

WASTE MANAGEMENT PLAN

HIGH SUPPORT ACCOMMODATION PROJECT 33 Guttman Approach SHENTON PARK

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For MSWA**

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EXECUTIVE SUMMARY

MSWA is applying to the State Design Review Panel to develop a high support accommodation facility at 33 Guttman Approach, Shenton Park. The facility is proposed to have 20 High Support rooms and various resident and visitors' facilities.

As part of the Review Panel process, the developer is required to submit a Waste Management Plan (WMP) for the development to the approving authority. Parry and White Architects (on behalf of MSWA) employed the services of waste management specialists, Dallywater Consulting, to investigate the Authority and the City of Nedland's requirements in this regard and to develop this WMP.

It is proposed that the following initiatives will be implemented for the waste servicing of the MSWA facility at 33 Guttman Approach, Shenton Park:

- Use of 660 or 1100 litre receptacles; and
- A minimum of twice-weekly servicing of both the waste and recycling bins.

The above arrangements will result in a requirement for sufficient space in the facility bin store for a minimum of five 660 litre bins or three 1100 litre bins.

It is noted that these numbers are an example only as, based on the performance of the facility and its waste management and minimisation strategies, these numbers will be adjusted to suit the generation activity.

Review

All of the above-mentioned waste servicing arrangements will be reviewed as a matter of course on an ongoing basis to ensure that the most efficient arrangements to manage the waste and recycling material generated by all aspects of the facility are in place and are maintained.

DEFINITIONS

660: A 660 litre waste or recycling receptacle.

1100: A 1100 litre waste or recycling receptacle.

Building Management: For the purposes of this document, the selected legal entity charged with managing the soft services of the built structure (i.e. waste management, cleaning, landscaping, security and other similar human-sourced services) on behalf of the owners and tenants of the building.

Recycling: Any material accepted by the local government's recycling collection contract.

Waste*: Any recyclable and non-recyclable discarded solid, semi-solid, liquid or contained gaseous materials not accepted by the local government's recycling collection contract.

Waste Minimisation: A process to minimise the amount of waste requiring disposal via hierarchical activities such as behaviour and product modification, waste avoidance, reduction, reuse and recycling.

Total Waste Stream: The combined waste, recyclables and compostables.

1 INTRODUCTION

1.1 The Development

MSWA is applying to the State Design Review Panel to develop a high support accommodation facility at 33 Guttman Approach, Shenton Park. The facility is proposed to have 20 High Support rooms and various resident and visitors' facilities.

As part of the Review Panel process, the developer is required to submit a Waste Management Plan (WMP) for the development to the approving authority. Parry and White Architects (on behalf of MSWA) employed the services of waste management specialists, Dallywater Consulting, to investigate the Authority and the City of Nedland's requirements in this regard and to develop this WMP.

Figure 1: Location Plan

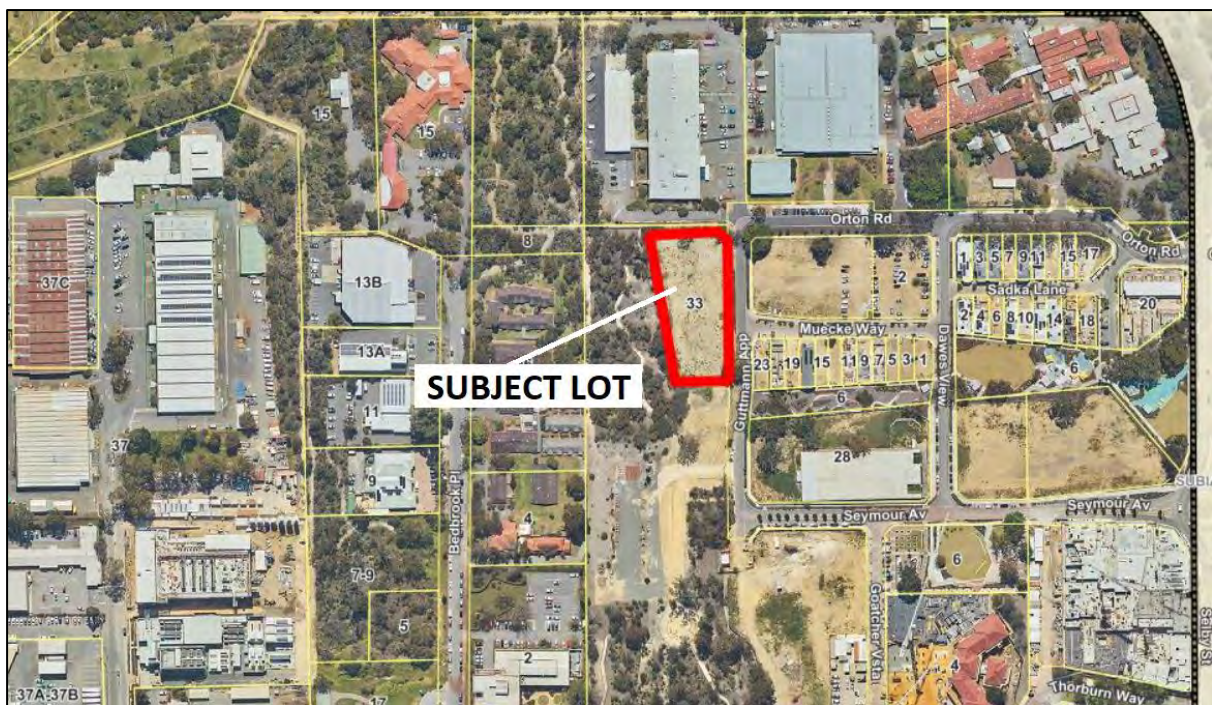
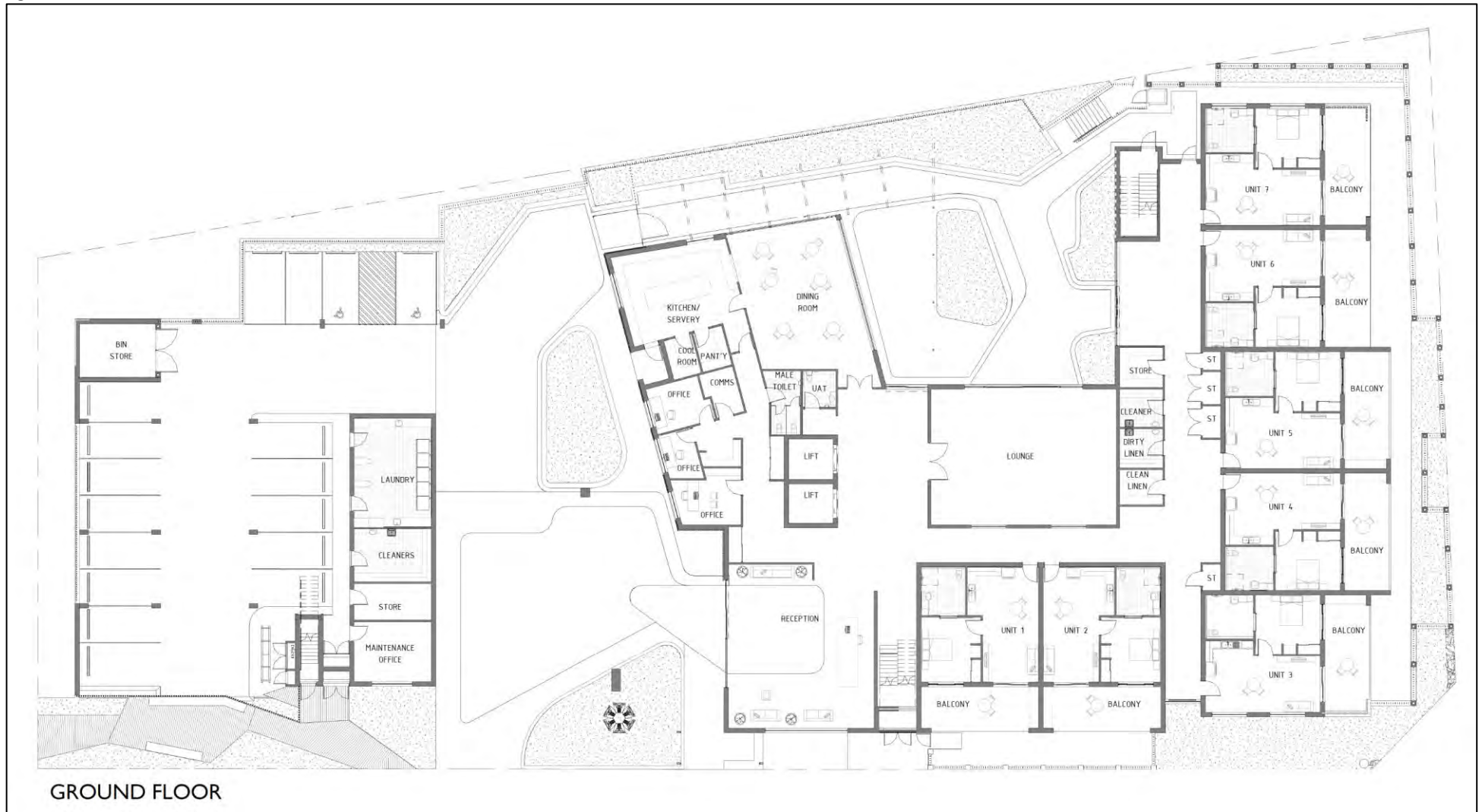


Figure 2: Site Plan



The following table details the numbers (and types) of the various uses proposed for the development which contribute to the waste generation.

Table 1: Number/Size of Waste Generating Uses

Area	
Rooms	Number
High Support Rooms (1-bed)	20
Other Areas/Uses	~m2
Ground Floor	
Laundry	38.0
Cleaner	18.7
Office (Maintenance)	208.0
Reception	100.0
Offices (x3)	25.0
Lounge	117.8
Kitchen/Servery	46.5
Dining Room	71.3
Male Ablutions	9.0
UAT	5.8
First Floor	
Offices (x2)	25.9
Spa	29.4
Exercise	31.3
Staff Lunch	30.0
Staff Lounge	40.5
Dining Room	71.3
Theatre/Lounge	117.8
Servery/Kitchen	34.9
Male WCs	9.0
Female WCs	16.6
UAT (x2)	14.6
Second Floor	
Balcony/Activities	321.4
UAT	8.1
WC's (x2)	8.1

1.2 Onsite Waste Management

The following provisions have been made for waste and recycling on the site.

1.2.1 General Waste and Recycling

- Small waste and recycling bins are positioned throughout the public and private areas of the facility for residents, staff and visitors to dispose of waste and recycling material.
- All areas of the facility including the bedrooms are serviced by facility cleaning staff, with waste and recycling material collected into bags for removal to the bin store, located in the carpark on the ground level.
- Depending on the area, cleaners will take bags of separated material to 120 or 240 litre bins located at specific locations during the cleaning cycles, and once those bins are filled, cleaning staff will relocate those bins to the main bin store and empty the material into 660 or 1100 litre bins. (NOTE: see 4.4 with regards OS&H arrangements for this activity).
- Waste management staff will be tasked to monitor the bins in the stores to ensure that empty or part empty bins are accessible to cleaning and facilities staff at all times and that each bin is filled before the next one is used.

1.2.2 Medical Waste

Medical waste products or sharps (needles, scalpel blades, broken ampoules) or anything which has been used on patients which may be contaminated cannot be disposed of to the general waste receptacles. This material will be placed into specially signed and coloured 240-litre controlled waste bins to be collected by a controlled waste licensed company for collection and disposal.

1.2.3 Confidential Paper

A document destruction service will be contracted to remove confidential records for shredding and disposal. These bins will be located within secure areas of the facility and serviced as required.

1.2.4 Hardwaste/Bulky Items

Hard and bulky waste will be removed immediately from within the buildings and will be stored separately to the bin store. Bulky waste will be disposed of as required to landfill or to a reuse or recycling opportunity.

1.2.5 Greenwaste

The gardens will be managed by staff or a contractor and all greenwaste would be removed offsite as it is generated to a suitable disposal site. Small amounts of garden waste could be disposed of to the waste bins.

1.2.6 Waste Collection/Service

- The facility management can source a private collection arrangement.

2 LOCAL GOVERNMENT WASTE MANAGEMENT REQUIREMENTS

2.1 Waste Management Guidelines

To prepare a waste management plan for commercial developments, the City references its *Local Planning Policy Waste Management in Multiple Unit Developments (Policy Number LPP 1.14)*. For the commercial waste generation rates across the various activities conducted in the building, the author has used results for solid waste audits conducted by them of similar facilities and City of Sydney's *Guidelines for Waste Management in New Developments 2021*.

The Plan has also been prepared based on the following assumptions which reflect the usual expectations of the local government;

- A variety of bin sizes can be accommodated (e.g. 240 litre, 660 litre and 1100 litre); and
- Waste and recycling receptacles are to be provided in sufficient numbers to cater for the waste generation volumes as indicated in the Plan and agreed to by the approving authority.

2.2 Waste Generation

The following tables detail the required and assumed waste generation rates¹ to be applied to calculations for the total waste and recycling volumes expected from the various areas of the development.

Table 2: Waste Generation Rates

Area	Number	Waste/Room/Day	Recycling/Room/Day
		(m ³)	(m ³)
Rooms			
High Support Rooms (1-bed)	20	0.01	0.004
Other Areas/Uses	m ²	Waste/100m ² /day	Recycling/100m ² /day
		(m ³)	(m ³)
Ground Floor			
Laundry	38.0	0.02	0.001
Cleaner	18.7	0.01	0.01
Office (Maintenance)	208.0	0.01	0.01
Reception	100.0	0.01	0.01
Offices (x3)	25.0	0.01	0.01
Lounge	117.8	0.005	0.001
Kitchen/Servery	46.5	0.6	0.05
Dining Room	71.3	0.005	0.001
Male Ablutions	9.0	0.01	0.001
UAT	5.8	0.01	0.001
First Floor			
Offices (x2)	25.9	0.01	0.01
Spa	29.4	0.005	0.001
Exercise	31.3	0.005	0.001
Staff Lunch	30.0	0.01	0.01
Staff Lounge	40.5	0.01	0.01
Dining Room	71.3	0.005	0.001
Theatre/Lounge	117.8	0.005	0.001
Servery/Kitchen	34.9	0.06	0.05
Male WCs	9.0	0.01	0.001
Female WCs	16.6	0.01	0.001
UAT (x2)	14.6	0.01	0.001
Second Floor			
Balcony/Activities	321.4	0.005	0.001
UAT	8.1	0.01	0.001
WC's (x2)	8.1	0.01	0.001

¹ Room calculations based on assessment of similar facilities: Dallywater Consulting (various waste audits and WMPs)

2.3 Bin Stores

- Bin stores are to be provided for the weekly volume of material generated by the facility.
- Bin stores are to be adequate to house all bins with sufficient area to manoeuvre the bins to ensure that an empty or part empty bin is available to all users at all times.
- Bin stores are to be provided with a permanent water supply and drainage facility for wash down.

2.4 Bin Presentation

- Once the waste and recyclables have been collected from throughout the facility, the material is to be taken to the main bin store for consolidation.
- Collection is to take place in the vicinity of the bin store within the carpark area.
- The bin presentation area or collection point is flat, with the travel path between the bin store and collection point/vehicle clear of steps or kerbs.
- The distance between the bin store and the presentation area is less than ten (10) metres.
- Bins will be positioned within the store in such a manner so as to allow unobstructed access for the collection vehicle operators.
- Bins would be returned to the stores as soon as they have been emptied.

2.5 Waste Capacity

Based on the above requirements, the weekly storage capacity for waste and recycling from the proposed development is detailed in the following table.

Table 3: Estimated Weekly Volumes – High Support Facility

Area	Number	Waste/Room/Day	Recycling/Room/Day	Waste/Week	Recycling/Week
Rooms		(m ³)	(m ³)	(m ³)	(m ³)
High Support Rooms (1-bed)	20	0.01	0.004	1.4	0.56
Other Areas/Uses	m ²	Waste/100m ² /day	Recycling/100m ² /day	Waste/Week	Recycling/Week
		(m ³)	(m ³)	(m ³)	(m ³)
Ground Floor					
Laundry	38.0	0.02	0.001	0.0531	0.0027
Cleaner	18.7	0.01	0.01	0.0131	0.0131
Office (Maintenance)	208.0	0.01	0.01	0.1456	0.1456
Reception	100.0	0.01	0.01	0.0700	0.0700
Offices (x3)	25.0	0.01	0.01	0.0175	0.0175
Lounge	117.8	0.005	0.001	0.0412	0.0082
Kitchen/Servery	46.5	0.6	0.05	1.9530	0.1628
Dining Room	71.3	0.005	0.001	0.0249	0.0050
Male Ablutions	9.0	0.01	0.001	0.0063	0.0006
UAT	5.8	0.01	0.001	0.0040	0.0004
First Floor					
Offices (x2)	25.9	0.01	0.01	0.0181	0.0181
Spa	29.4	0.005	0.001	0.0103	0.0021
Exercise	31.3	0.005	0.001	0.0109	0.0022
Staff Lunch	30.0	0.01	0.01	0.0210	0.0210
Staff Lounge	40.5	0.01	0.01	0.0284	0.0284
Dining Room	71.3	0.005	0.001	0.0249	0.0050
Theatre/Lounge	117.8	0.005	0.001	0.0412	0.0082
Servery/Kitchen	34.9	0.06	0.05	0.1465	0.1221
Male WCs	9.0	0.01	0.001	0.0063	0.0006
Female WCs	16.6	0.01	0.001	0.0116	0.0012
UAT (x2)	14.6	0.01	0.001	0.0102	0.0010
Second Floor					
Balcony/Activities	321.4	0.005	0.001	0.1125	0.0225
UAT	8.1	0.01	0.001	0.0057	0.0006
WC's (x2)	8.1	0.01	0.001	0.0057	0.0006
TOTAL GENERATION				4.18	1.22

2.6 Number of Bins

Based on the design of the service access way on the site, the collection is suited to a rear or front-load vehicle. The proponent is able to seek an alternative private collection arrangement with a commercial collection entity. The use of commercial collections enables increased service frequencies which decreases bin numbers and will assist in the best practice management of putrescible material in the bin store areas.

Based on the above volumes, the number of 660 or 1100 litre receptacles required to cater for the weekly waste and recycling volumes for this development are detailed in the following table.

Table 4: Required Bin Capacity

RECEPTACLES	Waste	Recycling
Weekly Generation (m3)	4.18	1.22
No. of 660 litre receptacles/week	6.33 (7)	1.85 (2)
No. of 1100 litre receptacles/week	3.80 (4)	1.11 (2)

2.7 Summary

Based on the above and on weekly waste and recycling collections, seven 660 litre waste MGBs and two 660 litre recycling MRBs would be required to be emptied each week. If 1100 litre bins are used, four waste bins and two recycling bins would be required.

These numbers of receptacles and the storage areas required for them would impinge significantly on available floor space within the development and raise many issues in regards to their management within the site (e.g. handling, movement between areas and from stores to collection points etc).

Options need to be considered to reduce the number of bins required to be stored on and collected from the site.

3 REDUCING CAPACITY

It can be seen from the preceding tables that alternatives should be considered to reduce the number of waste and recycling receptacles required for the development. The initiative selected is Increased servicing (collections).

Increased servicing has been selected as the most efficient option to allow reductions in the bin requirements for the development. Because it is a collection using a rear-load vehicle, the commercial contractors are able to provide more regular servicing to the development. Coupled with the use of 660 or 1100 litre bins, this strategy will significantly reduce the requirement for the number of bins.

3.1 Increased Servicing

The following table shows the required number of 660 litre bins at a collection frequency of one per week against the number of bins required with increased servicing. Final bin numbers (and sizes) will depend on the collection frequency adopted.

Table 5: Number of Bins - Increased Servicing

Weekly Generation (m3)	Waste	Recycling
No. of 660 litre waste receptacles/week	6.33	1.85
2 collections per week	3.16	0.92
3 collections per week	2.11	0.62
4 collections per week	1.58	0.46
5 collections per week	0.84	0.24
6 collections per week	0.70	0.20
7 collections per week	0.60	0.17

From the preceding table, with weekly collections of the facility's waste and recycling, seven waste and two recycling 660s would be required to manage the weekly total waste stream. With two collections of waste and recycling per week, the number of 660s required would be four waste bins and one recycling bin.

If 1100s were used, with bi-weekly collections of the facility's waste and recycling, two waste and one recycling bin would be required to manage the weekly total waste stream.

3.2 Summation

It is proposed that the following initiatives will be implemented for the waste servicing of the MSWA facility at 33 Guttman Approach, Shenton Park:

- Use of 660 or 1100 litre receptacles; and
- A minimum of twice-weekly collections of both the waste and recycling bins.

The above arrangements will result in a requirement for sufficient space in the facility bin store for a maximum of five 660 litre bins or three 1100 litre bins. It is noted that these numbers are an example only as, based on the performance of the facility and its waste management and minimisation strategies, these numbers will be adjusted to suit the generation activity.

Review

All of the above-mentioned waste servicing arrangements will be reviewed as a matter of course on an ongoing basis to ensure that the most efficient arrangements to manage the waste and recycling material generated by all aspects of the facility are in place and are maintained.

4 BIN STORAGE AND MANAGEMENT

4.1 Bin Compound/Store

There is one bin store, where all bin-filling activities will occur, located immediately at the rear of the carpark. This is where bins will be filled by facility staff and washed as required.

4.2 Hard/Bulky Waste Temporary Storage

Area is available in the bin store for the storage (prior to disposal or collection) of hard waste and large bulky items too large to be placed in the 660 or 1100 litre receptacles (see Figure 4).

4.3 Bin Store Specifications (Construction/Amenity)

The bin store has been designed to meet or exceed the following specifications:

- Provided with a tap and connected to an adequate supply of water. The tap is to be located in a position so that it will not be susceptible to being damaged by the bins being removed for collection;
- Constructed of brick, concrete, corrugated compressed fibre cement sheet or other material of suitable thickness;
- Having walls not less than 1.8 metres in height and having an access point of not less than 1 metre in width and fitted with a self-closing gate;
- Access point for collection is to be of suitable size for the size of the bins used and the collection method proposed;
- Containing a smooth and impervious floor of not less than 75 millimetres in thickness, and provided with an adequate liquid refuse disposal system;
- Where located within a building, the bin compound is to be ventilated in accordance with Australian Standard 1668.2: *The Use of Ventilation and Air Conditioning in Buildings* (as amended);
- Conveniently located for disposal of waste, organics and recyclables;
- Not accessible by the public;
- To have no gradients or steps from the bin store to the bin service area; and
- Standard signage explaining waste management and what materials are suitable for recycling is to be posted/erected in all cleaners' rooms and the bin store.

4.4 Bin Management

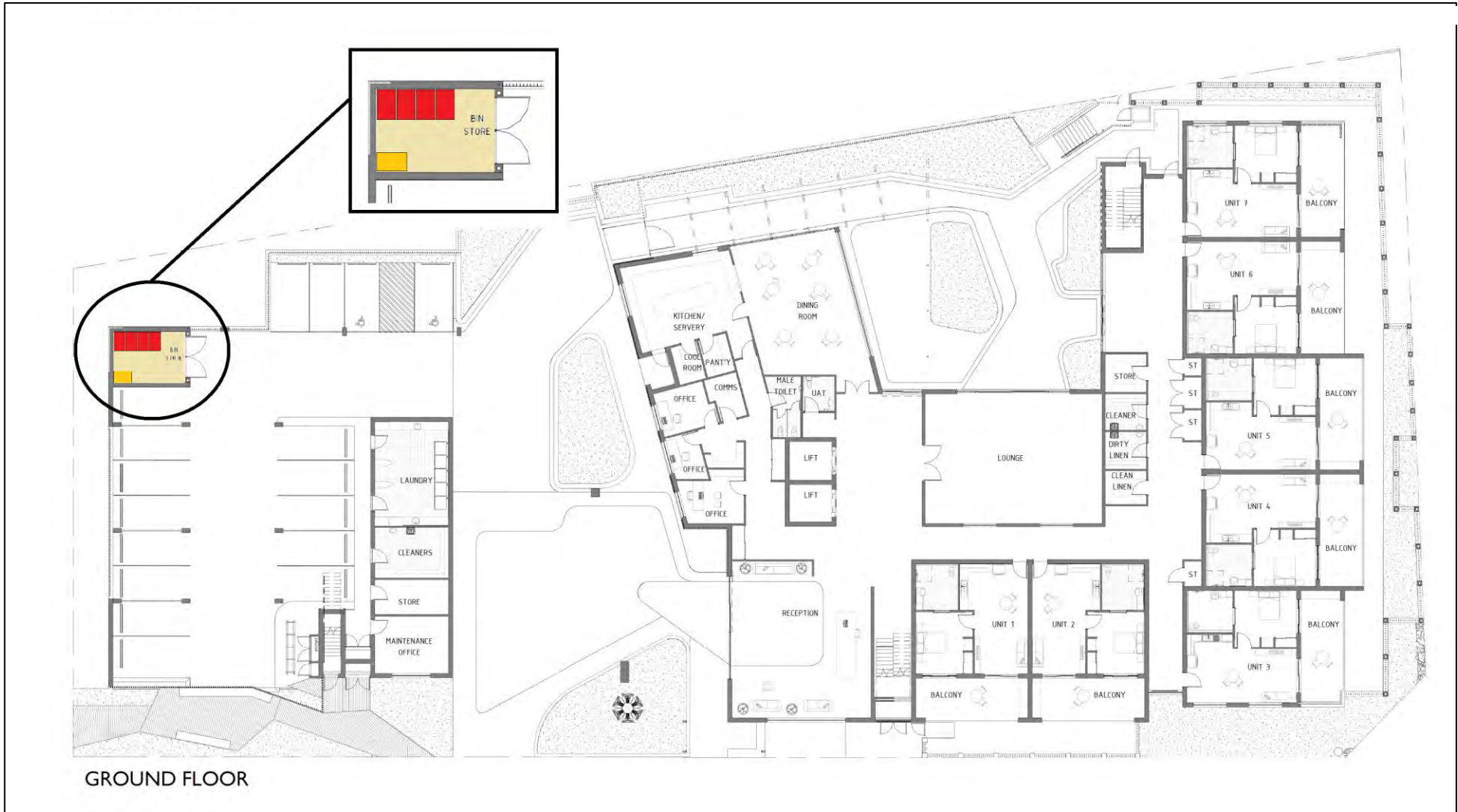
The management of the bins throughout the complex will be coordinated by the facility management. Cleaners or waste management personnel will be responsible for the daily collection of waste and recycling material from throughout the facility and taking bagged waste and collected recyclables to the bins. These staff will be made aware of the expectations regarding use of the bins and the stores.

Designated waste management personnel will be responsible for servicing and cleaning the bins and the bin store and for ensuring that a part empty or empty bin is accessible in the bin store to all staff at all times.

It should be noted that consideration has been given to the handling of waste and recycling material collected by staff. It is likely that cleaners will use smaller (e.g. 120 litre) bins or similarly sized receptacles for the collection of bagged waste from throughout the complex, and those bins would then be transferred to the main bin store. Bagged waste can then be pulled from the small bins and deposited into the larger 660s or 1100s.

Where the internal collection necessitates use of larger bins (i.e. 240 litre), an assessment of the usual weight of those bins will be made and a bin lifter may be utilised in the main bin store or two staff members would be tasked to empty those bins.

Figure 4: Bin Store Location – Ground Level



4.5 Bin Collection

Collection (emptying) of bins will occur from the Bin Store area. The collection vehicle personnel will access the bins from the store, wheel the bins to the vehicle and then return the bins to the store.

Waste management staff will ensure that the collection vehicle operators have access to the store and that the bins are placed within the store such that they can be emptied without obstruction by the contractor. Upon request, facility staff could be made available if necessary to assist with presentation of the bins.

4.6 Traffic/Pedestrian Management

Because of the location of the bin store, no public traffic has access to the vicinity of the collection area and, aside from movement of the collection vehicles traversing to the rear of the carpark, traffic will not be impacted by the collection process.

4.7 Other Waste/Items

Bulky and hard waste will be stored temporarily in the bin store area for collection. Collection vehicles will be able to access the carpark to collect these materials or items as required. Should larger capacity bulk bins be required for occasional works (e.g. maintenance, building etc), various internal locations are available for the temporary placement of these bins.

5 WASTE MANAGEMENT RESPONSIBILITIES

5.1 Building Management

The facility management team will have overall responsibility for ensuring that the waste management activities are appropriately conducted and that all staff meet their waste management responsibilities. They will also be responsible for training staff in all facets of the cleaning responsibilities.

The facility operator aspires to continual improvement of waste minimisation throughout the complex, to lessen the volume of material being sent to landfill and increase the amount of material recycled or diverted from landfill.

5.2 Cleaning Staff/Waste Management Personnel

At a minimum, the cleaners/waste personnel will undertake the following bin servicing and waste management functions;

- Collect waste and recycling from throughout the facility;
- Regular inspection (and rotation if required) of bins in the bin store to ensure that part empty or empty bins are accessible to staff at all times;
- Regular cleaning of bins and bin stores and ensuring that one bin is filled before the next one is used;
- Ensuring the collection vehicle operators have access to the store; and
- Assistance with bin movement for operators (if required).

In the future, with the initial assistance of waste management experts, training of staff to implement a Waste Minimisation Plan for the facility may be explored. The plans could provide recommendations on and include specific actions for;

- the additional segregation of specific recycling materials (e.g. cardboard, aluminium, e-Waste etc) from the comingled stream; and
- implementation of waste reduction initiatives such as office recycling, worm farms and composting etc.

5.3 Staff

All staff would be instructed on the various waste requirements. This would include direction on the correct use of the bin facilities and expectations of the facility management with regards to any recycling or waste diversion.

6 REFERENCES

1.	City of Nedlands	LPP Waste Management (Website 2022)
2.	City of Sydney	<i>City of Sydney's Guidelines for Waste Management in New Developments 2021</i>