

Development: Integrated Development

Municipality: City of Sydney

Integrated developments can provide residents with access to a variety of services and different accommodation options within the one site. They contain a series of different building types and uses. Collection of garbage and recyclables from these developments can be problematic if not well planned and managed. This can be due to private roads within the development, share-ways between different buildings and the generation of both commercial and residential waste.

Therefore, as in this case, provisions for waste management for integrated developments must be carefully considered and designed.

Buildings and facilities within the development

Developed over a series of four stages, there are eleven (11) buildings laid out on either side of a central avenue, including residential and commercial premises and recreational facilities such as a gym and pool. There are approximately 560 residential dwellings in total.

Each building is provided with a garbage and recycling service. The type of waste facilities provided in each building varies according to the building type such as: whether the building is low-rise, three to four storeys or high-rise and if it includes commercial leases in addition to residential units.

Description of waste management systems

Low-rise

Residents in the low-rise building are required to transfer their garbage and recyclables from their dwelling to a communal storage area located within the basement car park.

Three to four storeys

Residents on each level of these buildings have access to a garbage and recycling facility.

Each level has recycling crates located in service compartments adjacent to the garbage chute hopper. This makes disposal of recyclables convenient and encourages recycling participation. Additional recycling bins are also stored in a designated communal area within the basement car park which is always accessible to residents. This area is adjacent to the chute discharge room which is not accessible to residents.

The garbage chute system discharges into a bag carousel in the chute discharge room. Caretakers monitor the system and dispose of full garbage bags from the carousel into bulk skips. Caretakers are also responsible for transferring the recyclables from each level in the buildings to the recycling bins in the chute discharge room.

There are a large number of units in the development which can lead to an increase in the generation of bulky waste as tenants move in and out. Therefore bulk skips are also provided in the basement car park to enable



Building Layout within the development



Communal recycling area

residents to dispose of bulky items that are not suitable for disposal in the chute system.

High-rise

The waste facilities in the high-rise building are a waste chute for garbage and mobile garbage bins (MGBs) for recycling. The recycling bins are located in a designated service room on each level, which is separate from but near to, the garbage chute service room. This limits the level of inconvenience for residents when having to access both the recycling and garbage facilities.

Waste from the garbage chute empties into bulk bins located in a service room in the basement car park. Caretakers regularly monitor the level of waste in the bulk bin under the chute to determine when it needs to be swapped over with an empty bin. Access to the service room is restricted to caretakers only.

Similar to the low rise and three-storey walk-up, each resident in the high-rise building has access to bulky waste disposal facilities. The designated area for leaving bulky unwanted items is clearly signposted and is located in the basement car park. A clothes bin is also located adjacent to the area to encourage the donation of second hand items to charity.



Recycling crates adjacent to garbage chute hopper



Entrance to a recycling service compartment



Chute and carousel system and the additional recycling bins for storage of recyclables transferred from the recycling crates located on each level of the building (caretaker access only).



Garbage chute emptying into bulk bins



Recycling bins accessible to residents are stored in a communal area in the basement car park.



Recycling bins for separated cardboard, paper and commingled recycling.

Management of commercial waste

There are a number of commercial premises within the development including a convenience store, café and bottle shop.

Commercial waste bins are located in a designated 'commercial waste' area in the basement. Commercial tenants are responsible for disposing of waste into the appropriate bins.

Bulk bins are provided for the recycling and collection of cardboard from the commercial premises due to the large amount of cardboard packaging generated from the bottle shop and convenience store. The recycling bins are normally kept locked to help prevent inappropriate use by residents.

Colour coded bins are used to identify the different commercial waste. For example purple bins are being phased in for the segregation and disposal of commercial food waste from the onsite café.

Waste collection

There are a large number of different types of garbage and recycling bins to be collected from the development. The majority of waste collection takes place onsite which limits the need for transferring a large number of bins to and from buildings. On site collection also has amenity and safety benefits for the surrounding community due to less bins on public streets.

The efficient and safe servicing by waste collection vehicles is made possible due to the wide central avenue dissecting the development. A roundabout at the end of the avenue allows vehicles to turn around and access buildings on both sides of the avenue, eliminating the need for potentially dangerous reversing or tight three-point turns.

For those buildings that utilise bulk bins, sufficient height clearance and appropriate ramp access to the basement storage areas has been included in the building design, to allow for safer collection.

The bulk garbage skips are collected from inside the car park and the bins are moved from the normal storage areas to a suitable collection point clear of obstacles. Caretakers are responsible for moving both the garbage and recycling MGBs to and from the storage area to the collection point as required.

As there are 560 resident units and additional commercial properties within the development, a considerable amount of garbage and recycling is collected from the facility. This waste is stored onsite which may require significant storage space if not well managed and planned for.



High rise bulk waste disposal facility



Locked commercial recycling bin



Wide entrance/exit to development via central avenue

To reduce on site requirements for storage between collections, building management and the collection service have signed an agreement for twice weekly collection of garbage for some of the buildings.

Ongoing management

The importance of ongoing management and maintenance of waste services and facilities cannot be stressed enough for a development of this type.

Caretakers are employed to maintain the waste system seven days per week. They play a critical role in ensuring appropriate use of the systems provided. They monitor bins and crates that require swapping with empty ones when full, move bins to and from the collection points, maintain clean and safe conditions in bulky waste storage areas, arrange for bulky waste collections as required and educate new residential and commercial tenants as they move into the development.

Having an active caretaker and management team is also important for the early identification of potential issues and the implementation of measures to address them as soon as possible. For example, the management team in this development have been proactive in addressing noise issues. Noise from the movement of bulk bins was previously identified as impacting on residential amenity, so the issue was addressed by negotiating with the service provider to replace the former metal wheels on the bulk bins with rubber wheels.



Roundabout sufficiently sized to allow safe manoeuvring of collection vehicles.