APPENDIX D: SITE WASTE MINIMISATION AND MANAGEMENT PLAN TEMPLATE

CONTENTS

SECTION 1 – SITE WASTE MINIMISATION AND MANAGEMENT PLAN TEMPLATE

1.1 APPLICANT AND PROJECT DETAILS

Applicant and Project Details (All Developments)	
Applicant Details	
Application No.	
Name	
Address	
Phone number(s)	
Email	
Project Details	
Address of development	
Existing buildings and other structures currently on the site	
Description of proposed development	
This development achieves the waste objectives set out in this Development Control Plan. The details on this form are the provisions and intentions for minimising waste relating to this project. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as council, relevant NSW State waste and health and safety authorities.	
Name	
Signature	
Date	

1.2 DEMOLITION (ALL TYPES OF DEVELOPMENTS)

Address of development: _____

	Reuse	Recycling	Disposal	
Type of waste generated	Estimate Volume (m^3)	Estimate Volume (m^3)	Estimate Volume (m^3)	Specify method of on site reuse, contractor and recycling outlet and /or waste disposal facility to be used
Excavation material				
Timber (specify)				
Concrete				
Bricks/pavers				
Tiles				
Metal (specify)				
Glass				
Furniture				
Fixtures and fittings				
Floor coverings				
Packaging (used pallets, pallet wrap)				
Garden organics				
Containers (cans, plastic, glass)				
Paper/cardboard				
Residual waste				
Hazardous/special waste e.g. asbestos (specify)				
Other (specify)				

1.3 CONSTRUCTION (ALL TYPES OF DEVELOPMENTS)

Amounts provided below should be for excess or leftover construction waste material.

Address of development: _____

Construction Waste ‘Rule of Thumb’ for renovations and small home building:

- Timber 5-7% of material ordered
- Plasterboard 5-20% of material ordered
- Concrete 3-5% of material ordered
- Bricks 5-10% of material ordered
- Tiles 2-5% of material ordered

Source*: Waste Planning Guide for Development Application, Inner Sydney Waste Board, 1998*

Type of Waste	Reuse	Recycling	Disposal	Onsite reuse
Type of waste generated	Estimate Volume (m^3)	Estimate Volume (m^3)	Estimate Volume (m^3)	Specify method of onsite reuse, contractor and recycling outlet and/or waste disposal facility to be used
Excavation material				
Timber (specify)				
Concrete				
Bricks				
Tiles				
Metal (specify)				
Glass				
Plasterboard (offcuts)				
Fixtures and fittings				
Floor coverings				
Packaging (used pallets, pallet wrap)				
Garden organics				
Containers (cans, plastic, glass)				
Paper/cardboard				
Residual waste				
Hazardous/special waste (specify)				

1.4 ONGOING OPERATION (ALL TYPES OF DEVELOPMENT)

Address of development: _____

Show the total volume of waste and recyclables expected to be generated by the development and the associated waste and recycling storage requirements.

Please note that if the development is for a mixed use, that is, contains components of both residential and non-residential development, separate plans regarding the "ongoing operation" may need to be completed.

	Recyclables		**Compostable**	**Residual waste***	**Other**
	Paper/ cardboard	**Metals/ plastics/ glass**			
Amount generated (L per unit per day)					
Amount generated (L per development per week)					
Frequency of collections (per week)					
Number and size of storage bins required					
Floor area required for storage bins (m^2)					
Floor area required for manoeuvrability (m^2)					
Height required for manoeuvrability (m)					

**Current "non-recyclables" waste generation rates typically include food waste that might be further separated for composting.*

1.5 "INDICATIVE BIN SIZES" PROVIDES COUNCIL'S STANDARD BIN SIZES

Construction Design (All Types of Developments)
Outline how measures for waste avoidance have been incorporated into the design, material purchasing and construction techniques of the development:
Detail the arrangements that would be appropriate for the ongoing use of waste facilities as provided in the development. Identify each stage of waste transfer between residents' units/commercial tenancies and loading into the collection vehicle, detailing the responsibility for and location and frequency of, transfer and collection. *(Please refer to other Appendices within this Chapter for further information)*

SECTION 2 – PLANS AND DRAWINGS

(This section to be completed for all developments other than single dwellings, dual occupancies and secondary dwellings).

The following checklists are designed to help ensure SWMMPs are accompanied by sufficient information to allow assessment of the application.

Drawings are to be submitted to scale, clearly indicating the location of and provisions for the storage and collection of waste and recyclables during:

- demolition
- construction, and
- ongoing operation.

2.1 DEMOLITION

Ensure the site plans indicate:

	Tick Yes
Size and location(s) of waste storage area(s)	
Access for waste collection vehicles	
Areas to be excavated	
Types and numbers of storage bins likely to be required	
Signage required to facilitate correct use of storage facilities	

2.2 CONSTRUCTION

Ensure the site plans indicate:

	Tick Yes
Size and location(s) of waste storage area(s)	
Access for waste collection vehicles	
Areas to be excavated	
Types and numbers of storage bins likely to be required	
Signage required to facilitate correct use of storage facilities	

2.3 ONGOING OPERATION

Ensure the site plans indicate:

	Tick Yes
Space	
Size and location(s) of waste and recycling storage areas	
Recycling bins placed next to residual waste bins	
Space provided for access to and the manoeuvring of bins/equipment	
Any additional facilities	
Access	
Access route(s) to deposit waste in storage room/area	
Access route(s) to collect waste from storage room/area	
Bin carting grade	
Location of final collection point	
Clearance, geometric design and strength of internal access driveways and roads	
Direction of traffic flow for internal access driveways and roads	
Amenity	
Aesthetic design of waste storage areas	
Signage – type and location	
Construction details of storage rooms/areas (including floor, walls, doors, ceiling design, sewer connection, lighting, ventilation, security, wash down provisions etc)	

2.4 WASTE AND RECYCLING GENERATION RATES

Ongoing Operation

Premises type	Waste generation	Recyclable material generation
Backpackers' accommodation	40L/occupant space/week	20L/occupant space/week
Boarding house, guest house	60L/occupant space/week	20L/occupant space/week
Butcher	185L/100 sqm floor area/day	100L/100 sqm floor area/day
Delicatessen	80L/100 sqm floor area/day	50L/100 sqm floor area/day
Fish shop	250L/100 sqm floor area/day	85L/100 sqm floor area/day
Greengrocer	310L/100 sqm floor area/day	120L/100 sqm floor area/day
Restaurant	400L/100 sqm floor area/day	280L/100sqm floor area/day
Café	215L/100 sqm floor area/day	300L/100 sqm floor area/day
Supermarket	240L/100 sqm floor area/day	300L/100 sqm floor area/day
Takeaway food shop	175L/100 sqm floor area/day	60L/100 sqm floor area/day
Hairdresser, beauty salon	40L/100 sqm floor area/week	40L/100 sqm floor area/day
Hotel or motel accommodation	20L/100 sqm floor area/day	30L/100 sqm floor area/day
Hotels, bars, clubs	90L/100 sqm floor area/day	80L/100 sqm floor area/day
Child care centre	250L/100 sqm floor area/day	120L/100 sqm floor area/day
Offices	20L/100 sqm floor area/day	30L/100 sqm floor area/day
Retail (non-food)	50L/100 sqm floor area/day	50L/100 sqm floor area/day
Showroom	25L/100 sqm floor area/day	25L/100 sqm floor area/day

SECTION 3 – INDICATIVE BIN SIZES

Bin type	Dwelling Type	Height	Depth	Width	Footprint – m^2 /bin
80 Litre Bin	Single dwelling	825mm	496mm	452mm (wheel to wheel)	0.22 sqm
*120 Litre Bin	Single dwelling or Multi dwelling housing	930mm	545mm	480mm (wheel to wheel)	0.26 sqm
**240 Litre Bin	Single dwelling or Multi dwelling housing or Residential component of Mixed Use Development	1060mm	730mm	585mm	0.43 sqm
 ***660 Litre Bin	Multi dwelling housing or residential component of mixed use development	1250mm	850mm	1370mm	1.16 sqm
55 Litre Bin 	Single dwelling	540mm			Diameter 410mm
Non-Residential Use					
660 Litre skip bin For use in developments that use a commercial waste collection provider.		1250mm	850mm	1370mm	1.16 sqm

* 120L recycling bins are the same dimensions

** 240L recycling and garden bins are the same dimensions

***660L recycling bins are the same dimensions

SECTION 4 – WASTE/RECYCLING STORAGE ROOMS IN MULTI DWELLING HOUSING / RESIDENTIAL FLAT BUILDINGS

Building Code of Australia

Waste/recycling storage rooms must be constructed in accordance with the requirements of the *Building Code of Australia (BCA)*.

Location and Appearance

Waste/recycling storage rooms must be integrated into the design of the overall development. It is preferable that such rooms be located behind the front building line. Wherever possible, and for all buildings with 20 dwellings or more or where required by Council, the room should be in a basement location within the main building envelope (rather than a separate stand-alone structure). Materials and finishes visible from outside should be similar in style and quality to the external materials used in the rest of the development.

Waste/recycling storage rooms must be located and designed in a manner that reduces adverse impacts upon the inhabitants of any dwellings on the site and upon neighbouring properties. The location and design of the room should minimise adverse impacts associated with:

- the proximity of the room to any dwellings;
- the visibility of the room;
- noise generated by any equipment located within the room;
- noise generated by the movement of bins into and out of the room;
- noise generated by collection vehicles accessing the site; and
- odours emanating from the room.

Size

Waste/recycling storage rooms must be of adequate size to comfortably access, accommodate, manouevre, empty and transfer all waste and recycling bins associated with the development.

Layout

The gradient of waste/recycling storage room floors and the gradient of any associated access ramps must be sufficiently level so that access for the purpose of emptying bins can occur in accordance with the NSW Government's Work Health and Safety requirements.

Within waste/recycling storage rooms, bins used for the storage of recyclable materials should be kept separate from (but close to) general waste bins with signage indicating the relevant recyclable waste type— so that the potential for contamination of recyclable materials is minimised.

SECTION 5 – GARBAGE TRUCK DIMENSIONS FOR RESIDENTIAL RESOURCE RECOVERY/WASTE COLLECTION

This page includes information regarding the dimensions of garbage trucks that are typically used for the collection of residential waste. Developments that require Council garbage trucks to enter the site for the collection of residential recycling and waste must be designed to accommodate on-site truck movement.

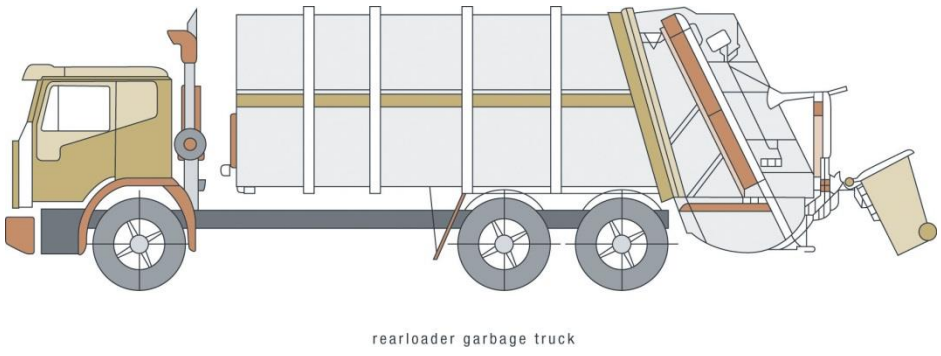
Please note that the size of Council's garbage truck may change over time

Requirements regarding vehicle turning circles and driveway width/gradient are contained in *Australian Standard 2890.2 2002/Parking Facilities — off street commercial vehicles*.

See Section D8: "Vehicle Access and Turning Circles" for further information

It is recommended that an applicant speak with Council in regards to the design of development proposals that involve garbage trucks entering the site. Services will not be provided where there are undue risks.

Typical Council Garbage Truck used for Domestic Waste Collection	
Length overall	9.5 metres
Width overall	2.6 metres
Operational height	4.5 metres
Travel height	4.5 metres
Weight (vehicle and load)	23 tonnes
Turning Circle	26 metres



Example of a Council garbage truck

Source of diagram: *Better Practice Guide for Waste Management in Multi-dwelling housing, DECC 2008.*

SECTION 6 – NON RESIDENTIAL DEVELOPMENT WASTE AND RECYCLING STORAGE AREAS

Building Code of Australia

Waste/recycling storage areas must be constructed in accordance with the requirements of the *Building Code of Australia (BCA).*

6.1 LOCATION AND APPEARANCE

Waste/recycling storage areas must be integrated into the design of the overall development. Materials and finishes that are visible from outside should be similar in style and quality to the external materials used in the rest of the development.

Waste storage areas for non residential development need to be separate from the residential development component.

Waste/recycling storage areas must be located and designed in a manner that reduces adverse impacts upon neighbouring properties and the streetscape. The location and design of the areas should minimise adverse impacts associated with:

- the proximity of the area to dwellings;
- the visibility of the area;
- noise generated by any equipment located within the area;
- noise generated by the movement of bins into and out of the area;
- noise generated by collection vehicles accessing the site; and
- odours emanating from the area.

6.2 SIZE

Waste/recycling storage areas must be of adequate size to comfortably accommodate all waste and recycling bins associated with the development.

Waste/recycling storage areas must be able to accommodate separate general waste bins and recycling bins which are of sufficient volume to contain the quantity of waste generated between collections.

6.3 LAYOUT

The gradient of waste/recycling storage area floors and the gradient of any associated access ramps must be sufficiently level so that access for the purpose of emptying bins can occur in accordance with WorkCover NSW Work Health and Safety requirements.

Within waste/recycling storage areas, bins used for the storage of recyclable materials should be kept separate from (but close to) general waste bins— so that the potential for contamination of recyclable materials is minimised.

6.4 ACCESS: WASTE/RECYCLING COLLECTION

The development must be designed to allow access by collection vehicles used by the nominated waste contractor. Wherever possible, the site must be configured to allow collection vehicles to enter and exit the site in a forward direction and ensure collection vehicles do not impede general access to, from and within the site. Access driveways to be used by collection vehicles must be of sufficient strength to support such vehicles.

Servicing arrangements for the emptying of bins must be compatible with the operation of any other loading/unloading facilities on-site.

Access for the purpose of emptying waste/recycling storage bins must be able to occur in accordance with NSW Government Work Health and Safety requirements.

6.5 ACCESS: GENERAL

In commercial development, public buildings and industrial development, there must be convenient access from each tenancy to the waste/recycling storage area(s). There must be step-free access between the point at which bins are collected/emptied and the waste/recycling storage area(s).

Arrangements must be in place so that the waste/recycling storage area is not generally accessible to the general public.

Vermin must be prevented from entering the waste/recycling storage area.

6.6 SURFACES

Waste/recycling storage areas must have a smooth, durable floor and must be enclosed with durable walls/fences that extend to the height of any containers which are kept within.

6.7 DOORS/GATES

Doors/gates to waste/recycling storage areas must be durable. There must be a sign adjacent to the door/gate that indicates that the door/gate is to remain closed when not in use. All doors/gates are to be openable from both inside and outside the storage area and must be wide enough to allow for the easy passage of waste/recycling bins.

6.8 SERVICES

Waste/recycling storage areas must be serviced by hot and cold water provided through a centralised mixing valve. The hose cock must be protected from the waste bins and must be located in a position that is easily accessible when the area is filled with waste bins.

The floor must be graded so that any water is directed to an approved sewer connection located upon the site.

6.9 SIGNAGE

Waste/recycling storage areas must include signage that clearly describes the types of materials that can be deposited into recycling bins and general garbage bins.

6.10 MANAGEMENT

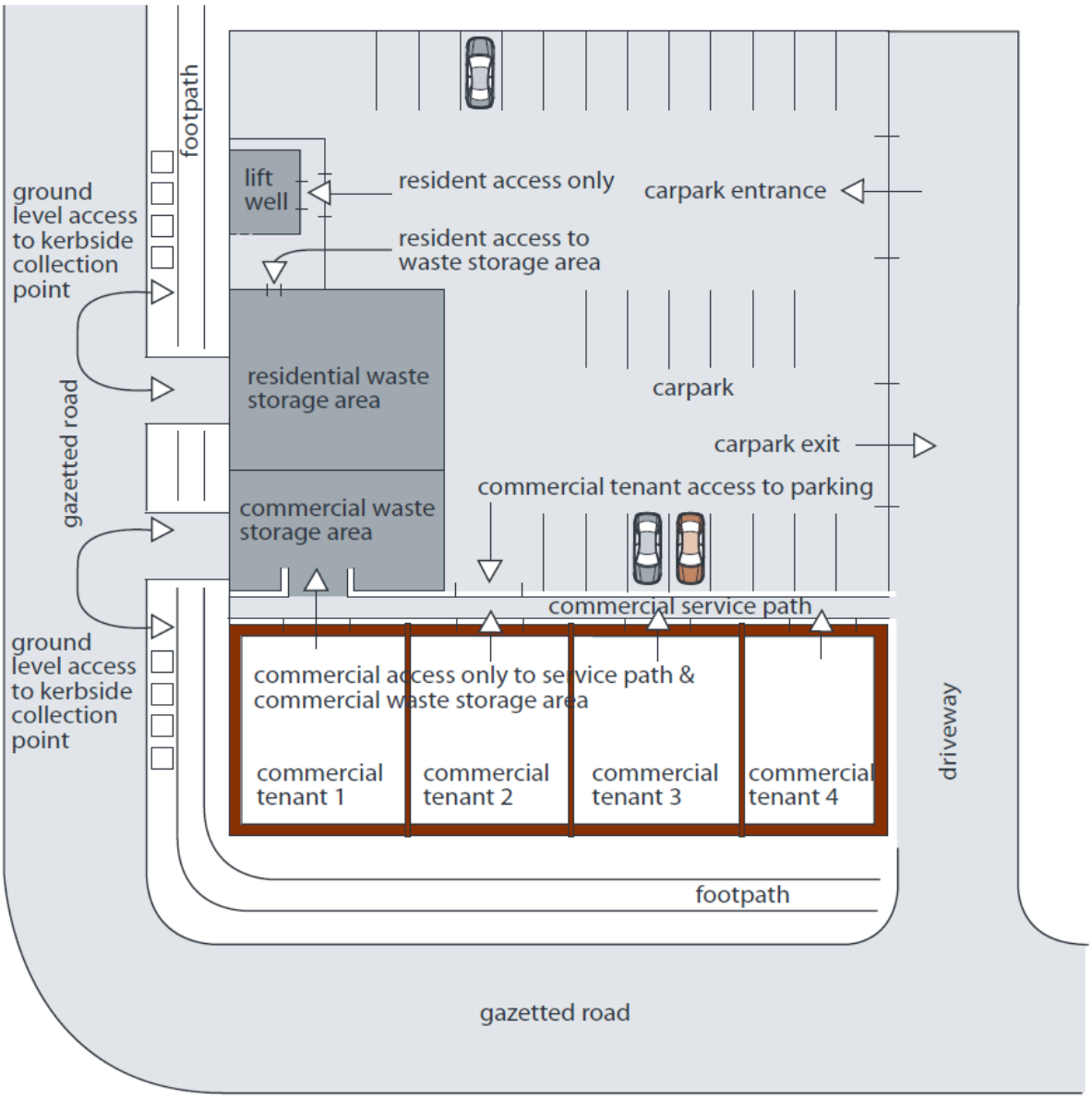
Arrangements must be in place for the regular maintenance and cleaning of waste/recycling storage areas. Waste/recycling bins must only be washed in an area which drains to an approved sewer connection.

The *Better Practice Guide for Waste Management in Multi-dwelling housing* gives detailed information about waste recycling/storage rooms and facilities. It can be used as a guide in conjunction with the controls in this Development Control Plan. The Guide was substantially reviewed in 2007 and is available on the NSW Office of Environment and Heritage website (www.environment.nsw.gov.au). Further updates will be published as further information from social research and waste stream audits becomes available.

SECTION 7 – EXAMPLE OF A WASTE AND RECYCLING STORAGE ROOM(S)

The following figure provides an example of the location of bin storage areas for possible mixed use developments. This diagram highlights separate storage rooms for residential and commercial use.

This example is a guide only and other arrangements could be suitable.



***Source**: Mixed Use Development – Better Practice Guide for Waste Management in Multi-dwelling housing, Department of Environment and Climate Change NSW*

SECTION 8 – VEHICLE ACCESS AND TURNING CIRCLES

General

Appropriate heavy vehicle standards should be incorporated into the development design including those specified in Acts, regulations, guidelines, and codes administered by Austroads, Standards Australia, NSW Roads and Maritime Services, NSW WorkCover and any local traffic requirements.

Designers are encouraged to consult with Council and other relevant authorities prior to the design of roads and access points to ascertain specific requirements for the proposed development.

Road and driveway construction and geometry

Roads and driveways must be designed and constructed in accordance with the relevant authority requirements to allow the safe passage of a laden collection vehicle in all seasons.

Factors to be considered in design include:

- gradients for turning heads;
- longitudinal road gradients;
- horizontal alignments;
- vertical curves;
- cross-falls;
- carriageway width;
- verges;
- pavement widths;
- turning areas (see below);
- local area traffic management requirements (for example speed humps);
- sight distance requirements;
- clearance heights (for example a vertical clearance of 6.5m is required to load front-lift vehicles);
- manoeuvring clearance; and
- road strength (industrial-type strength pavement required, designed for a maximum wheel loading of seven tonnes per axle to accommodate garbage and recycling collection vehicles).

Collection from basements

Collection vehicles that are required to enter building basements to collect waste and/or recyclables are to comply with the following requirements:

- compliance with Australian Standard AS 2890.2 Parking Facilities: Off-Street Commercial Vehicle Facilities. This Standard provides detailed information regarding turning circles for a garbage truck. This Standard is available from SAI Global www.saiglobal.com;

- the height to the structural members and upper floor ceiling should allow for a typical collection vehicle travel height/operational height consistent with the type of vehicle employed;
- adequate provision of space clear of structural members or vehicle parking spaces to allow a typical three-point turn of collection vehicles; and
- the basement floor should be of industrial-type strength pavement and designed for a maximum wheel loading of seven tonnes per axle to accommodate garbage and recycling collection vehicles.

SEE ALSO SECTION D5:"GARBAGE TRUCK DIMENSIONS FOR RESIDENTIAL RESOURCE RECOVERY/WASTE COLLECTION"

SECTION 9 – WASTE CHUTES

Waste chute room design

Waste chute rooms are to be designed in accordance with the following:

- In buildings containing a waste chute system, at least one dedicated service room must be provided on each floor of the building, containing a chute service opening (for depositing waste into the main chute) and bins for the storage of recyclable materials.
- Chute rooms must be designed with sufficient capacity for the storage of two days quantity of recyclables for all dwellings on that level, based on rates in Part D, 2.3, C20 and C21.
- Chute rooms must be located for convenient access by users and be near the lift to enable transfer of bins without moving along corridors that access building occupancies.
- Chute rooms must be well ventilated and well lit.
- The floors, walls and ceilings of chute rooms must be finished with smooth, durable, light coloured materials (with coved intersection between wall/floor), which are capable of being easily cleaned.
- Chute rooms must include signage, displayed near the chute opening and recycling bins, which clearly describes the types of materials which can be deposited into the waste chute and the types of materials which can be deposited into recycling bins.

Waste chute design

Waste chutes must be designed in accordance with the following:

- The charging device for each waste chute service opening must be self closing and must not project into the main waste chute.
- Branches connecting service openings to the main waste chute must be no more than 1 metre long.
- Waste chutes must be located and insulated to reduce noise impact upon dwellings.
- Waste chutes, service openings and charging devices must be constructed of material (such as metal) which is smooth, durable, impervious, non-corrosive and fire resistant.
- Waste chutes, service openings and charging devices must be capable of being easily cleaned.
- Waste chutes must be cylindrical and should have a diameter of at least 500mm.
- There must not be any bends (or sections of reduced diameter) in the main shaft of the waste chute.
- Internal overlaps in the waste chute must follow the direction of waste flow.
- Waste chutes must deposit rubbish directly into a bin located within a recycling/waste storage room.
- A cut-off device must be located at or near the base of the waste chute so that the bottom of the waste chute can be closed when the bin at the bottom of the waste chute is withdrawn or being replaced.
- The main waste chute must be adequately ventilated.

- Chutes are for the disposal of general waste only, recycling chutes are not permitted.
- Use of mechanical diverters to separate various types of waste within a single chute are not permitted.

Management

- Recycling bins must be transferred daily by a building caretaker to the main recycling/waste storage room.
- Arrangements must be in place for the regular maintenance and cleaning of service rooms, waste chutes, chute service openings and charging devices.

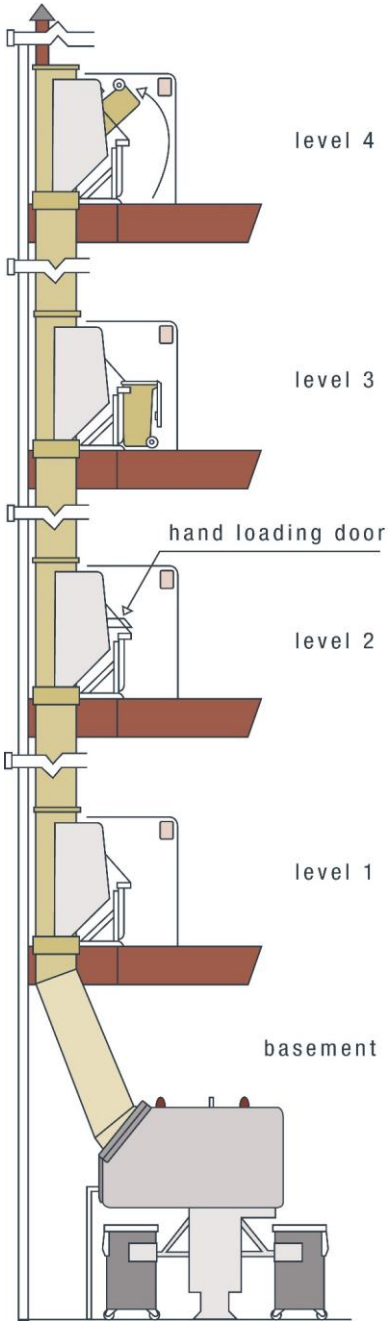


Figure 2: Example of a garbage chute system.
Source of diagram: Better Practice Guide for Waste Management in Multi-Unit Dwellings, Resource NSW, February 2002.