

Development: Mixed-Use

Municipality: Sutherland Shire Council

Sutherland Shire has noted an increase in development applications for mixed-use developments. A mixed-use development is made up of retail, food and residential components, and this example has approximately 12 retail and food stores and 198 residential dwellings, split between a mix of low rise (3 storey) and high-rise (9 storey) residential accommodation.

Waste management systems are differentiated between the low-rise, high-rise and commercial components of the development. Importantly, waste from the commercial units within the development remains segregated from the domestic waste at all times. This complex shows different elements of waste management for this type of development.

Management of domestic waste

Low-rise

Residents in the low-rise section of the development are required to transfer their own garbage and recyclables from their dwellings to one of three intermediate waste storage areas, located in the residential basement parking.

High-rise

Garbage disposal in the high-rise section of the development is through the use of a garbage chute.

The garbage chute is accessible from a service compartment on each level. No provisions for recycling are currently included in the service areas on each floor, as residents are encouraged to take recycling directly to one of the intermediate storage areas located underneath the building. Any recycling left in service areas however is removed daily by building caretakers, and transported to the centralised collection point.

The garbage chutes empty waste into a rotating mobile garbage bin (MGB) compactor carousel, which is located in an intermediate storage area in the residential parking level beneath the development. The storage area is not accessible to residents. Bins from the intermediate storage area are transferred by building caretakers to the central storage and collection point.

Central storage area and collection point

The central storage area serves as a collection point for both residential and commercial wastes. Within this area, colour coded garbage and recycling bins are grouped and neatly aligned in clearly defined areas. A bulk container for cardboard is also provided.

Sufficient space has been provided for the temporary storage of bulky waste items, which are collected from the site by a private contractor as required.



Mixed-use development



Intermediate storage areas with clearly separated bins for garbage and recycling



Segregation of garbage and recycling in the residential central storage and collection area

Access for residents

Each intermediate storage area, other than where the MGB compactor empties, is accessible to residents. The areas are located on the same underground level as the resident parking beneath the building and adjacent to lift wells, making access for residents easy and convenient.

Management of commercial waste

There are separate intermediate waste storage areas for residential and commercial waste. Bulk bins from the intermediate commercial storage area are wheeled to the central storage area and collection point (shared with residential waste) for collection only, and are returned directly to the commercial area after collection. Commercial waste services are provided by a private (non-council) contractor utilising bulk bins.

Access for commercial premises

The intermediate commercial waste storage area is located on the same level as the commercial parking area. Commercial tenants have easy access via the rear of the commercial properties.

Waste storage area fit-out

Both residential and commercial storage areas are fitted with a roller door and personnel door access. The access provides easy movability of bins in and out of the areas for cleaners / caretaker, and flexibility for future changes in bin sizes if required.

All waste storage areas are fitted with hot and cold water services, hose facilities, insecticide dispenser and air freshener and drain to the sewer. Amenity and hygiene of the central storage room is further improved through the use of an expanded metal door, which helps to increase ventilation and control odour.

Servicing and collection

The development fronts a major road from which servicing could be problematic. Council therefore provides onsite garbage and recycling collection services from a quieter side-street. The street access leads directly to the central storage and collection room.

The central storage and collection room has been designed to accommodate a waste collection vehicle entering the storage area at ground level. The height of the onsite internal service area is sufficient to accommodate front-lift collection of bulk bins if needed.



Commercial waste storage area



Expanded metal door entrance to the central storage and collection room from street level



Elevated ceiling height to allow for front-lift waste collection if needed

Council and building management have developed a process to enable efficient onsite collection of garbage and recycling bins. The process involves building caretakers placing full bins in a position located along one wall of the central storage area. Once emptied, the empty bins are relocated to the adjacent wall. This system enables collection crews to quickly collect and replace bins without the need for double-handling of bins that are stored a number of rows deep.

Ongoing management

The chute system combined with multiple intermediate storage areas is convenient for residents, as waste facilities are easily accessible from all areas of the development. However, a building caretaker is required to transfer bins on a daily basis from the residential storage areas in the basements, to the central storage area and collection point located three levels above. This is undertaken with the assistance of a trailer. Roller doors are fitted on the internal walls between the car park and waste storage areas, to facilitate the unloading of bins from the trailer and their movement into the storage areas.

Significant time is allocated to on-going waste management due to the separation between intermediate storage areas and the central collection point. In addition to this, there are increased occupational health and safety risks due to the need to move a large number of bins each day. However, the system reportedly works well as there is ample access for the residential and commercial premises to garbage and recycling facilities.

As well, the success of the system is partly due to the regular maintenance and management of the service areas, and the availability of a cleaner seven days a week.

Education

All new residents are given information on how to use the garbage and recycling services when they move into the development.

Ongoing education is provided by well sign-posted and educational materials posted on the doorway entrance, recycling bin lids and walls within the storage areas.



Trailer used to move bins from intermediate to central storage and collection area



Access to the central storage and collection room from the carpark