Walker Corporation Adelaide Festival Plaza Tower 2

Waste Management Plan

Document verification

Date	Version	Title	Prepared by	Approved by
26/02/25	V1 DRAFT	Waste Management Plans: Walker Corporation - Tower 2 & Tower 1 Update	J. Webb K. Le Gallou (review)	J. Webb
13/03/25	V2 FINAL	Waste Management Plans: Walker Corporation - Tower 2 & Tower 1 Update	J. Webb	J. Webb

Document summary

Rawtec prepared this waste management plan (WMP) to support the planning application of the development. We consulted the client, project manager, project architect and traffic consultant and considered all relevant policy requirements (see Appendix 1).

This WMP includes a high-level proposal for a waste management system, with a preliminary design to show how waste can be managed at the site. If land uses and waste management arrangements for the development change during detailed design, this WMP will need to be updated.

The WMP is aligned with the *South Australian Better Practice Guide – Waste Management in Residential or Mixed Use Developments (Green Industries SA, 2014).*

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1. Development summary

Project	Adelaide Festival Plaza Tower 2 & Tower 1 update
Client	Walker Corporation
Architect	Johnson Pilton Walker (JPW)
Traffic consultant	WGA

1.1. Land use and occupancy

Table 1 and Table 2 list the tenancy/land uses that will generate waste and recycling at the development, based on the latest architectural plans.

Table 1: Tenancy/land use and occupancy overview (Tower 1)

Level	Tenancy/land use	Waste resource generation rate category	Size (m^2)
1-26	Offices	*Offices/consulting (based on Tower 1 analysis)**	48,060
Ground	Restaurant	*Restaurant (based on Tower 1 analysis)**	310
Ground	Retail	*Retail (Less than 100m^2)*	104

Table 2: Tenancy/land use and occupancy overview (Tower 2)

Level	Tenancy/land use	Waste resource generation rate category	Size (m^2)**
2-16, 19-35	Offices	*Offices/consulting (based on Tower 1 analysis)**	50,000
36	Roof Top Bar	*Restaurant (based on Tower 1 analysis)**	834
Ground-1	Retail	*Retail (Less than 100m^2)*	940

**Based on analysis of analysis of current and waste generation waste/recycling generated by Tower 1 (see Section 'Tower 1 waste generation and metrics*

**Approx.*

1.2. Waste management considerations

The client and project architect identified design choices and other elements that could affect waste management at the site (Table 3). We have included these in the design of the waste management system.

Table 3: Development waste management considerations

Consideration	Description
Updated waste resource generation metrics	Actual data has been analysed from Tower 1 (70% occupation) and used to develop generation metrics and estimated volumes for a fully occupied Tower 1 and Tower 2.
Current waste and recycling generation & services	Tower 2 will have the same services as Tower 1. Note: • Comingled/mixed recycling services are not currently provided for/available in Tower 1. These services may be considered when available in the future. • Consideration for volume reduction activities (e.g. compaction/baling) may be considered in the future, if land uses or waste/recycling volumes change.
Bin manager	A bin manager will have the following responsibilities: • Coordinating waste and recycling collections • Collecting and analysing data on waste and recycling disposal and collection (i.e. weights, costs). • Coordinating equitable invoicing (e.g. distributing collection costs based on waste generation).

1.3. Current/recommended services

To manage waste & recycling effectively, the development needs to include the services listed in Table 4.

*Table 4: Recommended waste management services**

Required/recommended waste and recycling collection services							
	Land use	**Commercial**	**Commercial**	**Commercial**	**Commercial**	**Commercial**	**Commercial**
	Development land uses	**Tower 1 - Offices**	**Tower 1 Restaurant**	**Tower 1 Retail**	**Tower 2 Offices**	**Tower 2 Restaurant**	**Tower 2 Retail**
Routine collection (rear lift)	Organics recycling	**X**	**X**	**X**	**X**	**X**	**X**
	Mixed paper/cardboard recycling	**X**	**X**	**X**	**X**	**X**	**X**
	Paper recycling	**X**	NS	NS	**X**	NS	NS
	CDS recycling	**X**	**X**	NS	**X**	**X**	NS
	Dry waste	**X**	**X**	**X**	**X**	**X**	**X**
	Confidential paper recycling	**X**	NS	NS	**X**	NS	NS
On-call or external drop-off	Hard waste	**X**	**X**	**X**	**X**	**X**	**X**
	E-waste	**X**	**X**	**X**	**X**	**X**	**X**
	CFL/Lighting	**X**	**X**	**X**	**X**	**X**	**X**
	Printer Cartridges	**X**	**X**	**X**	**X**	**X**	**X**
	Batteries	**X**	**X**	**X**	**X**	**X**	**X**

X = Required/Desired

NS = Not serviced as separate service not required

**Note: These are based on the current services provided to Tower 1.*

2. Waste management analysis

2.1. Waste and recycling volumes

The development will generate about 300,500 litres of waste and recycling per week (Table 5).[1] This is based on:

- Tower 2 will use the same services as Tower 1, including a dry waste service instead of a general waste service.
- Future generation calculated on current occupancy and waste/recycling generation (Table 6).
- An assumption for paper recycling and confidential paper recycling generation (e.g. stored in print rooms) based on *South Australian Better Practice Guide* metrics.

Table 5: Estimated volume of waste and recycling generated at the development

Estimated waste generation volumes (litres per week)									
Land use type	**Tower 1**				**Tower 2**				
Development land use	**Tower 1 - Offices**	**Tower 1 Restaurant**	**Tower 1 Retail**	**Tower 1 Total**	**Tower 2 Offices**	**Tower 2 Restaurant**	**Tower 2 Retail**	**Tower 2 Total**	**Total**
WRGR classification	*Festival Tower 1 Offices*	*Festival Tower 1 Restaurant*	*Retail - Less than 100m2*		*Festival Tower 1 Offices*	*Festival Tower 1 Restaurant*	*Retail - Less than 100m2*		
Stream Organics recycling	14,300	500	30	**14,830**	14,900	1,300	200	**16,400**	**31,200**
Mixed paper/cardboard recycling	20,500	1,500	100	**22,100**	21,400	3,500	1,000	**25,900**	**48,000**
Paper recycling	18,400	NE	NE	**18,400**	19,100	NE	NE	**19,100**	**37,500**
CDS recycling	1,600	NE	NE	**1,600**	1,600	NE	NE	**1,600**	**3,200**
Dry waste	73,300	4,800	700	**78,800**	76,300	11,700	5,000	**93,000**	**171,800**
Confidential paper recycling	4,300	NE	NE	**4,300**	4,500	NE	NE	**4,500**	**8,800**
Total site volume	**132,400**	**6,800**	**800**	**140,000**	**137,800**	**16,500**	**6,200**	**160,500**	**300,500**

*Totals have been rounded and may not equate

NE = Not Estimated as Not Required

Tower 1 waste generation and metrics

Table 6 summarises the estimated current occupancy and waste/recycling generated in Tower 1. These were used to develop the metrics used to estimate total waste generation for a fully occupied Tower 1 and for Tower 2. Note: Data on paper recycling and confidential recycling services volumes typically generated by office tenancies was not provided. An assumption based on the South Australian Better Practice Guide metrics was made (50% of standard generation considering the availability of a paper and cardboard service being available).

Table 6: Estimated waste/recycling generated per m2 per week for land uses in Tower 1

Land use / Stream	Restaurant	Office
	Litres/m2/week	
Dry Waste + Mixed recycling	15.6	1.5
Mixed paper & cardboard	4.7	0.4
Organics + Paper towel	1.7	0.3
CDS mixed recycling	0.001	0.03
Total (litres/m2/week)	**22.0**	**2.3**

[1] Estimates are based on the proposed land-use data provided by the client/architect and metrics from the *South Australian Better Practice Guide – Waste Management for Residential and Mixed Use Developments*. Some metrics have been further developed by Rawtec based on industry knowledge and experience.

2.2. Bin size and collection details

Based on the estimated volumes of waste and recycling in Table 5, the development needs 97 bins and 26 collections per week (Table 7). If using multiple collection providers to service separate tenancies, the number of collections may increase.

Table 7: Estimated bin requirements and collections per week

	Tower 1 Waste Room					Tower 2 Waste Room				
	Total volumes (L per week)*	Bin size (L)	Number of bins required	Collections per week	Collection Vehicle	Total volumes (L per week)*	Bin size (L)	Number of bins required	Collections per week	Collection Vehicle
Organics recycling	14,900	660	5	5	Rear-lift	16,300	660	5	5	Rear-lift
Mixed paper/cardboard recycling	22,100	1,100	5	5	Rear-lift	25,900	1,100	5	5	Rear-lift
Paper recycling	18,400	240	16	5	Rear-lift or Pan-tech/Flat bed	19,100	240	16	5	Rear-lift or Pan-tech/Flat bed
CDS recycling	1,600	1,100	1	2	Rear-lift	1,600	1,100	1	2	Rear-lift
Dry waste	78,800	1,100	12	6	Rear-lift	93,000	1,100	15	6	Rear-lift
Confidential paper recycling	4,300	240	7	3	Rear-lift or Pan-tech/Flat bed	4,500	240	7	3	Rear-lift or Pan-tech/Flat bed
Total	**140,100**		**46**	**26**		**160,400**		**49**	**26**	

*Totals have been rounded and may not equate

The following irregular waste streams will be managed as they occur onsite:

- **Electronic waste and separate waste streams** (such as appliances and batteries, printer cartridges, lighting) will be stored at the development until sufficient quantities are available. Bins may be provided in the waste rooms for certain E-waste types. All items must be source separated and collected by a certified collection contractor or taken to a licensed facility (e.g. recycling depot or participating retailer).
- **Hard waste** (during tenancy fit-out or in residential developments) will be stored at the development and managed via a pull-in/pull-out collection service. This must be arranged by tenants and the building manager, so hard waste can be collected from the loading area at a suitable time.

Other advice

- **Bins and signage** must meet the Australian Standard for Mobile Waste Containers (AS 4123.7–2006 Mobile Waste Containers).
- **E-waste/hard waste collection:** Provide a central and accessible storage point for E-waste and hard waste. If hard waste is collected from individual locations, the building manager and tenant may need to be present for collection and costs may increase.

2.3. Waste storage, collection, and transfer pathway areas

The waste storage areas house the bulk bins. These areas, as well as collection locations and transfer pathways are provided in Figure 1 through to Figure 4. When planning the waste storage area, consider the additional waste management design advice listed in Section 5.

Tower 1 Waste Room

Figure 1 provides an example for how the Tower 1 waste room could be designed.

Note: We recommend exploring the removal of the wall between the current commercial waste room and retail waste room to improve the efficiency of the room layout and ease of access to the retail waste room chutes.

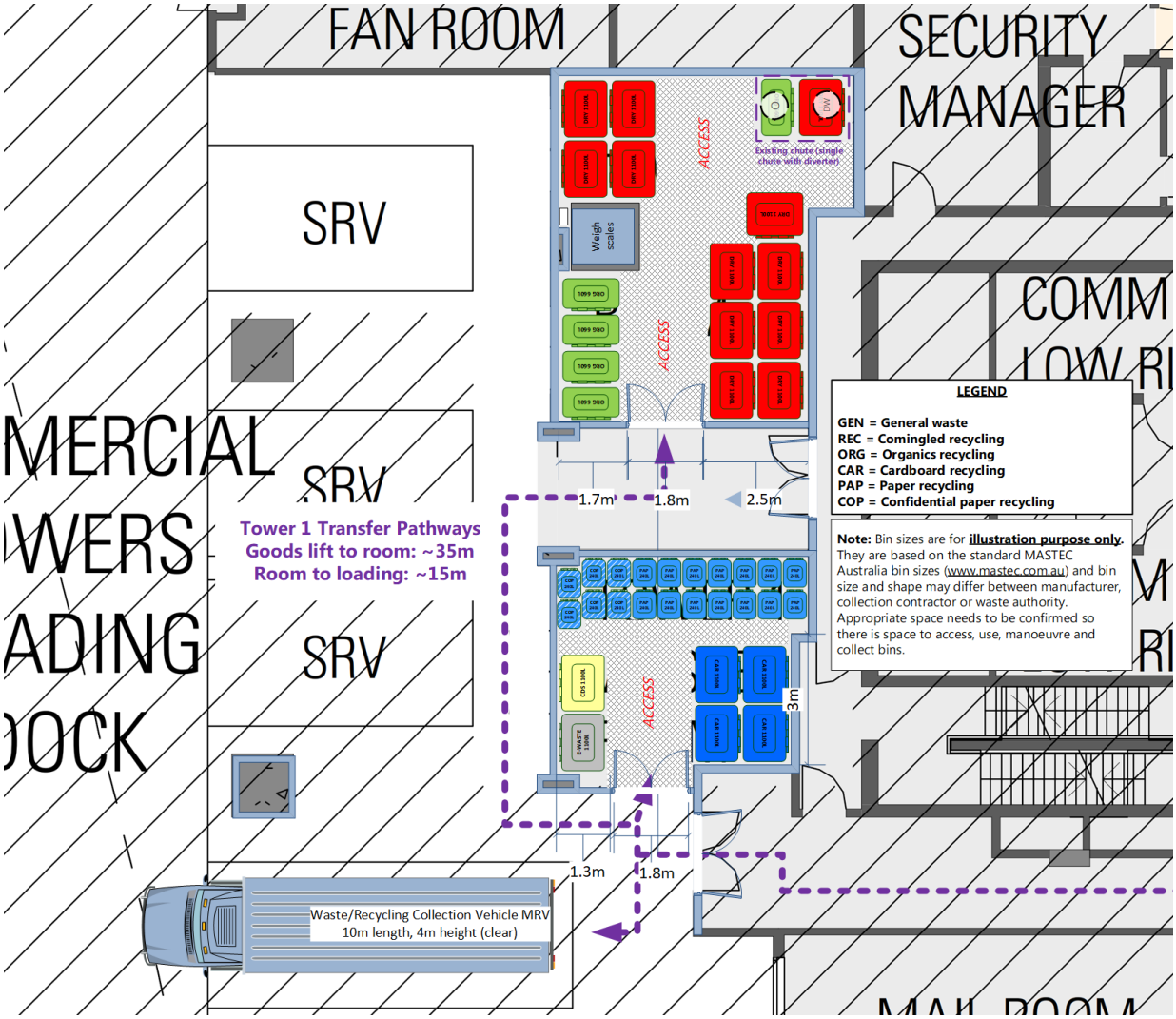

Figure 1: Tower 1 Waste Room

Tower 2 Waste Room

Figure 2 provides an example for how the Tower 2 waste room could be designed.

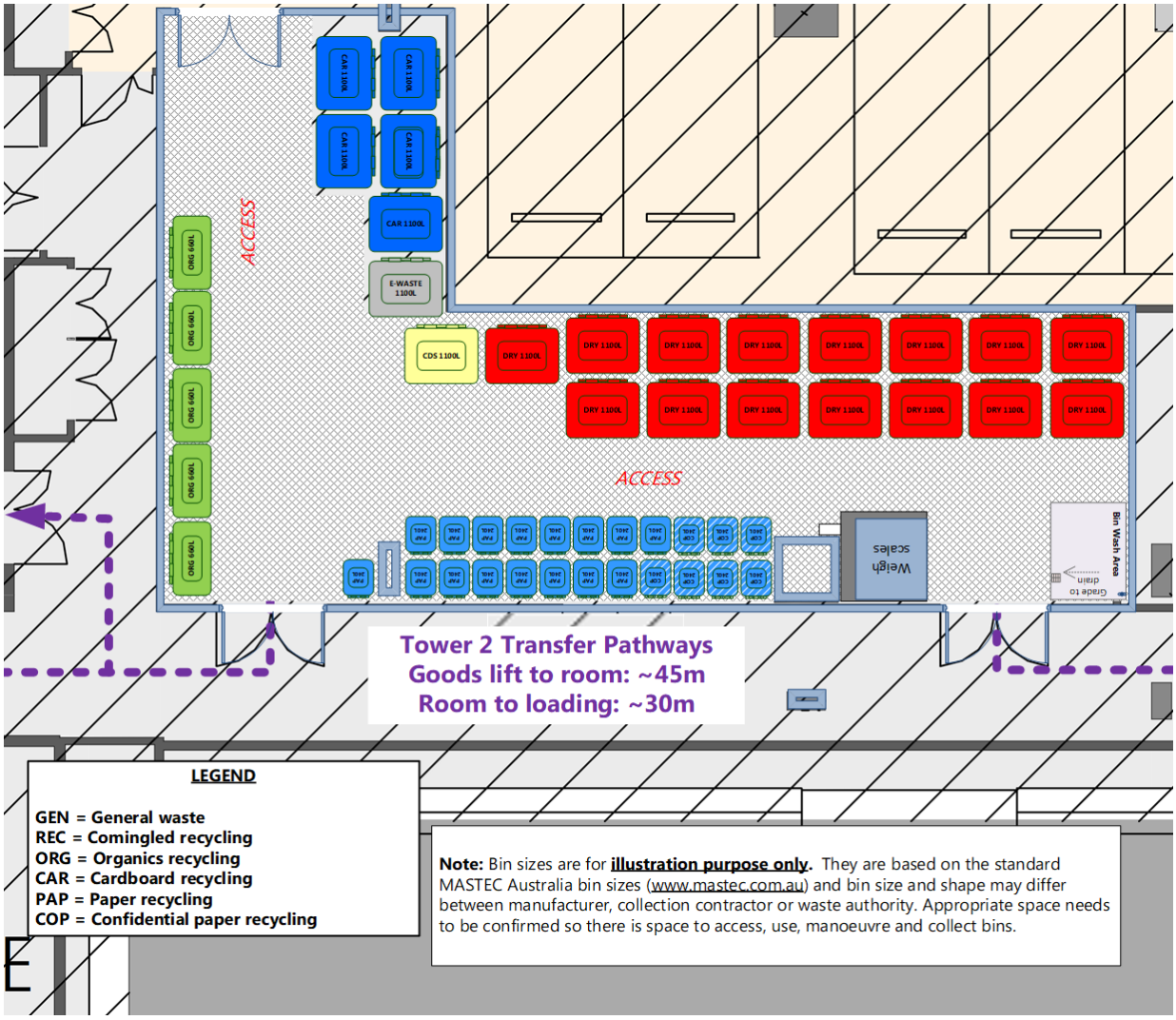

Figure 2: Tower 2 Waste Room

Loading Bay

Figure 3 provides an example where loading could occur.

Note: The developer and collection vehicle operator/waste provider would need to confirm that this is a suitable location for servicing prior to collection occurring.

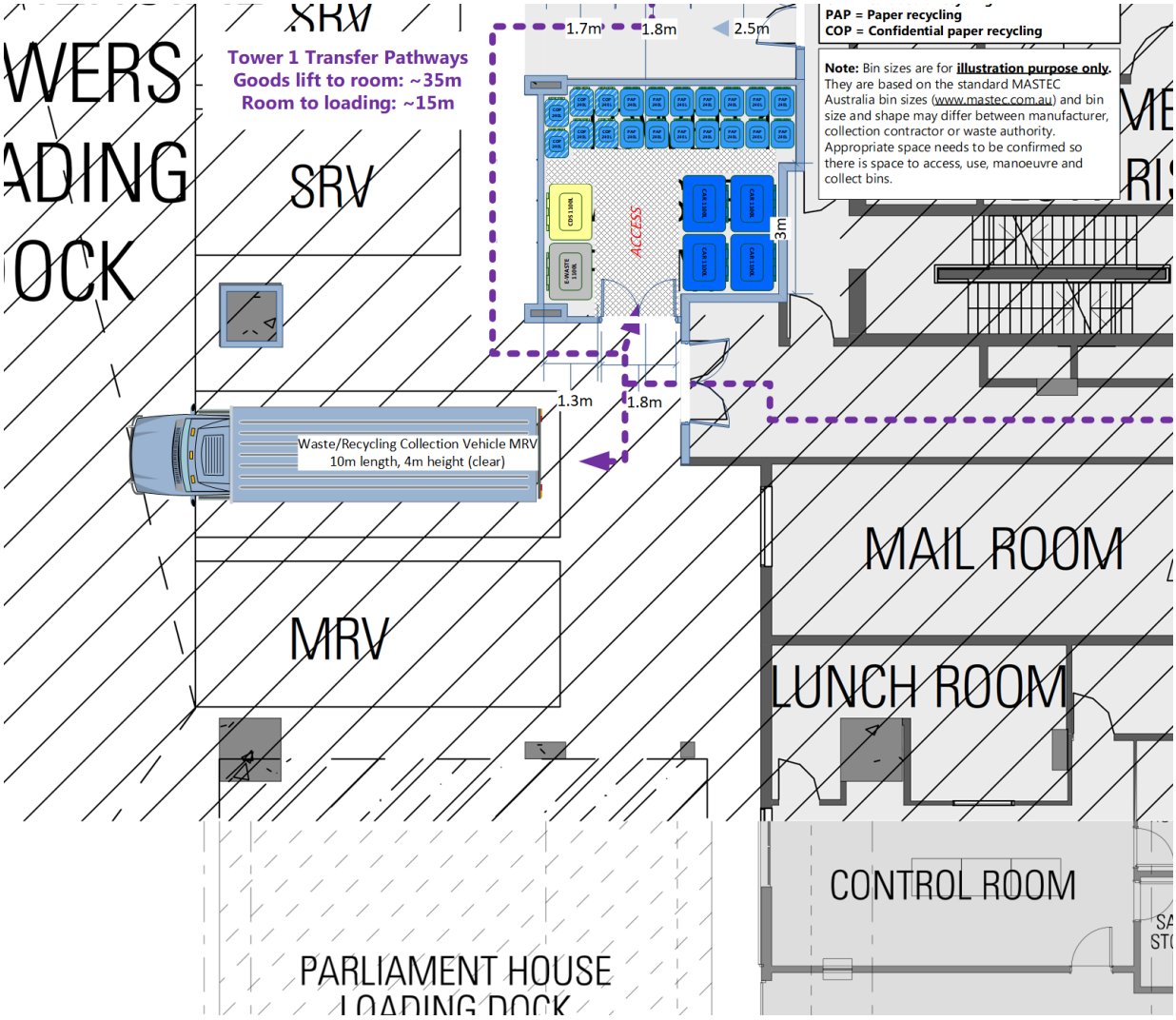

Figure 3: Loading Bay collection vehicle parking option and pathway for collection

Transfer pathways

Figure 4 provides an example proposed transfer pathways.

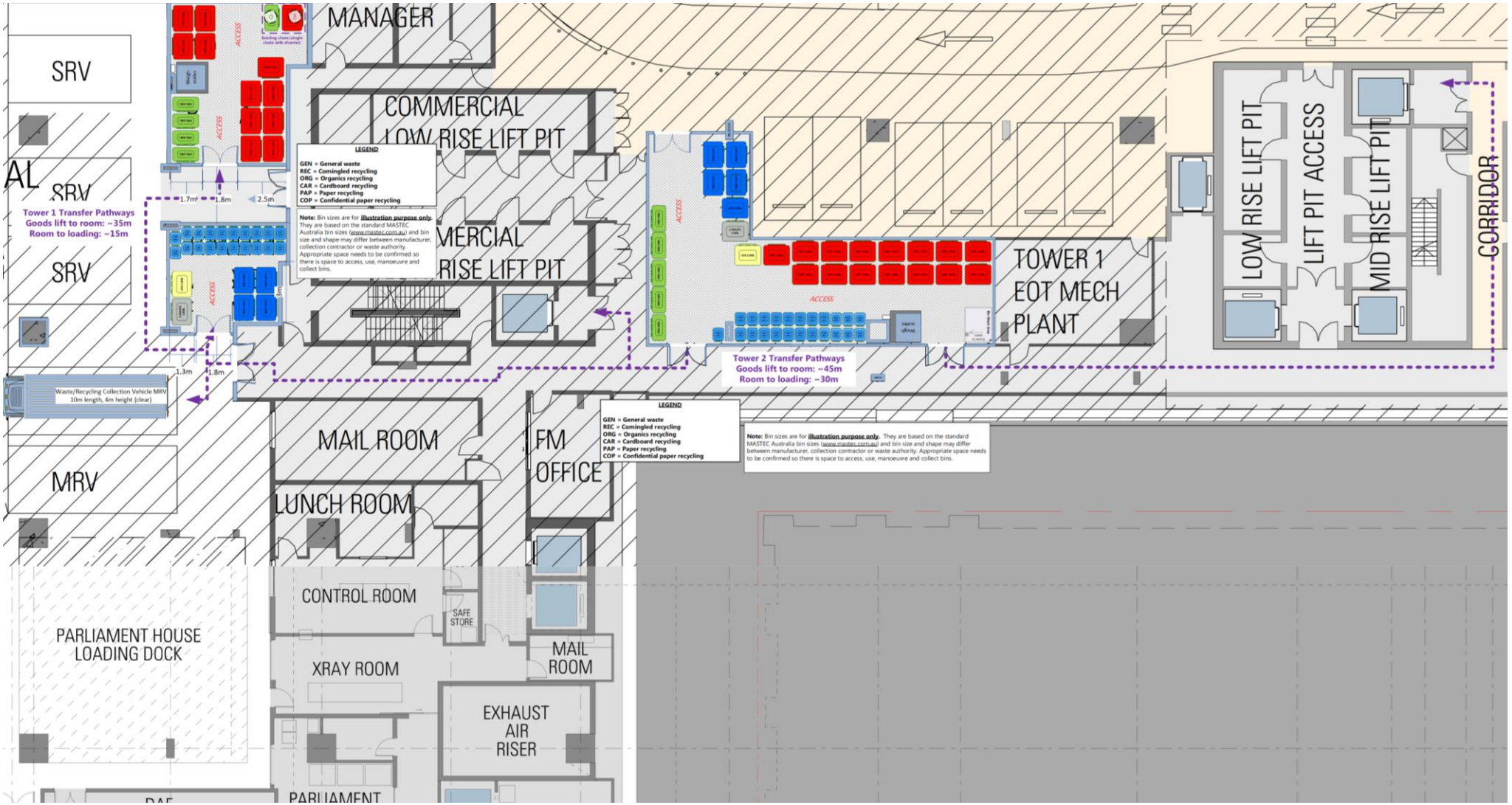

Figure 4: Transfer pathways

3. Waste management system

The waste management system (WMS) explains how to manage the waste and recycling generated at the development (Table 8). It covers each land use and considers the relevant waste management policies (see Appendix 1).

When planning the WMS, consider the waste management design advice in Section 5.

If land uses and waste management arrangements for the development change during detailed design, this WMP will need to be updated.

Table 8: Proposed waste management system for the development

Proposed waste management system		
Waste/recycling services	• Dry waste • Organics recycling • Cardboard recycling	• Paper recycling/confidential paper recycling
WMS step	**WMS notes**	
1. User storage	• Office, retail, and restaurant/café tenancies will source separate and collect waste within their own premises (e.g. central bin station): – Dry waste will be collected using black bin liners – Organics will be collected using compostable bin liners – Cardboard will be collected loose. – Paper recycling and confidential paper recycling will either be collected loose or in the smaller bins within print room or designated location.	
2. Transfer pathways	• Waste/recycling will be transferred by cleaning staff/tenants to the Tower 1 Waste Room or Tower 2 Waste Rooms (depending on the tower the waste was generated in). • Transfer routes must be at least 1.25 metres wide, free of obstructions and steps and with a slope of no more than 1:10.	
3. Aggregation and storage	• All waste/recycling will be weighed using the scales in the waste rooms and recorded against the tenancy. • Waste/recycling will then be aggregated into the relevant waste/recycling bulk bins.	
4. Bin collection	• Collection vehicles will park within a designated loading bay. • The driver will transfer the bins from within the waste rooms, empty the bins, and return the bins to their original location. • The collection vehicle will then exit in a forward direction out of the loading dock.	

4. Collection requirements

4.1. Vehicle movements per week

The development will need about 26 regular collections per week. This is based on the waste and recycling volumes and collection service frequency in Table 7. If the two towers are not collected at the same time or collection providers are used for separate tenancies, the number of collections will increase.

Other advice

- **Collection times:** Schedule waste collection timing and frequency to reduce the impact of noise and traffic on residents, neighbours and the public.
- **Peak periods:** More waste is usually generated during holiday periods like Easter, Christmas and public holidays. Extra collections may be needed at these times.

4.2. Collection vehicle

Table 9 lists approximate truck dimensions to help the traffic consultant's analysis. Please note:

- Vehicle dimensions and operating conditions can differ between waste collection contractors.
- Rawtec does not provide traffic engineering services. The traffic consultant's report details how collection vehicles will service the development safely.
- The client must confirm with the preferred waste collection contractor that it can service the development before collection can begin.

Table 9: Approximate collection vehicle dimensions

Collection vehicle dimensions		
Vehicle type	**Rear lift**	**Pan-tech/Flat bed**
Collection type	Collection of bins up to 1,100 L	At call waste streams
Vehicle dimensions	3.4m minimum to 4m (h) × 2.5m (w) × 8.8m minimum to 11m (l)	Up to 4.5m (h) × 2.5m (w) × 8.8m (l)
Rear loading space required	2 m	-
Operational vehicle height	Up to 4 m	Up to 4.5 m
Vehicle turning circle	18-25 m	18-25 m

5. Other waste management and design advice

Table 10 lists advice on designing developments to encourage good waste management practices, based on the *South Australian Better Practice Guide – Waste Management for Residential and Mixed Use Developments*.

Table 10: Other waste management and design advice

Area	To consider
Bin/chute rooms	• Make bin/chute rooms accessible to mobility impaired persons. • Locating chutes in closed waste rooms on each floor may prevent odours or spillage issues compared to providing access directly from a hallway.
Bin transfer routes	• Transfer routes should be at least 1.4 m wide, free of obstructions and steps, and with a slope of no more than 1:10.
Bin washing	• A bin washing station must: – slope to a drain connected to the sewer – have a tap and a hose with mains supply – be at least 2 m × 2 m – be slip resistant. • Note: – Line marking and bunding are not required. – Bins can be stored on top of the bin wash area. During washing, other bins can be placed outside the room. – The bin wash area can be installed outside the waste room. – The waste contractor may provide this service (either onsite or offsite).
Container deposit scheme (10-cent) containers	• Businesses with large volumes of 10-cent refund drink containers (e.g. restaurants, cafes, hotels) could organise a collection service with a business that shares the revenue from the containers (e.g. Scouts SA).
Education and training	• The building manager should educate and train tenants to use the waste management system correctly. • Consider including better practice waste management requirements in strata or commercial lease agreements.
Health and amenity	• Effective WMS design should: – reduce and stop odour and noise – consider and preserve visual amenity for tenants, neighbours and the public – prevent waste spreading beyond the defined location – specify washable services enabling periodic cleaning – provide adequate ventilation.
Waste storage area	• Secure the storage area to stop people interfering with bins and equipment.

6. Appendix 1: Waste policies

This WMP is based on the following policies, design and operational requirements:

- The South Australian Environment Protection (Waste to Resources) Policy 2010, Government of South Australia, version 1.6.2019:
  - Waste is subject to resource recovery processes, which can include source separation, before disposal to landfill.
- *South Australian Better Practice Guide – Waste Management in Residential or Mixed Use Developments*, Green Industries SA, 2014.
- South Australian Planning and Design Code
  - Table 11 summarises the Performance Outcomes in the code related to waste and recycling.

Table 11: Relevant waste and recycling performance outcomes in the Planning and Design Code

Design	
PO 1.5	The negative visual impact of outdoor storage, waste management, loading and service areas is minimised by integrating them into the building design and screening them from public view (such as fencing, landscaping and built form) taking into account the form of development contemplated in the relevant zone.
PO 19.3	Driveways are located and designed to facilitate safe access and egress while maximising land available for street tree planting, landscaped street frontages, domestic waste collection and on-street parking.
PO 20.1	Provision is made for the adequate and convenient storage of waste bins in a location screened from public view.
PO 26.5	Where waste bins cannot be conveniently collected from the street, provision is made for on-site waste collection, designed to accommodate the safe and convenient access, egress and movement of waste collection vehicles.
PO 30.4	Provision is made for suitable household waste and recyclable material storage facilities conveniently located and screened from public view.
PO 30.6	Provision is made for on-site waste collection where 10 or more bins are to be collected at any one time.
PO 32.1	Areas for activities including loading and unloading, storage of waste refuse bins in commercial and industrial development or wash-down areas used for the cleaning of vehicles, vessels, plant or equipment are: a) designed to contain all wastewater likely to pollute stormwater within a bunded and roofed area to exclude the entry of external surface stormwater run-off b) paved with an impervious material to facilitate wastewater collection c) of sufficient size to prevent 'splash-out' or 'over-spray' of wastewater from the wash-down area d) designed to drain wastewater to either: i) a treatment device such as a sediment trap and coalescing plate oil separator with subsequent disposal to a sewer, private or Community Wastewater Management Scheme; or ii) a holding tank and its subsequent removal off-site on a regular basis.

Design in Urban Areas	
PO 1.5	The negative visual impact of outdoor storage, waste management, loading and service areas is minimised by integrating them into the building design and screening them from public view (such as fencing, landscaping and built form), taking into account the form of development contemplated in the relevant zone.
PO 11.1	Development provides a dedicated area for on-site collection and sorting of recyclable materials and refuse, green organic waste and wash bay facilities for the ongoing maintenance of bins that is adequate in size considering the number and nature of the activities they will serve and the frequency of collection.
PO 11.2	Communal waste storage and collection areas are located, enclosed and designed to be screened from view from the public domain, open space and dwellings.
PO 11.3	Communal waste storage and collection areas are designed to be well ventilated and located away from habitable rooms.
PO 11.4	Communal waste storage and collection areas are designed to allow waste and recycling collection vehicles to enter and leave the site without reversing.
PO 11.5	For mixed use developments, non-residential waste and recycling storage areas and access provide opportunities for on-site management of food waste through composting or other waste recovery as appropriate.
PO 23.3	Driveways and access points are located and designed to facilitate safe access and egress while maximising land available for street tree planting, domestic waste collection, landscaped street frontages and on-street parking.
PO 24.1	Provision is made for the convenient storage of waste bins in a location screened from public view.
PO 35.3	Provision is made for suitable household waste and recyclable material storage facilities which are located away, or screened, from public view.
PO 35.4	Waste and recyclable material storage areas are located away from dwellings. **DTS/DPF 35.4 -** Dedicated waste and recyclable material storage areas are located at least 3m from any habitable room window.
PO 35.5	Where waste bins cannot be conveniently collected from the street, provision is made for on-site waste collection, designed to accommodate the safe and convenient access, egress and movement of waste collection vehicles.
PO 40.4	Provision is made for suitable household waste and recyclable material storage facilities conveniently located away, or screened, from view.
PO 40.6	Provision is made for on-site waste collection where 10 or more bins are to be collected at any one time.
PO 43.1	Areas for activities including loading and unloading, storage of waste refuse bins in commercial and industrial development or wash-down areas used for the cleaning of vehicles, vessels, plant or equipment are: a) designed to contain all wastewater likely to pollute stormwater within a bunded and roofed area to exclude the entry of external surface stormwater run-off b) paved with an impervious material to facilitate wastewater collection

c) of sufficient size to prevent 'splash-out' or 'over-spray' of wastewater from the wash-down area

d) designed to drain wastewater to either:

iii) a treatment device such as a sediment trap and coalescing plate oil separator with subsequent disposal to a sewer, private or Community Wastewater Management Scheme

or

iv) a holding tank and its subsequent removal off-site on a regular basis.

PO 44.1	Development with a primary street comprising a laneway, alley, lane, right of way or similar minor thoroughfare only occurs where: a) existing utility infrastructure and services are capable of accommodating the development b) the primary street can support access by emergency and regular service vehicles (such as waste collection) c) it does not require the provision or upgrading of infrastructure on public land (such as footpaths and stormwater management systems) d) safety of pedestrians or vehicle movement is maintained e) any necessary grade transition is accommodated within the site of the development to support an appropriate development intensity and orderly development of land fronting minor thoroughfares.

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