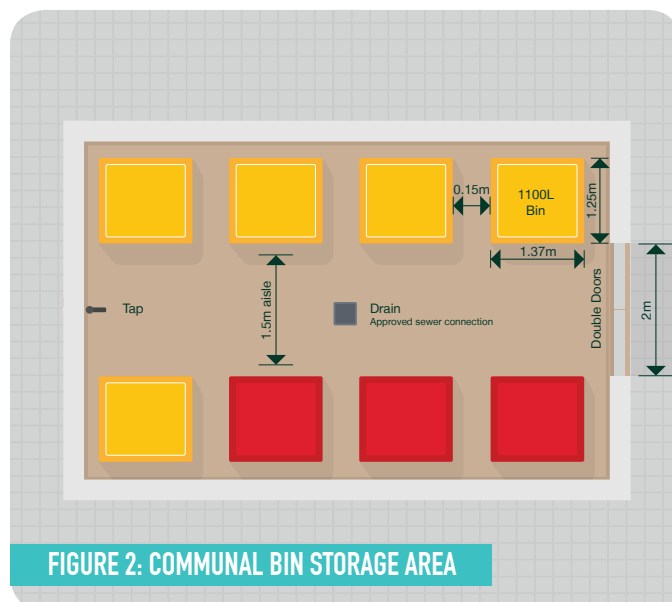


FIGURE 2: COMMUNAL BIN STORAGE AREA

3.6.3 TEMPORARY HOLDING AREA

Where developments cannot locate communal bin storage areas within 10m of a layback to the nominated collection point or are located within the basement footprint, a temporary holding area must be provided at ground level.

The temporary holding area will be required to be of sufficient size to allow the temporary storage of all allocated bins for the development. The holding area will only store bins so they can be serviced and must be returned to the permanent bin storage area once the service is complete.

Developments proposing a temporary holding area will require a caretaker to transfer all allocated bins from the bin storage area to the temporary holding area for servicing. Collection staff will collect and return bins to the temporary holding area. The health and safety of all users including caretakers and collection staff is an important consideration when selecting an appropriate location for the temporary holding area.

TEMPORARY HOLDING AREAS FOR RESIDENTIAL FLAT BUILDINGS

GENERAL

- Within 10m of a layback to the nominated collection point.
- Doorway a minimum 2m.
- Only temporarily store bins so they can be serviced.
- Be located fully within the development site.
- Be located within the front setback of the development but suitably screened so it is not visible from the public domain.
- Be of sufficient size to accommodate all bins with additional room for manoeuvring (approximately 15cm between bins).
- Be clearly separated from car parking bays, footpaths and landscaped areas.

BIN-CARTING ROUTE

- Be located to minimise manual handling for both caretaker and collection staff. Plans are to outline when bin-handling equipment will be used (e.g. bin tugs).
- The bin-carting route from the bin storage area to the temporary holding area is to ensure bin transfer complies with requirements of Work Health and Safety legislation.
- The bin-carting route from the bin storage area to the temporary holding area is:
 - To be direct and as short as possible;
 - Wholly within property boundaries;
 - To be solid, concrete and non-slip;
 - A minimum of 2m wide;
 - Free from obstructions and steps;
 - To be a maximum grade of 1:30.

3.6.4 ON-SITE COLLECTION

For RFB developments where kerbside collection may not be operationally feasible, all allocated bins may be collected on-site. This means the waste collection vehicle will be required to enter the property and service the development within the property boundary from a designated loading area.

The development will be required to provide safe vehicle access and designed to enable the waste collection vehicle to manoeuvre and load all allocated bins. The development will be required to nominate a loading area for the waste collection vehicle.

On-site collection proposals should be discussed with Council during the early planning stages.

RFB developments proposed on arterial roads must provide for an on-site collection. It is unsafe for the collection vehicle to stop on an arterial road in order to perform the standard collect and return service.

ON-SITE COLLECTION REQUIREMENTS FOR RESIDENTIAL FLAT BUILDINGS

LOADING AREA

- A waste collection vehicle loading area is to be nominated on the submitted plans. The loading area is to be within 10m of the bin storage area.
- Located so as not to impede or restrict other vehicle and pedestrian movements during collection times.
- Clearly separated from car parking bays, footpaths, and landscaped areas.
- Located to minimise impact on residents within and adjoining the development site. It is not to be located near sensitive land uses or any habitable room windows.

BIN-CARTING ROUTE

- Ensure bin transfer complies with requirements of Work Health and Safety legislation.
- The bin-carting route to the loading area from the storage area:
 - Be direct and as short as possible;
 - Wholly within property boundaries;
 - Is to be solid, concrete and non-slip;
 - Is a minimum of 2m wide;
 - Free from obstructions and steps;
 - Is to be a maximum distance of 10m to the designated truck loading area and a maximum grade of 1:30.

3.6.5 DESIGNING FOR WASTE COLLECTION VEHICLE ACCESS

The waste collection vehicle must be able to safely and efficiently access the site and nominated loading area to collect all bins. The development's security measures such as gates and security doors should not prevent vehicle access to the collection point which would result in waste being unable to be collected.

As a guide, a turning radius of 12.5m (i.e. turning circle of 25m diameter) kerb to kerb (27.8m diameter wall to wall, swept circle) would accommodate most waste collection vehicles. A manoeuvring clearance of at least 0.3m (absolute minimum) on both sides of the theoretical swept circle path should be accommodated.

When designing for the waste collection vehicle to access the site and designated loading area the following factors are to be taken into consideration early in the design phase:

VEHICLE ACCESS REQUIREMENTS FOR RESIDENTIAL FLAT BUILDINGS

- Access to the nominated collection point is to be designed to ensure a Heavy Rigid Vehicle can safely access and manoeuvre within the site.
- A Heavy Rigid Vehicle must be able to enter and exit the site in a forward direction. The collection point should be located to minimise manoeuvring within the site.
- The route of travel (including vehicle manoeuvring areas) for the waste collection vehicle to the collection point is to satisfy the typical dimensions of a Heavy Rigid Vehicle. This also includes adequate vehicle clearances for the vehicle. Australian Standard AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities provides typical dimensions and turning circles.

- The route of travel is to be adequately surfaced and of sufficient strength to support the waste collection vehicle at maximum capacity (approximately 30 tonnes).
- The grades of entry and exit routes must not exceed the capabilities of the waste collection vehicle and are to comply with AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities for Heavy Rigid Vehicles.
- A turntable is acceptable to facilitate safe and adequate manoeuvring on-site provided it is suitable for the specifications of the Heavy Rigid Vehicle.

See Figure 3: Turning Path template - Heavy Rigid Vehicle.

Swept paths for Council's standard waste collection vehicle must be shown on submitted plans which illustrates the vehicle entering/exiting in a forward direction and access to the nominated loading area. Scaled plans accompanying the development application are to illustrate:

- Manoeuvring, gradients, clearance heights and turning paths for the route of travel that comply with Australian Standard 2890.2 Parking Facilities Part 2: Off street Commercial Vehicle Facilities for Heavy Rigid Vehicles; and
- Council's waste collection vehicle can park safely within a designated loading area on-site whilst servicing the bins.

An extract of dimensions and turning circles from the Australian Standard 2890.2 Parking Facilities Part 2: Off Street Commercial Vehicle Facilities for Heavy Rigid Vehicles are provided in Appendix 7.7 of this Guide.

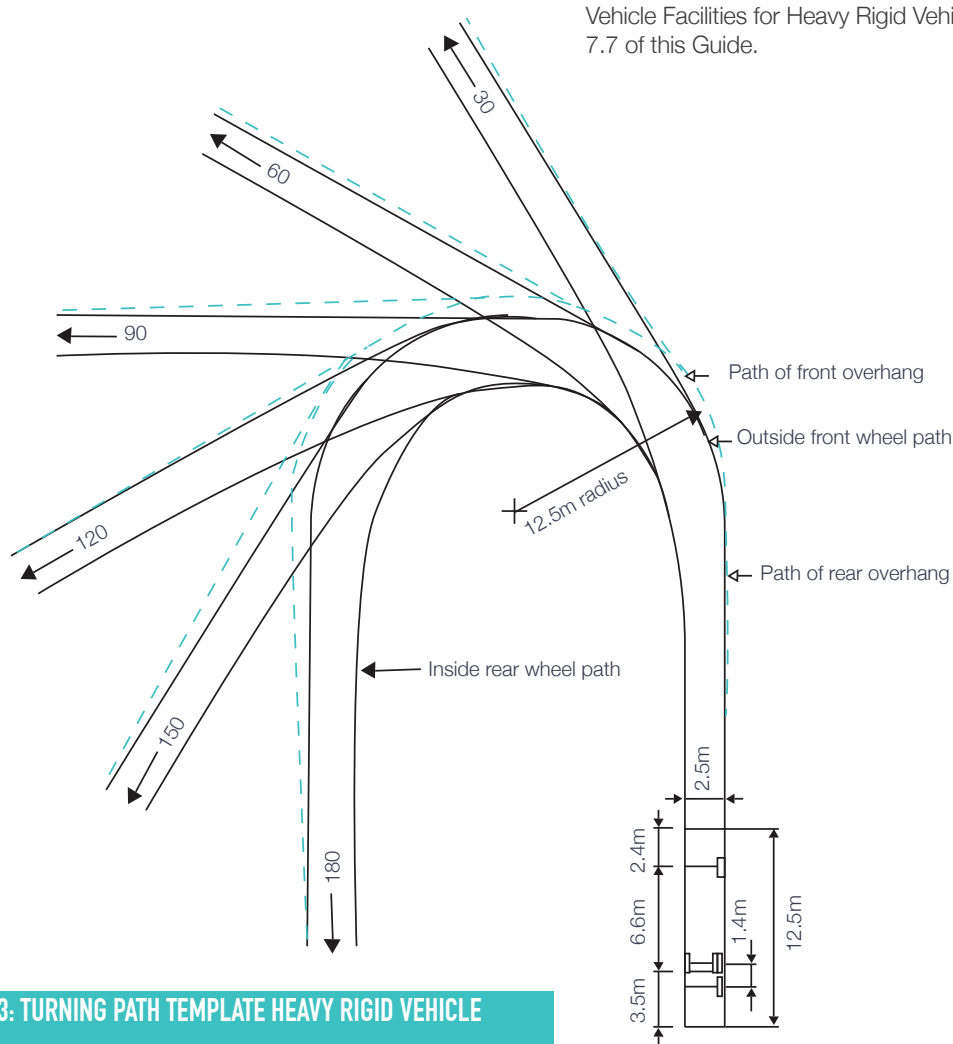


FIGURE 3: TURNING PATH TEMPLATE HEAVY RIGID VEHICLE

3.6.6 WASTE CHUTE SYSTEMS

RFB developments may consider providing a waste chute system.

Council should be consulted for advice in the early planning stages if a chute system is being considered.

If a chute system is selected, waste disposal points (hoppers) are to be provided on each residential floor with the chute terminating into bins within the bin storage area. The bin storage area should be located at the basement level and positioned directly under the chute system.

It is strongly recommended to consult early with the chute manufacturer regarding space requirements and specifications to avoid additional costs and modifications at construction stage.

WHAT ARE THE BENEFITS OF A WASTE CHUTE SYSTEM?

The benefits for occupants are:

- Promotes and encourages recycling through the co-location of general waste and recycling facilities on each floor; and
- Ensures the convenient transfer of waste from different floors of the development without the need for residents to manually cart and carry waste and recycling down stairs or lifts.

While there are benefits of introducing a waste chute system there are also significant ongoing costs associated with future operational and maintenance requirements. These systems are likely to require a full time caretaker due to the frequency of bin rotation required and potential for chutes to become blocked by incorrect use by occupants.

RECYCLING CUPBOARDS ON EACH FLOOR

Developments that propose the use a waste chute system must also plan for recycling cupboards on each residential floor, directly on the corridor adjacent to the chute hopper. The cupboards should have a slot cut out large enough for loose recycling to be placed into the bins behind. The cupboard should be locked, accessible only to the caretaker. A caretaker will need to rotate recycling bins from the recycling cupboard to the bin storage area on a regular basis appropriate for the number of dwellings per floor.

Not containing the chute hopper and recycling bins within a room prevents occupants dumping excess rubbish. The number of recycling bins provided in the cupboard will be determined by the number of units accessing the system per residential floor. This should be discussed with Council in the early planning stages.

The maximum travel distance from each dwelling to the cupboard is 50m.

The cupboard is to be designed so it is accessible for persons with a disability. The DA will additionally need to demonstrate compliance with Australian Standard 1428 Design for access and mobility.

The caretaker is responsible for rotating recycling bins from recycling cupboards and using equipment in the bin storage area, such as a bin lifting machine, to empty 240L bins into larger 1100L bins for Council to collect on service day. No mechanical compaction will be used during this process.

WASTE CHUTE SYSTEMS FOR RESIDENTIAL FLAT BUILDINGS

GENERAL REQUIREMENTS

The waste chute will only be used to transfer garbage and not recycling.

- There will be no mechanical compaction of waste at the base of the chute.
- Waste chute disposal points (hoppers) are to be provided on each residential level of the development. Waste disposal points must be located on the corridor of each floor directly adjacent to the recycling cupboard.
- The chute is to be designed to minimise noise and fire risk.
- The chute is to terminate in the bin storage area and discharge directly into a bulk bin.
- Signage is to be placed on the chute hopper and recycling cupboard on every residential level indicating how to use the system effectively.

BIN STORAGE AREA

- Must be located directly under where the chute terminates and allow a space large enough for the 1100L bin to fit under the chute base.
- Must be large enough to fit the allocated number of bins with additional room for manoeuvring bins.
- Where volume-handling equipment is required (such as bin lifting equipment), the bin storage area must be of adequate size to accommodate all required equipment and operate it.
- Resident access to the volume handling equipment will be restricted.

CONSTRUCTION

- Chute systems are to be designed so they can be constructed to satisfy manufacturer's requirements and can ensure required 1100L bins fit at the base of the system.
- Must be designed and constructed so it can function effectively (gravity fed) and aligns as it passes through each level of the development.
- Designed in accordance with the requirements of the Building Code of Australia including fire rating and ventilation.
- Must be constructed and installed to prevent the transmission of noise and vibration to the structure of the development during its use and operation.
- Must be constructed to alleviate any odour.

RECYCLING CUPBOARD

- Must be conveniently located for residents on each residential level of the development.
- Located directly adjacent to the hopper to contain recycling bins.
- Must be of adequate size to accommodate required number of recycling bins as recommended by Council.
- A site caretaker will be required to rotate recycling bins from the cupboards to the bin storage area on a regular basis appropriate for the number of dwellings per floor.

CONSTRUCTION OF RECYCLING CUPBOARD

- The cupboard is to be designed so the doors are of sufficient width to allow the transfer/rotation of 240L bins.
- The cupboard floor is to be constructed of a durable and impervious material with a smooth finish.

See Figure 4: Waste chute system

See Figure 5: Recycling cupboard and chute hopper design

See Figure 6: Waste chute system – layout of bin storage area

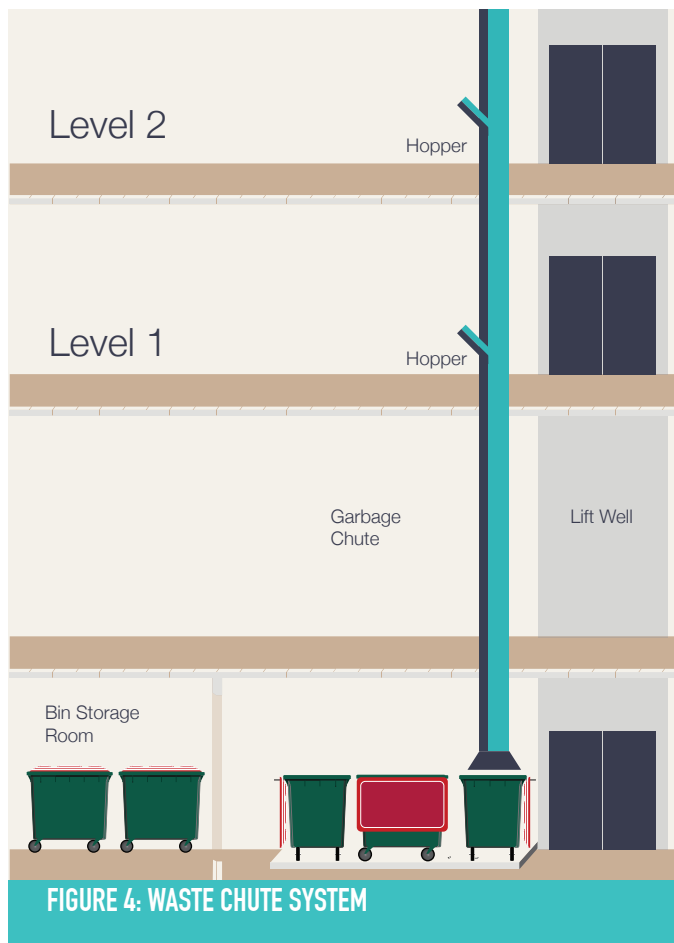


FIGURE 4: WASTE CHUTE SYSTEM

3.6.7 DESIGN FOR ONGOING USE

Considering the ongoing management of waste systems in RFBs is an important consideration at the design stage to ensure amenity of residents is maintained and caretaker and contractor safety is assured.

Selection of the waste management system including the ongoing role and responsibilities of the caretaker can also impact on the future operational costs of the development, which will be passed onto residents.

It is important for both the designer and developer to identify, establish and communicate responsibilities of both residents and caretakers to ensure effective management of waste at the operational stage of the development.

Council recommends an active caretaker be employed for RFB developments to ensure effective and efficient ongoing waste management. A site caretaker or manager will be required to:

- Maintain and clean all bin storage areas and recycling cupboards;
- Maintain and clean temporary holding areas (if applicable);
- Clean and wash all bins;
- Manage all bin transfers and rotations;
- Ensure waste chute system and associated waste service equipment functions effectively and in accordance with manufacturer's specifications.

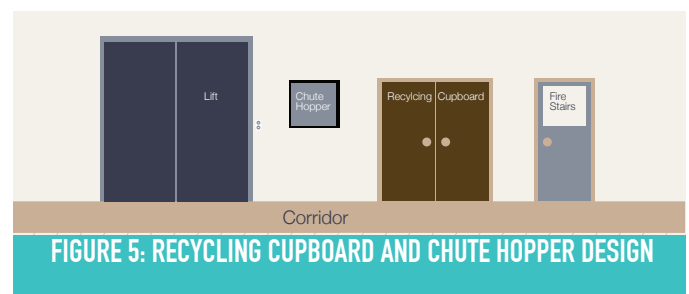


FIGURE 5: RECYCLING CUPBOARD AND CHUTE HOPPER DESIGN

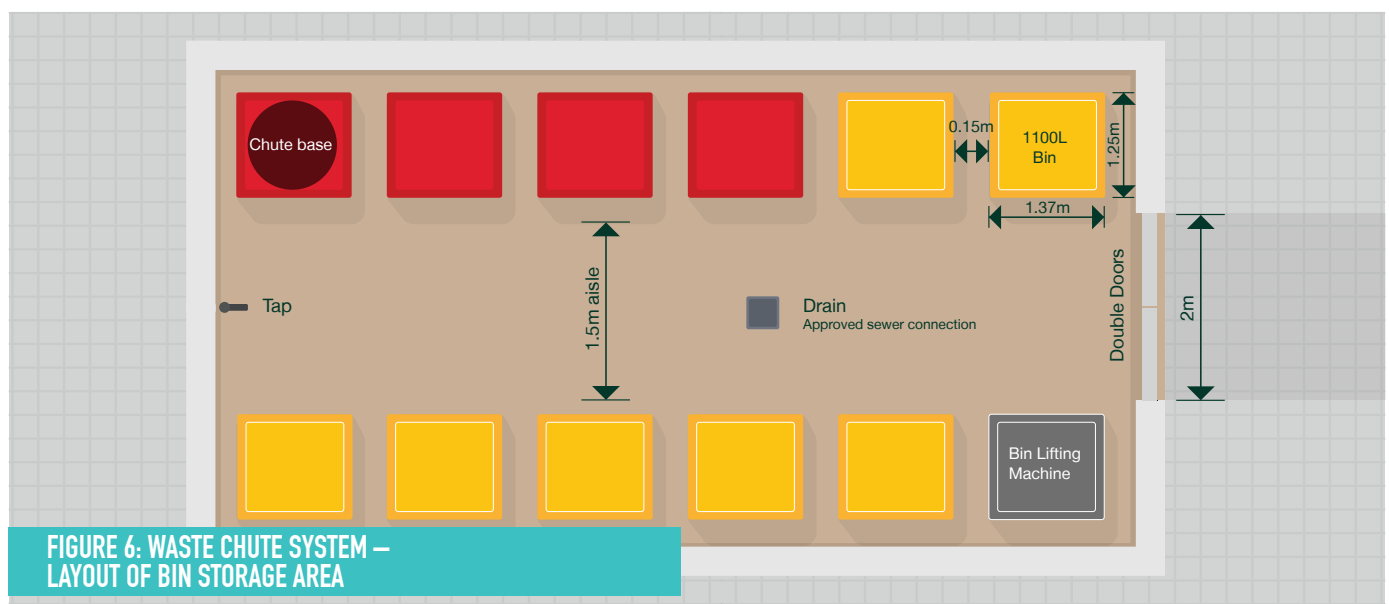


FIGURE 6: WASTE CHUTE SYSTEM – LAYOUT OF BIN STORAGE AREA

The site caretaker is to attend to the site for a sufficient number of hours and at an appropriate frequency to enable the waste management system to operate to a satisfactory standard.

Ongoing education and signage is important to ensure occupants and users of the facility understand their roles and responsibilities. Council recommends signage at waste disposal points and rooms that are to be used by occupants.

Council can assist in providing standard educational signage to be used within the development at occupation stage.

3.6.8 BULKY WASTE STORAGE AREA

Council provides a kerbside collection service for bulky waste. It is important to provide an area within the building footprint for residents to store bulky waste awaiting collection to prevent the illegal dumping of materials on the kerbside. RFB developments including shop top housing must provide an area that is a minimum 4m², for the storage of bulky household waste awaiting collection (whitegoods, mattresses, furniture etc.), and provide screening so this area cannot be viewed or easily accessed by the public domain. Where there are multiple buildings, a separate 4m² area for each building must be provided. It is additionally important to consider during your planning phase the kerbside location the materials will be placed by the resident for collection.

3.6.9 INSPECTION BY COUNCIL

To ensure the communal bin storage area and bin-carting route has been constructed in accordance with the approved plans and to confirm the development can be serviced by Council's collect and return service an inspection is required to be undertaken by Council's waste management representative prior to the issue of the Occupation Certificate.

A condition of consent will be imposed requiring this inspection be undertaken prior to the issue of the Occupation Certificate and any defects addressed prior to any agreement being entered into with Council.

Contact Council on 9707 9000 (Bankstown Branch) to arrange your pre Occupation Certificate inspection.

3.6.10 DEED OF AGREEMENT AND INDEMNITY

Where collection staff are required to enter private property to perform the collect and return service, a Deed of Agreement (including indemnity) will be required to be entered into with Council.

A condition of consent will be imposed requiring the Indemnity Agreement being entered into prior to the issue of the Occupation Certificate.

4.

WASTE MANAGEMENT CONSIDERATIONS FOR MIXED USE DEVELOPMENTS

4.1

GENERAL CONSIDERATIONS

In selecting the appropriate waste management system for mixed use developments it is important to ensure appropriate storage and collection facilities for waste and quality design of bin storage areas for both residential and commercial occupants.

In designing and selecting a waste management system for the development, you will need to consider the volume of waste to be generated by your development, the number of bins required and how all allocated bins will be stored within the development.

It is also essential to have a clear understanding of Council's servicing requirements for your development to ensure bin storage areas and collection points are integrated into the overall development from the initial planning stages and bin storage areas and collection areas for both residential and commercial components are separated.

Council will service the residential component of the development as a mandatory service (standard collect and return service) and may be invited to collect the commercial component by the commercial occupants as a separate paid arrangement.

4.2

REQUIREMENTS FOR MIXED USE DEVELOPMENTS INCLUDING SHOP TOP HOUSING

MIXED USE DEVELOPMENTS INCLUDING SHOP TOP HOUSING

- Separate bin storage areas for residential and commercial components of the development are to be provided.
- The residential component of the development is to comply with the relevant requirements for the development type (i.e. multi dwelling housing and/or residential flat building) covered by this Guide.

- The commercial component of the development is to comply with the relevant requirements for commercial development covered by this Guide.
- Access to residential bin storage areas by commercial tenancies is to be restricted.
- Each commercial operator is allocated an area in the bin storage area for their individual waste service to be stored.

5. WASTE MANAGEMENT CONSIDERATIONS FOR COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

5.1 GENERAL CONSIDERATIONS

This section applies to all commercial (including retail) and industrial developments and boarding houses. This section also applies to change of use development applications.

It is essential when selecting a waste management system you have a thorough understanding of the likely waste to be generated by your development and potential waste streams. Waste generation and waste streams will influence the size of bin storage areas as well as how all waste streams will be collected.

5.2 WASTE GENERATION

Careful consideration of waste generation rates will ensure you select an appropriate waste system and ensure its design is functional and effective for ongoing use of the site.

Appendix 7.5 contains suggested waste generation rates for various commercial developments. These generation rates should be used to indicate the likely generation of waste from your development. This will also assist in calculating the number of bins required for the development, determine the type and frequency for waste collection and the design (including size) of your bin storage area.

Each commercial operator is allocated an area in the bin storage area for their individual waste service to be stored.

5.3 WASTE SERVICE

Commercial and industrial land uses are required to be serviced by a private waste collection service. Council offers a trade waste service for commercial and industrial developments and may be invited to quote for service by the business operator.

Waste contractors should be consulted to confirm collection requirements, bin types available (including sizes and dimensions) as well as their access requirements. Further details are provided in the NSW EPA's Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities. Collection vehicles for commercial and industrial developments also vary in size and dimension, and each contractor has different servicing and access requirements. During the design stage, it is recommended you consult with waste contractors to obtain accurate specifications to ensure the development can be serviced.

Consideration of collection frequency is also required. Collection frequency can influence the size of bin storage areas for your development. Different commercial types will require more frequent collection services such as retail premises containing fish, poultry and meat products.

5.4 BINS AND WASTE MANAGEMENT EQUIPMENT

It is important to select appropriate bins, containers and waste equipment that can store waste generated and separate all waste streams generated by your development from each individual occupying business.

A variety of bins, containers and equipment is available for commercial and industrial developments. The NSW EPA's Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities provides some additional information on the type of bins, containers and waste equipment provided for these development types, however it is important you consult with waste contractors on any requirements or restrictions on the bin types and sizes you can select.

5.5 BIN STORAGE AREA

For commercial and industrial developments, a bin storage area must be provided for the development that can accommodate all required bins and is sufficient to store all generated waste (and all waste streams) between collections.

When designing developments it is recommended consideration of the intended and future uses should be undertaken to reduce any costly retrofitting that may be required at the operational stage of the development.

BIN STORAGE AREAS FOR COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

SIZE

- The size of the bin storage area must be sufficient to cater for all likely waste generation and the required bins for all waste streams. Waste generation is to be determined in accordance with Appendix 7.5.

LOCATION

Bin storage areas are to be located so that:

- Equal and convenient access for all occupants is to be provided;
- Sited behind the development building line and incorporated within the development footprint;
- In areas that will not reduce the amenity for occupants and existing users adjoining the development.
- Convenient access to the collection vehicle loading area to minimise bin-carting routes.

DESIGN

- Bin storage areas can be a stand-alone structure for smaller commercial and industrial developments. Where a stand-alone structure is to be provided it is to be designed and integrated into the overall development in regards to materials and finishes.
- For larger developments (particularly with a high number of individual tenancies) a bin storage area should be provided within the development footprint.

LAYOUT

- The layout of the bin room must prevent obstructions that impact on bin movement, maintenance and cleaning as well as any servicing requirements.

CONSTRUCTION

Bin storage areas are to be designed so they can be constructed to the following requirements:

- Floors must be constructed of concrete at least 75mm thick and graded and drained to a Sydney Water approved drainage fitting;
- Floors must be finished in a smooth even surface;
- Walls must be constructed of solid impervious material;
- Ceilings must be finished with a smooth faced, non-absorbent material capable of being cleaned;
- Walls, ceilings and floors must be finished in a light colour;
- The room must be provided with an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock;
- Doors must at least 2m wide and be close fitting and self-closing and able to be opened from within the room
- The room must be constructed to prevent the entry of vermin and birds;
- The room must have adequate light and ventilation; and
- Lighting must be controlled using switches located both inside and outside the room.

5.6

COLLECTION POINT

For commercial and industrial developments, all allocated bins are required to be presented to a nominated on-site collection point.

All developments will be required to nominate an on-site collection point where a waste collection vehicle enters the site and collects all bins. The collection point can be directly from the bin storage area or a separate bin presentation area. It is recommended you consult with waste contractors to obtain their servicing requirements and any restrictions.

On-site collection points need to be located so they do not interfere with car parking and vehicle manoeuvring areas.

Smaller commercial businesses may opt for individual 240L bins that should be presented kerbside at the front or rear of the business in consultation with the requirements of the contractor performing the service.

ON-SITE COLLECTION REQUIREMENTS FOR COMMERCIAL AND INDUSTRIAL DEVELOPMENTS

- Waste collections must be serviced on-site by a private waste and recycling contractor at ground level.
- Access to the nominated collection point for the development is to be designed to ensure a Heavy Rigid Vehicle can safely access and manoeuvre within the site. Typical dimensions (and turning circles) for a Heavy Rigid Vehicle are provided within AS 2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities.
- A Heavy Rigid Vehicle must be able to enter and exit the site in a forward direction. The collection point should be located to minimise manoeuvring within the site.
- The route of travel (including vehicle manoeuvring areas) for the waste collection vehicle to the collection point is to satisfy the typical dimensions of Heavy Rigid Vehicle. This also includes adequate vertical clearance for the vehicle. Australian Standard AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities provides typical dimensions and turning circles.
- The route of travel is to be adequately surfaced and of sufficient strength to support the waste collection vehicle.
- The grades of entry and exit routes must not exceed the capabilities of the waste collection vehicle and are to comply with AS2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities for heavy rigid vehicles.

See Figure 3: Turning path template Heavy Rigid Vehicle (P23)

Other requirements for specific commercial and industrial developments

LAND USE AND DEVELOPMENT REQUIREMENTS

FOOD PREMISES INCLUDING FOOD RETAILERS AND RESTAURANTS

- Individual tenancies are to be provided with appropriate space to store bins and containers that can store up to two days of estimated generated waste.
- A bunded and graded storage area for liquid waste is to be provided so it can be drained to a grease trap to satisfy Sydney Water requirements.
- Additional space in the waste room to accommodate reusable items like pallets and crates.

MULTIPLE TENANCIES RETAIL PREMISES

- Where individual tenancies are proposed within a commercial development, each tenancy is to be provided with appropriate space to store bins and containers that can store up to two days of estimated generated waste.
- A centralised waste storage room for the development for all bins awaiting collection.
- A waste service room on each level that can store a minimum one day's waste and recycling generated by the tenancies on that level.
- Additional space for the storage of bulky items in the waste service rooms.
- Additional space for the separation of waste and recycling in the waste service room.
- Waste and recycling from the waste service room must be transferred to the centralised waste room daily.

OFFICE PREMISES

- A centralised waste storage room for the development for all required bins awaiting collection.
- A waste service room on each level that can store a minimum, one day's waste and recycling generated by the tenancies on that level.
- Additional space for the storage for bulky items in the waste service rooms.
- Additional space for the separation of waste and recycling in the waste service room.
- Waste and recycling from the waste service room must be transferred to the centralised waste room daily.

INDUSTRIAL DEVELOPMENTS INCLUDING WAREHOUSES

- Where individual tenancies are proposed within an industrial development, they are to be provided with appropriate space to store bins and containers that can store up to two days of estimated generated waste.
- A bunded and graded storage area for liquid waste so that it can be drained to a grease trap to satisfy Sydney Water requirements.
- Additional space in the waste rooms to accommodate reusable items like pallets and crates.

6. GLOSSARY

6.1 DEVELOPMENT TYPES

DEVELOPMENT TYPE	DEFINITION	OTHERWISE KNOWN AS
Dwelling house	a building containing only one dwelling	Detached houses, Single dwellings
Dual occupancy (attached)	two dwellings on one lot of land that are attached to each other, but does not include a secondary dwelling	Duplex
Dual occupancy (detached)	means two detached dwellings on one lot of land, but does not include a secondary dwelling	Granny flat
Attached dwelling	means a building containing 3 or more dwellings, where: (a) each dwelling is attached to another dwelling by a common wall, and (b) each of the dwellings is on its own lot of land, and (c) none of the dwellings is located above any part of another dwelling	Row houses, Terrace houses
Multi dwelling housing	means three or more dwellings (whether attached or detached) on one lot of land, each with access at ground level, but does not include a residential flat building	Villas
Residential flat building	means a building containing three or more dwellings, but does not include an attached dwelling or multi dwelling housing	Flats, Apartments, Units
Secondary dwelling	means a self-contained dwelling that: (a) is established in conjunction with another dwelling (the principal dwelling), and (b) is on the same lot of land as the principal dwelling, and (c) is located within, or is attached to, or is separate from, the principal dwelling	Granny flat
Shop top housing	one or more dwellings located above ground floor retail premises or business premises	Mixed use development

6.2 TERMS

TERM	DEFINITION
Arterial road	A high-capacity urban road owned and managed by NSW Roads and Maritime Services.
Bin-carting route	Travel route for transferring bins from bin storage area to nominated collection point.
Bin storage area	Area which stores all allocated bins for the development. Can be a nominated individual or communal bin storage area.
Bulk bins	Large bins which have four swivel wheels so can be moved in any direction.
Bulky waste	Large household items such as furniture, white goods and mattresses.
Collection point	The nominated point where waste and recycling is collected from by the service vehicle.
Communal bin storage area	Bin storage area which stores all allocated bins for the entire development and can be accessed by all residents and occupants.
Indemnity	A party providing services to a particular property will not be held responsible for any loss or damage to such property as a result of the routine provision of the service.
Kerbside collection	All allocated bins are presented kerbside for collection by collection staff.
Mobile garbage bins	Small bins which have two wheels so can only be moved forwards and backwards (not sideways).
On-site collection	Collection occurs within the development site's boundary in a nominated loading area.
Residential level	Every level on which there is a dwelling.
Recycling cupboard	The cupboard on each residential level that houses the necessary number of recycling bins adjacent to the waste chute hopper.
Route of travel	The travel path for the waste collection vehicle when entering the site to access the nominated collection point.
Temporary bin holding area	Area where bins are transferred to be stored for collection. Bins are required to be transferred back to the bin storage area as soon as possible after collection occurs. This bin transfer is undertaken by a caretaker.
Waste chute system	Ventilated, vertical pipes passing through each floor of a multi-storey building with access on each floor. Chutes discharge into bins at the lowest point in the waste room.

7. APPENDIX

7.1 USEFUL INFORMATION AND RESOURCES

The following information and resources is provided to assist in the design and planning of your development and waste management system.

Better Practice Guide for Waste Management in Multi-Unit Dwellings
www.epa.nsw.gov.au

Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities
www.epa.nsw.gov.au

Australian Standard AS 2890.2-2002 Parking Facilities Part 2: Off-street commercial vehicle facilities
www.saiglobal.com/online/

Waste Avoidance and Resource Recovery Strategy
www.epa.nsw.gov.au/wastestrategy/warr.htm

7.2 WASTE POLICY AND LEGISLATION

Bankstown City Council Local Environmental Plan 2015 and Development Control Plan 2015

The Bankstown City Council Local Environmental Plan 2015 (BLEP 2015) is Council's main planning instrument guiding development across the former Bankstown Local Government Area.

It establishes a legislative framework through providing development standards and planning requirements used in the assessment of development applications.

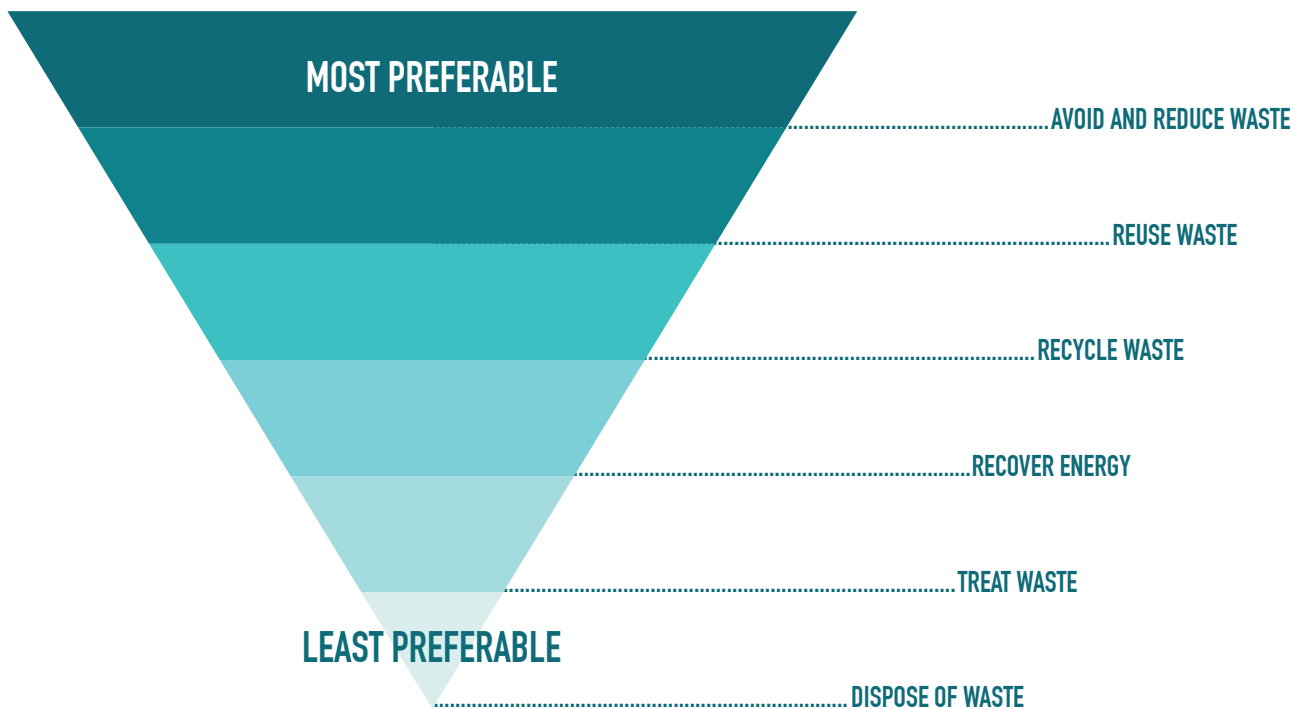
The Bankstown Development Control Plan 2015 (BDCP 2015) is a comprehensive document, which provides a framework for development across all land within the former Bankstown City. It provides objectives and development controls that are consistent with Council's vision of "a vibrant, strong and attractive City, which values its people, environment and community".

Development Applications submitted as part of the former Bankstown City Council area must address the specific waste management objectives and controls within the BDCP 2015 in addition to the requirements of this Guide.

NSW WASTE AND RESOURCE RECOVERY STRATEGY 2014-21

The NSW Waste Avoidance and Resource Recovery Strategy 2014-21 contains a waste hierarchy to identify preferred approaches in managing waste.

These principles should underpin the activity across all stages of your development and should be used to prepare and implement your Waste Management Plan.



7.3

WORK HEALTH AND SAFETY CONSIDERATIONS

Waste management systems and services need to be designed so the occupants of the development can use them safely. It is also vital they are designed so they can be operated in an efficient and safe manner to prevent potential risk of injury or illness to persons involved in the collection and disposal of waste.

The designer, architect and the developer have an important role in ensuring adequate consideration is given to collection methods and systems used for waste management.

Consideration of risk, health and safety is important for:

- Occupants using the service;
- Caretakers, building maintenance and cleaning staff responsible for maintaining the service to ensure it functions efficiently and effectively at the operational phase of the development; and
- Collection staff providing the waste service that will need to access the site and nominated collection point.

The development will need to comply with Work Health and Safety Act 2011 and Work Health and Safety Regulations 2011. It is recommended a risk assessment for the development be undertaken at the design stage so risks can be eliminated or appropriately managed through well-considered design solutions.

Examples of risk considerations include:

- Ensuring adequate storage space for easy and efficient manoeuvring of bins (for servicing, cleaning and maintenance).

- Ensuring the path of travel is safe and obstacle free including consideration of doorway widths and heights, free from steps and other obstacles and surfaced so surfaces are non-slip;
- Path of travel for caretakers/contractors and manoeuvring areas are well clear of vehicle movement areas and adequate sight distances are provided;
- Ensure collection points are easily accessible for the collection vehicle and provided with appropriate height clearance, maneuvering areas and sight distances;
- Waste collection vehicle parking and loading areas are of sufficient dimensions to cater for the movement of bins;
- Ensure vehicle access and turning areas are free from obstacles that impair driver visibility; and
- Restricting resident and unauthorised access where appropriate.

7.4

ONGOING EDUCATION AND MANAGEMENT

The ongoing management of waste at your development should be considered when preparing your WMP including:

- Whether a caretaker is required to manage the proposed waste system;
- The method of communication to occupants regarding the waste system;
- Cleaning and maintenance schedules for all waste equipment; and
- Signage to ensure the appropriate use of the waste system.

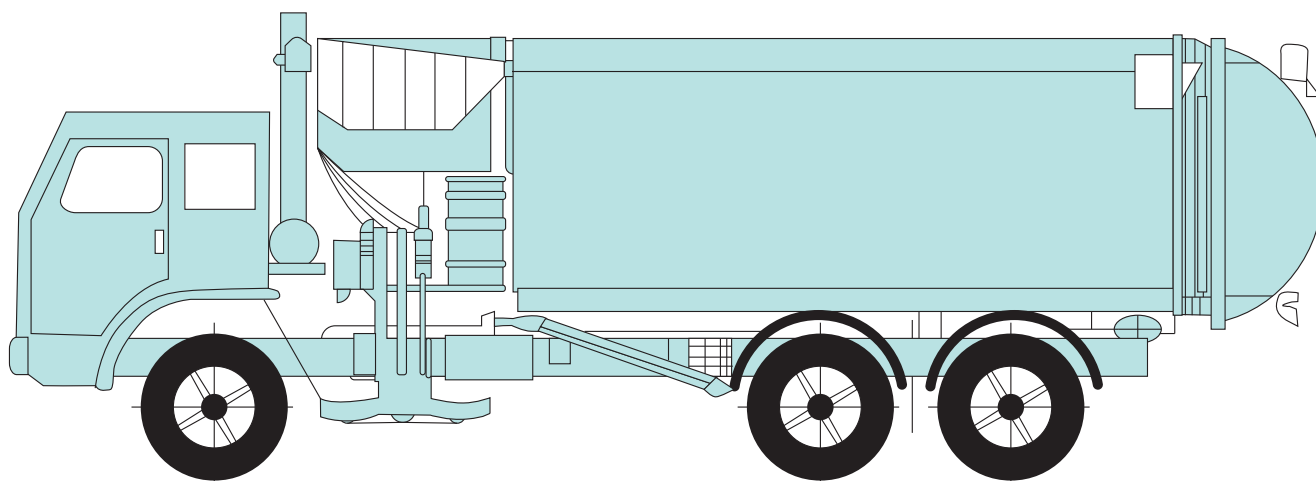


FIGURE 7: TYPICAL SECTION OF SIDE-ARM COLLECTION VEHICLE.

If the development will be Strata titled at occupation, management responsibilities should clearly be outlined in the Waste Management Plan as well as the expectations and responsibilities of occupants.

Ongoing education at the operational stage is essential in ensuring the waste management system is used as planned. Signage provided in appropriate areas can assist in informing and educating residents on the importance of waste management and ensuring waste management systems are used correctly.

Correct and clear signage should be provided:

- On all garbage and recycling bins;
- In communal bin storage areas providing instructions on waste separation;
- On waste chute hoppers and recycling cupboard; and
- Throughout the development where there are potential hazards or increased risk to injury and safety associated with waste facilities including any handling equipment.

Council can assist in providing educational standard signage for your development at occupation stage.

7.5

WASTE GENERATION RATES FOR COMMERCIAL DEVELOPMENTS

The following Table is adapted from the NSW EPA's 'Better Practice Guide for Waste Management in Multi-unit Dwellings 2008' and the 'Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities 2012'. It provides a guide to retail and commercial waste generation rates.

Table 5: Retail and commercial waste generation rates

TYPE OF PREMISES	WASTE GENERATION	RECYCLING GENERATION
Food Premises		
Butcher	200L/100m ² floor area/day	145L/100m ² floor area/day
Delicatessen	80L/100m ² floor area/day	information not available
Fish shop	250L/100m ² floor area/day	85L/100m ² floor area/day
Greengrocer	310L/100m ² floor area/day	410L/100m ² floor area/day
Restaurants	660L/100m ² floor area/day	490L/100m ² floor area/day
Supermarkets	660L/100m ² floor area/day	240L/100m ² floor area/day
Takeaway	175L/100m ² floor area/day	690L/100m ² floor area/day
Retail premises (non-food sales)		
Shops (< 100m ² floor area)	860L/100m ² floor area/day	715L/100m ² floor area/day
Shops (> 100m ² floor area)	300L/100m ² floor area/day	490L/100m ² floor area/day
Showrooms	40L/100m ² floor area/day	100L/100m ² floor area/day
Hairdressers	62L/100m ² floor area/day	55L/100m ² floor area/day

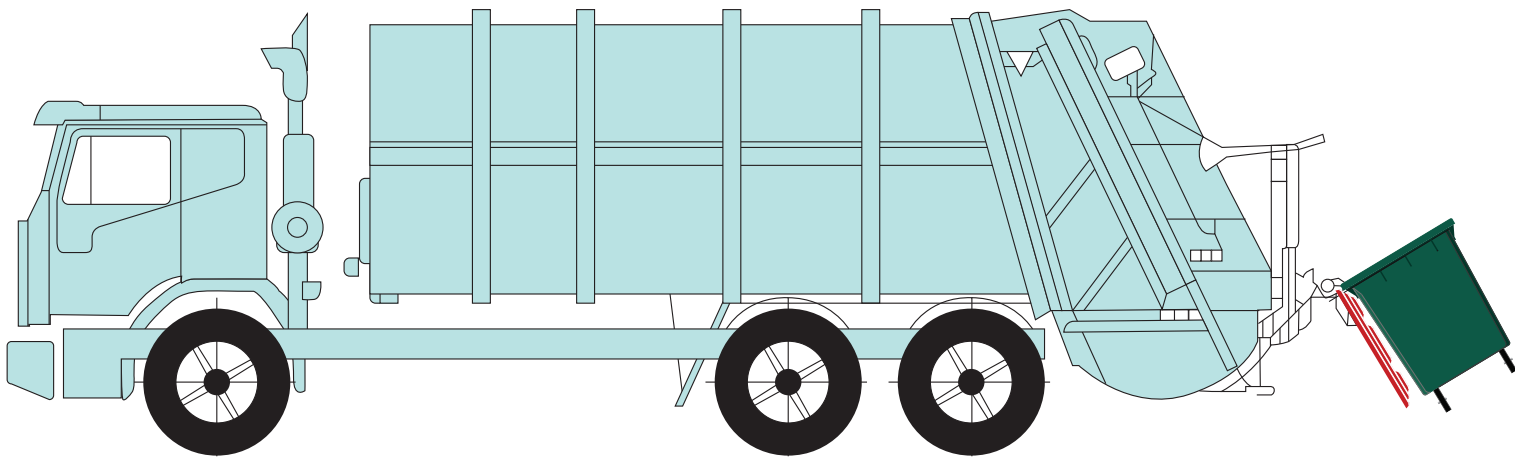


FIGURE 8: TYPICAL SECTION OF STANDARD REAR-LOADED VEHICLE

TYPE OF PREMISES	WASTE GENERATION	RECYCLING GENERATION
Other		
Backpacker accommodation	40L/unit/week	20L/unit/week
Boarding house	60L/unit/week	20L/unit/week
Offices	16L/100m ² floor area/day	12L/100m ² floor area/day
Hotels	5L/bed/day	85L/100m ² bar and dining area/day
	50L/100m ² floor area/day	
	660L/100m ² dining area/day	
Licensed club	50L/100m ² floor area/day	50L/100m ² bar and dining area/day
Motel	5L/bed/daily	1L/bed/day

7.6

COLLECTION VEHICLE INFORMATION

Consideration of not only the vehicle dimensions but how the vehicle operates in regards to the side lifting of bins and its manoeuvring is vital in ensuring the development is fully integrated with Council's standard waste service.

120L AND 240L BINS

The following information is provided regarding Council's standard waste collection vehicles which service standard residential developments utilising 120L and 240L bins.

For these bin types, a side-armed vehicle as illustrated in Figure 7 above is utilised.

It is essential developments incorporating laneways are appropriately designed to ensure sufficient width and height clearance is provided to enable dwellings to be serviced by Council.

Figure 7: Typical section of side-arm collection vehicle (P20).

660L AND 1100L BINS

The following information is provided regarding Council's standard waste collection vehicles which service standard residential developments utilising 660L and 1100L bins.

For these bins types, a rear-loaded vehicle as illustrated in Figure 8 above is utilised.

Consideration needs to be given to the vehicle length, height, turning paths, and vertical clearance. Designers also need to be mindful of consideration of worker health and safety through providing adequate distances around the nominated loading and collection points to ensure visibility and line of sights for all users of the development.

Figure 8: Typical section of standard rear-loaded vehicle

Table 6: Dimensions for Heavy Rigid Vehicle

VEHICLE CLASS	HEAVY RIGID VEHICLE (HRV)
Overall length (m)	12.5
Design width (m)	2.5
Design turning radius (m)	12.5
Swept circle (m)	27.8
Clearance (travel) height (m)	4.5

An extract of the turning templates from AS 2890.2 is provided for information purposes. It is recommended the full copy of the AS 2890.2 be utilised for scaled turning templates.

Figure 3: Turning path template for Heavy Rigid Vehicle (P23)

7.7

USEFUL DIAGRAMS

The following illustrations are provided to assist Development Application preparation.

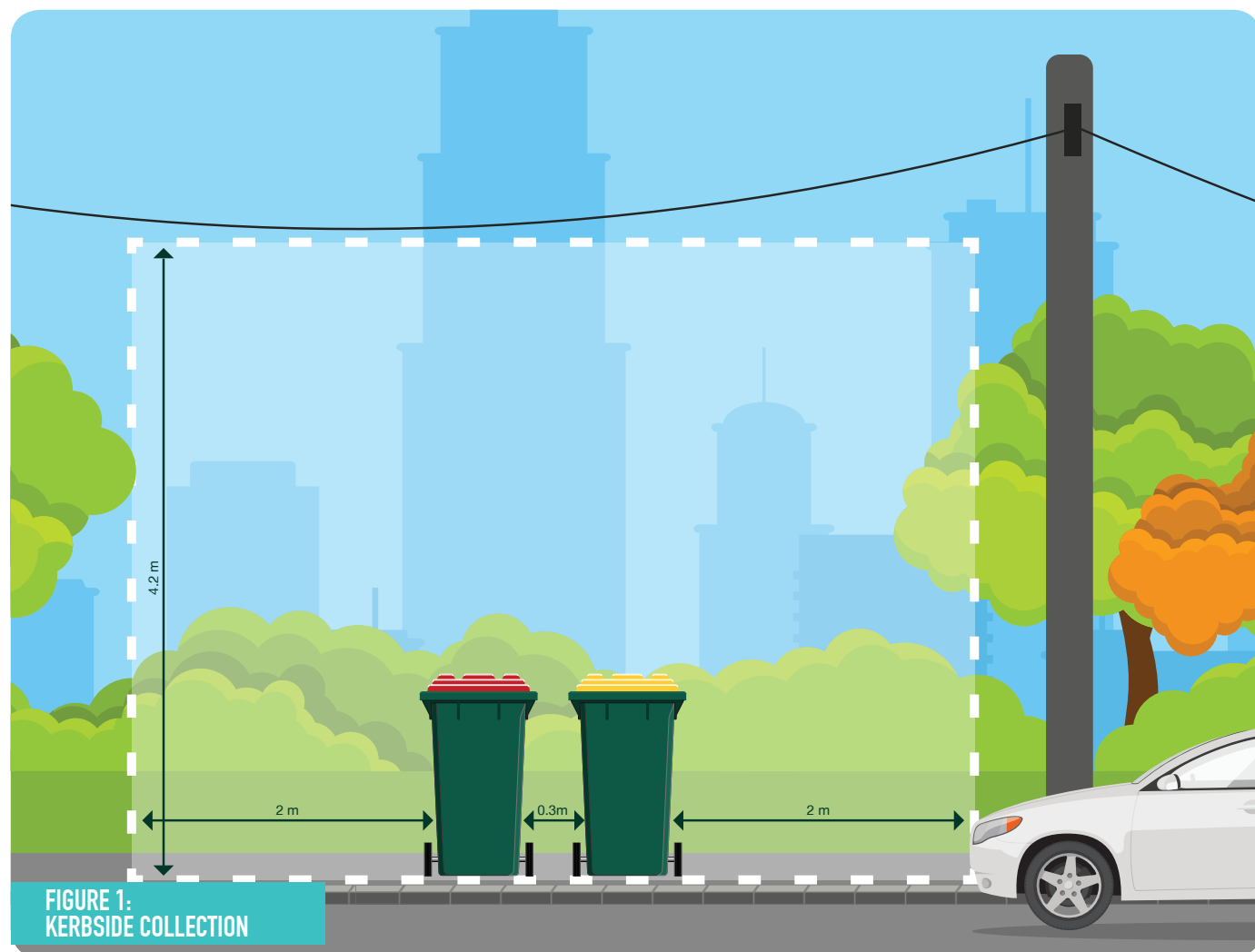


FIGURE 1:
KERBSIDE COLLECTION

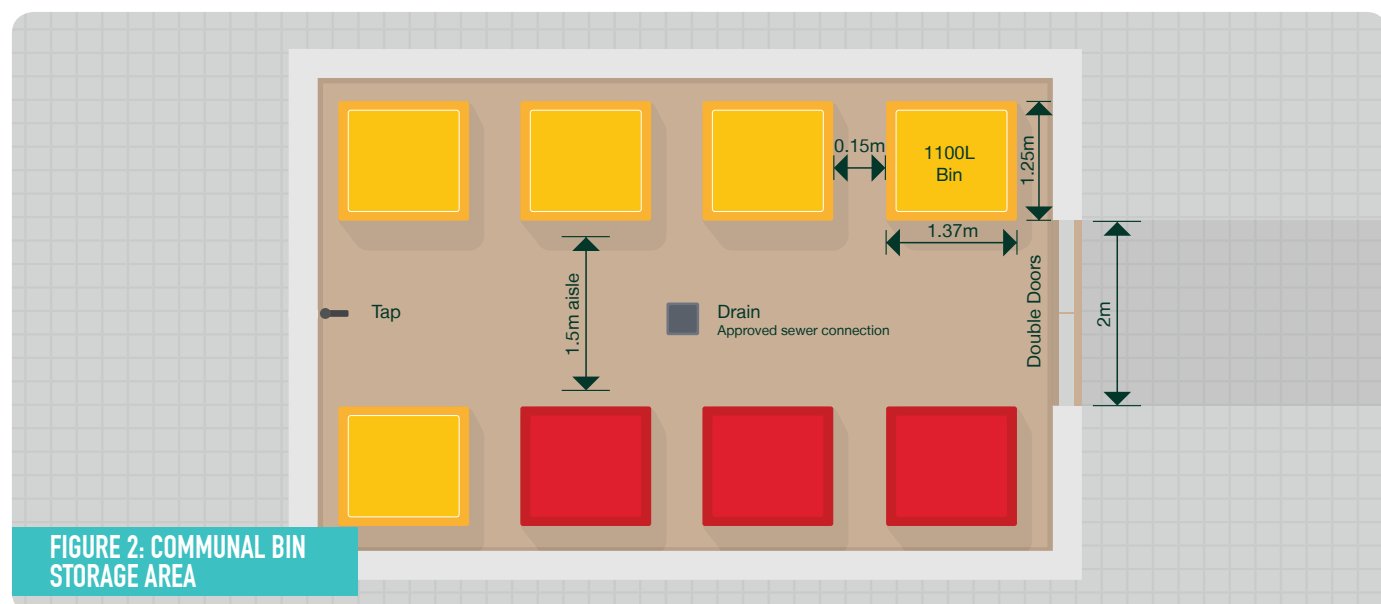


FIGURE 2: COMMUNAL BIN
STORAGE AREA

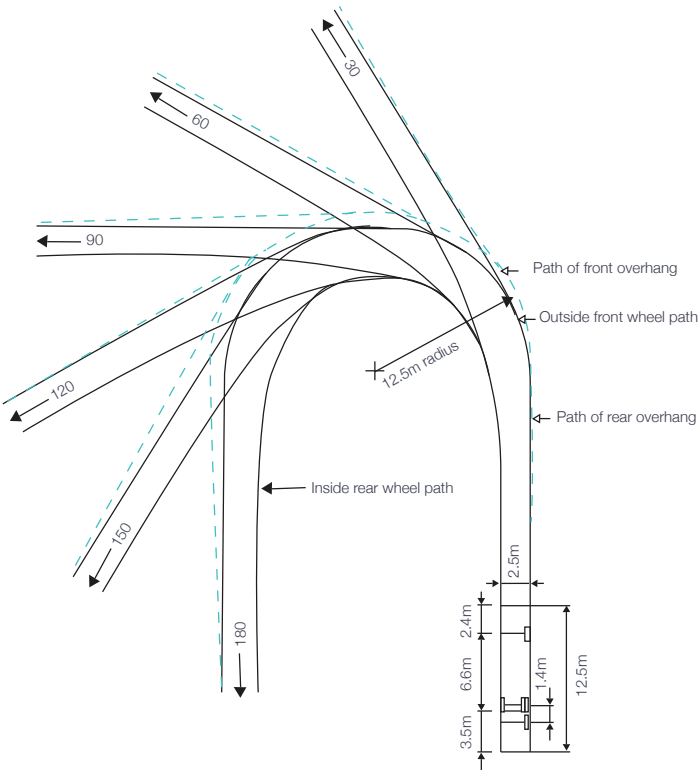


FIGURE 3:
TURNING PATH TEMPLATE HEAVY RIGID VEHICLE

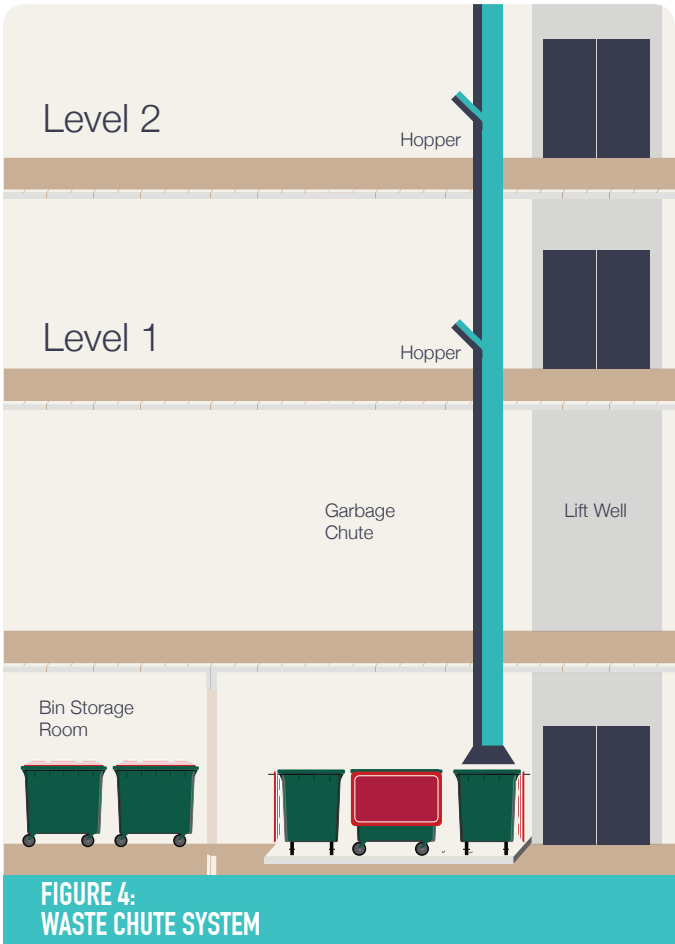


FIGURE 4:
WASTE CHUTE SYSTEM

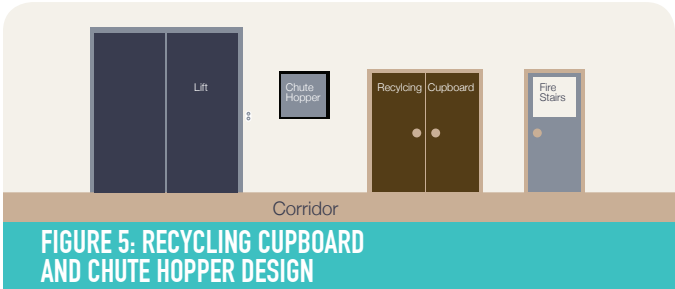


FIGURE 5: RECYCLING CUPBOARD
AND CHUTE HOPPER DESIGN

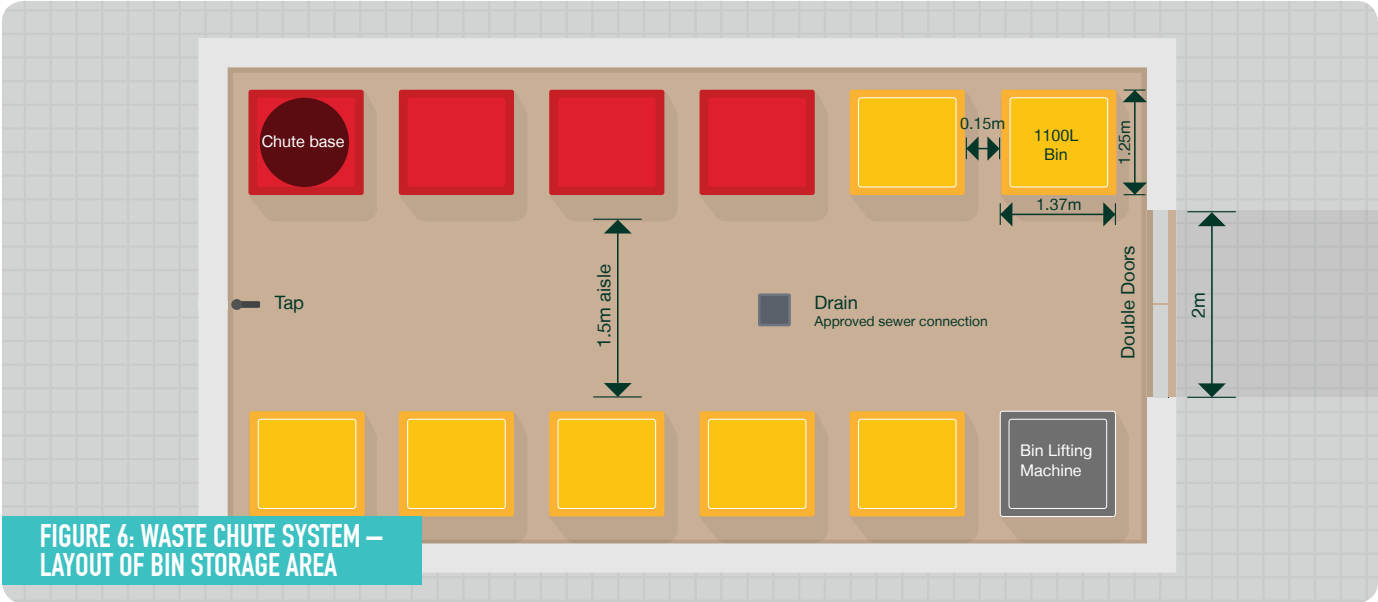


FIGURE 6: WASTE CHUTE SYSTEM –
LAYOUT OF BIN STORAGE AREA

