PROPOSED MIXED USE DEVELOPMENT

17-21 UNIVERSITY AVENUE, CANBERRA

WASTE AND RECYCLING MANAGEMENT PLAN

SALT³

PROPOSED MIXED USE DEVELOPMENT, 17-21 UNIVERSITY AVENUE, CANBERRA
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D01	Jasreena Kaur	Project Environmental Scientist	14 November 2022	Tom Bloomfield	Associate Director, Waste & Environment	14 November 2022
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F02	Jasreena Kaur	Senior Environmental Consultant	24 October 2023	Tom Bloomfield	Associate Director, Waste & Environment	24 October 2023

MELBOURNE Level 3, 51 Queen Street, Melbourne VIC 3000
+61 3 9020 4225

SYDNEY Level 6, 201 Kent St Sydney NSW 2000
+61 2 9068 7995

HOBART Level 4, 116 Bathurst Street, Hobart TAS 7000
+61 400 535 634

CANBERRA Level 3, 33-35 Ainslie Pl Canberra ACT 2601
+61 2 9068 7995

ADELAIDE Level 21, 25 Grenfell St Adelaide SA 5000
+61 8 8484 2331

www.salt3.com.au

EXECUTIVE SUMMARY

SALT has been engaged by Bulum Group to prepare a Waste and Recycling Management Plan (WRMP) for a proposed mixed use development located at 17-21 University Avenue, Canberra.

SALT understands that the proposal involves the development of two buildings. Building A is proposed to provide residential areas consisting of 78 two-bedroom and 13 three-bedroom apartments as well as 357m^2 of commercial spaces. Building B is proposed to provide residential areas consisting of 9 studio units, 30 one-bedroom, 17 two-bedroom and 8 three-bedroom apartments as well as 459m^2 of commercial spaces. The proposal also includes total of 102m^2 kiosk spaces.

Residential waste would be stored on-site in the two residential bin rooms located at basement level 1.

Residential waste would be collected by private contractor, with the following bins from each building:

Building A:

- 4 x 1,100L garbage bins collected twice per week;
- 8 x 1,100L commingled recycling bins collected once per week; and
- 7 x 240L organics bins collected once per week.

Building B:

- 3 x 1,100L garbage bins collected twice per week;
- 5 x 1,100L commingled recycling bins collected once per week; and
- 5 x 240L organics bins collected once per week.

Hard waste will be collected as required.

Commercial waste would be stored on-site in the commercial bin room located at basement level 1. Commercial waste will be stored separately from residential waste.

Commercial waste would be collected by private contractor, with:

- 2 x 1,100L garbage bins collected three times per week;
- 2 x 1,100L commingled recycling bins collected three times per week;
- 7 x 240L organics bins collected three times per week; and
- 2 x 1,100L container deposit scheme bins collected as required.

Waste vehicles would prop safely within the proposed loading zone along Darwin Place. Vehicle operators would ferry waste bins from the bin holding area and designated bin presentation area at ground level to the collection vehicle and return upon emptying.

In the opinion of SALT, the enclosed Waste Management Plan would provide efficient waste management for the proposed development. This report must be read in detail prior to implementation of the waste management strategy.

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1 INTRODUCTION

SALT has been requested by Bulum Group to prepare a Waste Management Plan for a proposed mixed-use commercial and residential development located at 17-21 University Avenue, Canberra.

This Waste and Recycling Management Plan (WRMP) has been prepared based on industry best practice and the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019*. In the circumstance that the development plans are amended or new legal requirements are introduced, a revision of the enclosed WRMP may be required by the Responsible Authority. The developer would be responsible for engaging with a waste consultant or engineer to prepare the updated report accordingly.

Based on the team's preliminary discussions with ACT NoWaste, it was confirmed that the site's collection areas would not be accessible by the Territory's collection vehicle hence private collections have been proposed for residential waste collections as well as commercial collections.

Generation rates have been adopted based on residential and commercial waste generation rates enclosed in the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019*.

2 INCLUDED IN THIS REPORT

Enclosed is the Waste Management Plan for the proposed development at 17-21 University Avenue, Canberra. Included are details regarding:

- Land use;
- Waste generation;
- Waste systems;
- Bin quantity, size and colour;
- Collection frequency;
- Bin storage area;
- Signage;
- Waste collection;
- Responsibilities;
- Ventilation, washing and vermin-prevention;
- Noise reduction;
- DDA compliance;
- Supplier contact information; and
- Scaled waste management drawings.

3 LAND USE

Planning application number: to be allocated

Land Zone: Core Zone CZ1

Land use type: Mixed-use (commercial and residential)

Number of levels: 13 (with 5 additional basement levels)

Residential Space:

Building A – Total of 91 dwellings consisting of:

- 78 two-bedroom apartments; and
- 13 three-bedroom apartments

Building B – Total of 64 dwellings consisting of:

- 9 studio units
- 30 one-bedroom apartments;
- 17 two-bedroom apartments; and
- 8 three-bedroom apartments.

Commercial Spaces including Kiosks:

- 238m^2 takeaway food shop – A store 1, 2 and 4;

- 119m^2 shops (non-food) – A store 3;
- 184m^2 hairdresser – B store 1;
- 120m^2 shops (non-food) – B store 2;
- 155m^2 café – B store 3;
- 23m^2 barber;
- 24m^2 florist;
- 27m^2 gallery; and
- 28m^2 espresso bar.

Note: The type of commercial uses noted above have been assigned based on the expected type of uses of the spaces provided.

4 DEMOLITION AND CONSTRUCTION WASTE RESPONSIBILITIES

This Waste Management Plan must be adhered to during the demolition, construction and ongoing management of the proposed development.

During site inductions for the construction, demolition and excavation phases, all contractors must be made aware of the waste management obligations provided in this plan.

It should be noted that a construction site management plan will be prepared and include site access details and storage areas. The indicative construction and demolition waste storage area has been shown in Figure 1 below which will be confirmed in construction site management plan.

It is the responsibility of the Site Supervisor to ensure waste disposal is adequately tracked in a Waste Data File. Any associated receipt/invoices, waste classification and site validation certificate should be logged within this file.

All entries in the Waste Data File must include the following and must be recorded from the commencement to the completion of the works;

- Time and date;
- Description and quantity of waste;
- Waste facility used; and
- Vehicle registrations and company name.

The Waste Data File must be retained for 12 months from the 'certificate of occupancy' or 'certificate for building work involving demolition', by the developer and contractor.

The developer must ensure lawful and safe handling and removal of hazardous materials, such as asbestos, lead in paint or dust in roof cavities. The developer may wish to contact WorkSafe ACT at 132 281, for the correct procedures.

Any business performing transfer of waste and recyclable materials, must be registered as a waste transporter under the Waste Management and Resource Recovery Act 2016.

5 DEMOLITION WASTE MANAGEMENT PLAN

5.1 ASBESTOS AND OTHER HAZARDOUS WASTE

It is noted that the demolition works may involve asbestos or hazardous waste removal. Asbestos will be removed and disposed of by a licensed asbestos removalist in accordance with the relevant guidelines.

The developer must comply with all regulations concerning the safe handling, treatment and transport of asbestos contaminated material and of hazardous material (i.e. requirements of Work Cover).

Any disposal of hazardous waste must be recorded in the Waste Data File or the EPA online trackable waste system.

A nearby facility that accepts asbestos waste is the Mugga Lane Resource Management Centre. Any disposal of asbestos at this centre would need to be conducted by appointment, by contacting Remondis on 02 6270 7700.

5.2 DEMOLITION WASTE GENERATION

Based on SALT's review of ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019*, it is understood that there are currently no construction and demolition generation rates (per demolition area) provided by the Territory.

Therefore, demolition waste generation rates have been adopted from *The Hills Shire Council Development Control Plan* Appendix A (2012)

Based on a desktop assessment of the current site, it is noted that there is an existing multi-level commercial development located at 17-21 University Avenue, Canberra.. The demolition waste generation rates for a block of flats have been adopted as these are found to be the most suitable rates for the existing site.

These generation rates are shown in Table 1.

Table 1 Waste Generation Rates for Demolition Materials

Building Material	Waste Quantity (tonnes per 1000m^2)
Sandstone	N/A
Concrete	813
Bricks	655
Timber / Gyprock	22
Steel	9
Roof tiles	33
Others	26

The estimated demolition waste volumes for each material have been calculated based on the total demolition area of 1,441.62m^2. The estimated volumes and management strategies for demolition waste are presented in in Table 2 below.

Based on the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019*, a minimum of 90% of all demolition and excavation waste generated from must be either reused or recycled, or both.

Based on the estimated demolition waste generation quantities, the site will need to divert 2,021 tonnes out of the total 2,246 tonnes generated. This may need to be revised by the Site Supervisor during the demolition works as other waste streams (i.e. green waste and general waste) would need to be accounted for as well.

Table 2 Estimated Demolition Waste Generation Volumes and Management Options

Type of Waste Generated	Most to Least Favorable			Specify method of onsite reuse, contractor and recycling outlet and /or waste depot to be used
	Reuse Estimate Volume Weight (t)	Recycle Estimate Volume Weight (t)	Disposal Estimate Volume Weight (t)	
Sandstone*				Demolish using excavator, crushed on site and delivered to an off-site recycler.
Concrete*	117.2t	1,054.8t		Demolish using excavator. crushed on site and use as crushed fill, levelling materials or drainage layers. Deliver any remaining material to an off-site recycler.
Bricks*	94.4t	849.8t		Clean and demolish using excavator. crushed on site and use as crushed fill, levelling materials or drainage layers.

				Deliver any remaining material to an off-site recycler.
Timber / Gyprock		28.5t	3.2t	Reuse for formwork, bridging, propping, and blocking; or chip for use in landscaping Delivered to the off-site recycler listed below.
Plasterboard	TBA	TBA	TBA	Crush and use in compost or as a soil conditioner
Steel		11.7t	1.3t	Clean metal (i.e. without presence of other materials) will be delivered to the off-site recycler listed below. Any contaminated metal should be separated to be landfilled.
Roof tiles*		42.8t	4.8t	Crushed for landscape or drainage use. Deliver any remaining material to the off-site recycler listed below.
Other		33.7t	3.8t	Delivered to the off-site recycler listed below.
Glass & Aluminium Windows	TBA	TBA	TBA	Reused as second-hand building materials. Aluminium would be removed manually by hand. Any remaining material will be delivered to the off-site recycler listed below.
Floor Coverings	TBA	TBA	TBA	Depending on age and condition, materials would be removed and delivered to the off-site recycler listed below. Damaged fittings that cannot be recycled are to be delivered to the nearest landfill as listed below.
Fittings & Fixtures	TBA	TBA	TBA	Depending on age and condition, materials would be removed and delivered to the off-site recycler listed below. Damaged fittings that cannot be recycled are to be delivered to the nearest landfill as listed below.
Green Waste	TBA	TBA	TBA	Separated and some chipped for landscaping. Delivered to off-site recycler listed below.
General Waste	TBA	TBA	TBA	It is anticipated that garbage will be generated on the subject site during the demolition phase. Any garbage generated shall be sorted and stored onsite in general waste skips or bins, as deemed necessary.
Hazardous / special waste	Should hazardous materials be present within the current developments at the subject site, it must be disposed of in accordance with the appropriate guideline. Asbestos is currently accepted at the Mugga Lane Resource Management Centre by appointment via their contact number, 02 6270 7700.			

*Excavated material is to be reused on-site as fill or stockpiled to use as topsoil for landscaping on-site, subject to a Virgin Excavated Natural Material (VENM) assessment. Any unused clean concrete (without the presence of metal or other materials),

clay bricks, asphalt (ripped and profiled) can be recycled at to Canberra Concrete Recyclers, Gate 384 Pialligo Avenue, Pialligo, Canberra, ACT, 02 6249 7427.

5.3 DEMOLITION WASTE STORAGE AND COLLECTION

Demolition material generated during the development of the site will be recycled where possible. Recyclable material will be sorted and stored onsite in separate skips.

On-site training and inductions would be conducted to ensure staff are informed about the implemented waste management procedures.

All materials would be delivered to the appropriate landfill and resource recovery centres as listed below.

The principal off-site recyclers that can be used for this project are:

- Canberra Concrete Recyclers, Gate 384 Pialligo Avenue, Pialligo, Canberra, ACT, 02 6249 7427
- Tiger Waste, Lithgow Street, Fyshwick, ACT 2609, 02 6253 9844
- ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916

The principal licensed landfill that can be used for this project is:

- ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916

Demolition waste will be sorted and stored on-site in skips.

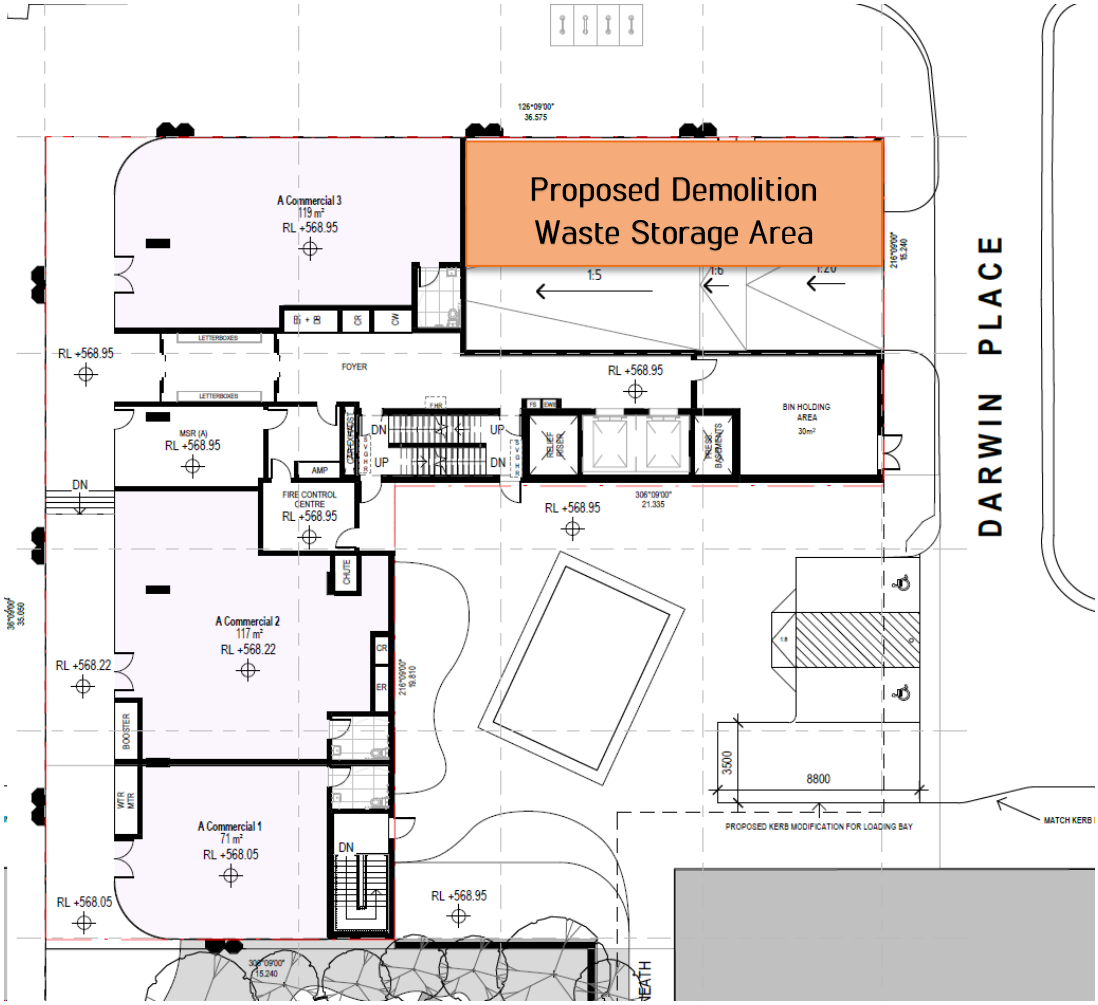
Please note that the nominated facilities below are suggested as suitably located, licensed facilities capable of accepting the relevant waste materials. Alternative facilities may be utilised if preferred, however must be licensed to receive the generated waste materials. Please also note that the capacities of the nominated facilities in accepting and recycling the specified materials may differ upon the time of construction hence it is recommended that they are contacted prior to transfers of waste to the site.

Waste skips should be provided for the following:

- 1 skip bin for excavated soil (that is not reused on-site) to be delivered to Tiger Waste, Lithgow Street, Fyshwick, ACT 2609, 02 6253 9844;
- 1 or more general waste skips (Masonry products which include plasterboard, treated timber, residual waste and dust) to be delivered to ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916;
- 1 recycling skip for clean metal and aluminium to be delivered to ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916;
- 1 recycling skip for glass to be delivered to a licensed recycling facility;
- 1 recycling skip per material type, for clean tiles, fittings and fixtures and floor coverings subject to approval by the recycler to be delivered to Canberra Concrete Recyclers, Gate 384 Pialligo Avenue, Pialligo, Canberra, ACT, 02 6249 7427;
- 1 organics waste skip for any VENM that is not reused on site and garden vegetation to be delivered to ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916;

Figure 1 shows the proposed storage area for demolition waste. Demolition waste shall not be stored along footpaths, public reserves and street gutters or in areas that would lead to contamination of stormwater and waterways.

Figure 1 Proposed Demolition Waste Storage Area



6 CONSTRUCTION WASTE MANAGEMENT PLAN

6.1 CONSTRUCTION WASTE GENERATION

Due to the lack of rates in the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019,* construction waste generation rates have also been adopted from *The Hills Shire Council Development Control Plan* Appendix A (2012)

The construction waste generation rates for blocks of flats (per 1000m^2) have been adopted as these are found to be the most suitable rates for the proposed use of the subject site. These generation rates are shown in Table 3.

Table 3 Estimate Waste Generation Rates for Construction Materials

Building Material	Waste Quantity (tonnes per 1000m^2)
Timber	0.70
Concrete	6.70
Bricks	3.20
Gyprock	1.30
Sand/Soil	28.70
Metal	1.30
Other	0.60

The estimated construction waste volumes for each material have been calculated based on the total gross building area of the proposed development of 19,776m^2. The estimated volumes and management strategies for construction waste are presented in Table 4.

Based on the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019*, a minimum of 75% of all construction waste generated from must be either reused or recycled, or both.

Based on the estimated construction waste generation quantities, the site will need to divert 630 tonnes out of the total 840 tonnes generated. This may need to be revised by the Site Supervisor during the construction works as other waste streams (i.e. general waste) would need to be accounted for as well.

Table 4 Estimated Construction Waste Generation Volumes and Management Options

Type of Waste Generated	Most to Least Favorable			Specify method of onsite reuse, contractor and recycling outlet and /or waste depot to be used
	Reuse Estimate Volume Weight (t)	Recycle Estimate Volume Weight (t)	Disposal Estimate Volume Weight (t)	
Timber	3.5t	10.4t		Delivered to the off-site recycler listed below. Chip remainder may be used in landscaping.
Concrete	33.1t	99.4t		To be used as hardstand during construction, then as base under pavements. Any unused concrete would be returned to batch plant for re-use.
Bricks	15.8t	47.5t		Clean and reuse lime mortar bricks for footings. Delivered to the off-site recycler listed below. Noted: it should not be mixed with other materials from construction and demolition waste and reinforced concrete.
Gyprock		19.3t	6.4t	Disposed of in a designated general waste skip. Should asbestos be present, the waste must be removed and disposed of in accordance with the requirements of Work Cover.
Sand/Soil		425.7t	141.9t	Delivered to the off-site recycler listed below.
Metal		19.3t	6.4t	Clean metal (i.e. without presence of other materials) will be delivered to the off-site recycler listed below. Any contaminated metal should be separated to be landfilled.
General waste (including residual waste and dust)	TBA	TBA	TBA	Disposed into a general waste skip.
Other		8.9t	2.9t	Sorted accordingly based on recycling potential of each material

6.2 CONSTRUCTION WASTE STORAGE AND COLLECTION

Construction waste material generated during the construction of the proposed development will be recycled where possible. Recyclable material will be sorted and stored onsite in an appropriately labelled skip.

It is anticipated that garbage will be generated on the subject site during the construction phase. Any garbage generated shall be sorted and store onsite in waste skips.

Construction waste will be sorted and stored on-site in skips.

Please note that the nominated facilities below are suggested as suitably located, licensed facilities capable of accepting the relevant waste materials. Alternative facilities may be utilised if preferred, however must be licensed to receive the generated waste materials. Please also note that the capacities of the nominated facilities in accepting and recycling the specified materials may differ upon the time of construction hence it is recommended that they are contacted prior to transfers of waste to the site.

Waste skips should be provided for the following:

- 1 or more general waste skips for products including sand and soil not classified as VENM, gyprock, treated timber, residual waste and dust, to be delivered to ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916;
- Recycling skips with one skip per material type for bricks, sandstone and concrete to be delivered to Canberra Concrete Recyclers, Gate 384 Pialligo Avenue, Pialligo, Canberra, ACT, 02 6249 7427;
- 1 recycling skip for clean metal and aluminium to be delivered to ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916;
- 1 organics waste skip for untreated timber and VENM that is not reused on site including garden vegetation and untreated timber, to be delivered to Canberra Concrete Recyclers, Gate 384 Pialligo Avenue, Pialligo, Canberra, ACT, 02 6249 7427;
- Additional recycling skips, as required for paper & cardboard, glass, plastics and others to be delivered to a suitable recycling facility. Plastics can be delivered to ACT Recycling, 499 Mugga Lane Symonston, ACT 2609, 02 6239 7916.

Waste skips will be enclosed within waste bays. Waste bays will be lined with sediment fencing or shade cloth. Waste bays would be located in the same area as the demolition stockpiles, as shown in Figure 1.

Construction waste shall not be stored along footpaths, public reserves and street gutters or in areas that would lead to contamination of stormwater and waterways.

7 ONGOING RESIDENTIAL WASTE MANAGEMENT PLAN

7.1 WASTE GENERATION

Residential waste generation rates are shown below in Table 5. Calculations are based on a 7 day per week operation.

Generation rates have been adopted based on residential waste generation rates enclosed in the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019.*

Any common spaces to the residential areas, including lobbies, have not been included in these calculations as any waste generated in these areas is generated in service of the residential dwellings and therefore incorporated into the below rates.

Based on lack of landscaped spaces provided, low volumes of green waste are anticipated from the proposed dwellings hence the waste generation assessment below has primarily accommodated for the separation of food organics.

Due to the lack of organic generation rates in the ACT guidelines, organics generation rates have been calculated based on data enclosed within the Metropolitan Waste and Resource Recovery Group *Introducing a kerbside food and garden organics collection service* 2018. The report states that waste generated within residential developments has a general food waste composition of 36% by weight.

Based on the *SA Waste and Recycling Reporting Template*, the density of garbage is 0.15kg/litre while that of food organics is 0.425kg/litre. Based on this, the equivalent volume composition of organics is 17% and therefore the corresponding garbage composition is 83%. This composition has been applied to the adopted garbage rate in the assessment below.

Table 5 Residential Waste Generation Rates

Dwelling Size	Garbage (L/week)	Commingled Recycling (L/week)	Organics (L/week)
One Bedroom or studio	66.4	70	13.6
Two Bedroom	83	90	17
Three Bedroom	99.6	110	20.4

A waste generation assessment of the proposed development is provided in Table 6.

Table 6 Residential Waste Generation Assessment – Building A

Dwelling Size	Quantity	Waste Per Week		
		Garbage	Recycling	Organics
Two Bedroom	78	6,474L	7,020L	1,326L
Three Bedroom	13	1,295L	1,430L	265L
Total Waste Generated per Week		**7,769L**	**8,450L**	**1,591L**

Table 7 Residential Waste Generation Assessment – Building B

Dwelling Size	Quantity	Waste Per Week		
		Garbage	Recycling	Organics
Studio and One Bedroom	39	2,590L	2,730L	530L
Two Bedroom	17	1,411L	1,530L	289L
Three Bedroom	8	797L	880L	163L
Total Waste Generated per Week		**4,798L**	**5,140L**	**982L**

7.2 WASTE SYSTEMS

Waste would be sorted on-site by residents as appropriate into the following streams:

- Garbage (General Waste);
- Commingled Recycling;
- Food Organics;
- Hard waste;
- Charity; and
- E-waste.

SALT strongly recommends maximising recycling and recovery of materials where possible to minimise volume of waste landfilled and therefore minimise environmental harm. It should be ensured that all recyclable streams can be as easily disposed as garbage is throughout the development.

7.2.1 DUAL CHUTE

All residents would dispose of bagged garbage and loose recyclables using the provided dual chute system. There would be one chute dedicated to garbage and another dedicated to commingled recycling. Chute doors would be signed as "Garbage" or "Commingled Recycling" as appropriate. Each chute would output directly into the stream appropriate 1,100L conveyor bin system within the ground level bin room.

Please note that the maximum deflection angle typically allowed for the chute system is 22°. It is however recommended that a smaller angle than the maximum is adopted to prevent clogging of materials within the chute system.

It is recommended that spare bins be purchased and placed under the chute system for use during bin collections.

Termination of chutes would have skirting or other equivalent system to reduce any materials leaving the bin on impact.

Chute termination points would be fenced off, so residents are not able to access the equipment. Chute termination area will only be accessible by authorised personnel.

It is recommended that waste bins have reinforced bases for bin longevity.

7.2.2 GARBAGE (GENERAL WASTE)

The dwellings would be furnished with plastic lined bins to have minimum capacities of the following for the temporary holding of garbage:

- One-bedroom dwelling – 10 litres
- Two-bedroom dwelling – 12 litres
- Three-bedroom dwelling – 15 litres

Note: The above capacities consider the separation of organic waste.

These capacities are also based on transfers to the chute drop off point occurring once per day.

The internal bins will be stored beneath the kitchen counter within each dwelling.

Residents would transfer the waste as required to the appropriate chute drop off point located adjacent to the lift core at each residential level, as shown in Appendix 1.

Garbage is to be disposed of bagged.

7.2.3 COMMINGLED RECYCLING

The dwellings would be furnished with unlined bins to have minimum capacities of the following for the temporary holding of commingled recyclables:

- One-bedroom dwelling – 10 litres
- Two-bedroom dwelling – 13 litres
- Three-bedroom dwelling – 16 litres

The internal bins will be stored beneath the kitchen counter within each dwelling.

Residents would transfer recyclables as required to the appropriate chute drop off point located adjacent to the lift core at each residential level, as shown in Appendix 1.

Commingled recyclables are to be disposed of loosely.

7.2.4 LARGE CARDBOARD WASTE

Large cardboard waste exceeding the size appropriate for the chute would be broken down and disposed of in the 1,100L commingled recycling bin located in the ground floor bin room (refer to Appendix 1).

All other cardboard waste would be disposed of using the provided chute system.

7.2.5 FOOD ORGANICS AND GARDEN ORGANICS (FOGO)

Each dwelling would be furnished with unlined bins or bins lined with compostable lining approved by the waste contractor, to have a minimum capacity of 5 litres. Residents would transfer organics waste as required to the organic waste bins provided in the basement level 1 residential bin rooms., accessed via the lift and internal passageways.

Organics waste is to be disposed of loosely or in compostable bags that have been approved by the waste contractor. These compostable bags should be marked with the Australian Standard compostable logo as shown in Figure 2 below. It should be noted that non-compostable bags should not be placed into the organics bins as it cannot be composted and thus will affect the quality of the organic product.

The internal bins will be stored beneath the kitchen counter within each dwelling.

Figure 2 Australian Standard Compostable Logo

Given the minimal balcony areas provided within each dwelling, it is envisioned that separate green waste bins would not be required by the residential dwellings. Any green waste generated can be disposed into the food organic bins provided.

Green waste generated by the maintenance of communal landscaped areas would be disposed of via the engaged landscaper.

7.2.6 HARD WASTE

A total hard waste area of $2m^2$ (based on a rate of $1m^2$ per 100 dwellings) has been allocated across the two residential bin rooms. Residents would access this room via the lift and internal passageways, as shown in Appendix 1.

Building management would arrange hard waste collections with collections to be conducted by a private contractor as required.

7.2.7 E-WASTE

E-waste must not be disposed into general waste or commingled recycling bins at any time.

Any e-waste generated within the development can be deposited at one of the drop off points available within the region. These locations are listed here on the City Services website:

https://www.cityservices.act.gov.au/recyclopaedia/items/e/e-waste-computers,-printers,-modems,-tvs-etc

7.2.8 CONTAINER DEPOSIT SCHEME (CDS)

Residents are encouraged to visit one of the CDS return points to deposit their eligible containers.

A list of eligible containers is available here: https://actcds.org.au/eligible-containers/

A list of the available return points within ACT is available here: https://actcds.org.au/return-points/.

7.2.9 SOFT PLASTICS

Residents may be able to recycle soft plastics at a local Coles or Woolworths store. The soft plastics recycler would typically be Redcycle and a list of the types of soft plastics that are accepted at their deposit bins is available here: https://www.redcycle.net.au/what-to-redcycle/. The availability of this soft plastic service may however be dependent on whether Redcycle resumes their recycling services which has been halted for the time being, and/or the service is introduced by another recycler.

7.3 BIN QUANTITY, SIZE AND COLLECTION FREQUENCY

Table 8 to Table 10 below contain information regarding bin quantity, size and frequency of collection.

Table 8 Residential Bin Size and Collection Frequency – Building A

Waste Stream	Collections per Week	Bin Size	No. Bins	Weekly Capacity	Weekly Volume
Garbage	2	1,100L	4	8,800L	7,769L
Commingled Recycling	1	1,100L	8	8,800L	8,450L
Organics	1	240L*	7	1,680L	1,591L

**It should be noted that some waste contractors provide a maximum bin size of 120L for organics due to the significant weight of this waste stream hence the available organic bin sizes should be clarified prior to engaging the contractor.*

Table 9 Residential Bin Size and Collection Frequency – Building B

Waste Stream	Collections per Week	Bin Size	No. Bins	Weekly Capacity	Weekly Volume
Garbage	2	1,100L	3	6,600L	4,798L
Commingled Recycling	1	1,100L	5	5,500L	5,140L
Organics	1	240L*	5	1,20L	982L

**It should be noted that some waste contractors provide a maximum bin size of 120L for organics due to the significant weight of this waste stream hence the available organic bin sizes should be clarified prior to engaging the contractor.*

Table 10 Typical Waste Bin Dimensions

Capacity (L)	Width (mm)	Depth (mm)	Height (mm)	Area (m^2)
1,100	1240	1070	1330	1.33
240	585	730	1060	0.43

Note: The above dimensions are based on SULO's flat lid bin specifications

7.4 BIN COLOUR AND SUPPLIER

All bins would be provided by private supplier. The below bin colours are specified by Australian Standard AS4123.7–2006, however due the private nature of the collection, these are only recommendations and are not mandatory:

- Garbage (general waste) shall have red lids with dark green or black body;
- Recycle shall have yellow lids with dark green or black body; and
- Organics shall have green lids with dark green or black body.

7.5 WASTE STORAGE AREA

Table 11 and Table 12 demonstrates the cumulative space requirements and provision of residential waste areas in the proposed development.

Space within the storage location would allow for bin rotation and safe service provision.

Residential waste rooms will be secured by an electronic keypad or key card access and will only be accessible by residents. Commercial tenants would not have access to the residential waste rooms.

Please refer to scaled drawing shown in Appendix 1.

Table 11 Waste Area Space Requirements – Building A

Stream	Space Required (excluding circulation)	Space Provided
General Waste	5.32m^2	51.00m^2
Commingled Recycling	10.64m^2	
Organics	3.01m^2	
Hard Waste	1.00m^2	
TOTAL	**19.97m^2**	**51.00m^2**

Table 12 Waste Area Space Requirements – Building B

Stream	Space Required (excluding circulation)	Space Provided
General Waste	3.99m²	62.00m²
Commingled Recycling	6.65m²	
Organics	2.15m²	
Hard Waste	1.00m²	
TOTAL	**13.79m²**	**62.00m²**

Note, commercial and residential waste would not be stored together.

Waste management would be overseen by building management.

8 COMMERCIAL WASTE MANAGEMENT PLAN

8.1 WASTE GENERATION

Commercial waste generation rates are shown in Table 13. Calculations are based on 7 days per week operation for all commercial spaces.

Generation rates have been adopted based on commercial waste generation rates enclosed in the ACT Government *Development Control Code for Best Practice Waste Management in ACT 2019*.

Due to the lack of organic generation rates in the ACT guidelines, food organic waste generation rates in café and takeaway food shop spaces have been calculated based on the State of Victoria, Department of Health and Human Services *Victoria Food Organics Recycling: A guide for small-medium food services organisations* (2016) report. This report details that waste volumes generated by food and drink premises within Victoria has a general composition of at least 50% of food waste. This rate has been applied in the assessment below with the garbage rate being reduced accordingly to reflect organics separation.

Office waste generation rates have been adopted for the gallery space and shops (non-food) rates have been adopted for the florist. Waste generation rates for the remaining spaces have been applied accordingly based on the intended uses as listed in Section 3.

Table 13 Commercial Waste Generation Rates

Use	Garbage (L/100m²/week)	Commingled Recycling (L/100m²/week)	Organics (L/100m²/week)
Café	2310	945	2310
Hairdresser, Beauty salon	420	70	N/A
Office	140	175	N/A
Retail trading shops (non-food premises) <100m²	350	175	N/A
Retail trading shops (non-food premises) >100m²	350	350	N/A
Takeaway food shop	350	700	350

A commercial waste generation assessment is provided in Table 14.

Table 14 Commercial Waste Generation Assessment

Use	Area	Waste Per Week		
		Garbage	Recycling	Organics
Café	155m²	3,581L	1,465L	3,581L
Hairdresser, Beauty salon	207m²	869L	145L	N/A
Office	27m²	38L	47L	N/A
Retail trading shops (non-food premises) <100m²	24m²	84L	42L	N/A
Retail trading shops (non-food premises) >100m²	239m²	837L	837L	N/A
Takeaway food shop	266m²	931L	1,862L	931L
Total Waste Generated per Week		**6,340L**	**4,398L**	**4,512L**

8.2 WASTE SYSTEMS

Waste would be sorted on-site by staff and cleaners as appropriate into the following streams:

- Garbage (General Waste);
- Commingled Recycling;
- Food Organics;
- Container Deposit Scheme; and
- Hard Waste.

8.2.1 BIN STATIONS

Based on Method *Westpac NZ Case Study*, the use of bin stations throughout their office spaces have reduced waste to landfill by 40%. The case study discusses the significance of accountability in ensuring diversion of waste from landfill. It is therefore recommended that bin stations are provided throughout commercial spaces.

Each bin station should be equipped with one bin for each waste stream. This would encourage the user to make a conscious decision before depositing their waste product into a specific bin and encourage appropriate segregation especially when bins are placed within an area open to public view.

An example bin station with vertical signage is shown in Figure 3. The vertical signage is recommended to be implemented at each bin station to educate the users on the appropriate separation methods. This would allow for maximum diversion of waste from landfill and recovery of the respective waste streams to be achieved.

Figure 3 Example Bin Station with vertical signage

8.2.2 GARBAGE (GENERAL WASTE)

The commercial spaces would be furnished with plastic lined bins for the temporary holding of garbage waste, to have the following minimum cumulative capacities:

- Café – 330 litres per 100m^2
- Hairdresser, beauty salon – 60 litres per 100m^2
- Office – 20 litres per 100m^2
- Retail trading shops (non-food) – 50 litres per 100m^2
- Takeaway food shop – 50 litres per 100m^2

Note: The above capacities for the café and takeaway food shop spaces considers the separation of food organics.

These capacities are based on the transfer of waste to the bin room occurring once per day.

Staff/cleaners would dispose of waste from these bins directly into the appropriate 1,100L bin provided within the basement level 1 bin room, accessed via the lift (refer to Appendix 1).

Garbage is to be disposed of bagged.

8.2.3 COMMINGLED RECYCLING

The commercial spaces would be furnished with unlined bins for the temporary holding of commingled recyclables, to have the following minimum cumulative capacities:

- Café – 135 litres per 100m^2
- Hairdresser, beauty salon – 10 litres per 100m^2
- Office – 25 litres per 100m^2
- Retail trading shops (non-food) less than 100m^2 – 25 litres per 100m^2
- Retail trading shops (non-food) more than 100m^2 – 50 litres per 100m^2
- Takeaway food shop – 100 litres per 100m^2

These capacities are based on the transfer of recyclables to the bin room occurring once per day.

Staff/cleaners would dispose of waste from these bins directly into the appropriate 1,100L bin provided within the basement level 1 bin room, accessed via the lift (refer to Appendix 1).

Commingled recyclables would be disposed of loosely.

8.2.4 FOOD ORGANICS AND GARDEN ORGANICS

The café and takeaway food shop spaces would be furnished with unlined bins for the temporary holding of food organics, to have minimum cumulative capacity of the following:

- Café – 330 litres per 100m^2
- Takeaway food shop – 50 litres per 100m^2

These capacities are based on the transfer of waste to the bin room occurring once per day.

Staff/cleaners would dispose of waste from these bins directly into the appropriate 240L bin provided within the basement level 1 bin room, accessed via the lift (refer to Appendix 1).

Organics waste is to be disposed of loosely or in compostable bags that have been approved by the waste contractor.

Please refer to section 7.2.5 for more information regarding disposal bags allowed to be used for food organics disposal.

As frequent collections of 3 times weekly are being proposed for the organic waste stream, a refrigerator would not be deemed necessary for temporary storage of food waste.

Green waste generated by the maintenance of communal landscaped areas would be disposed of via the engaged landscaper.

8.2.5 CONTAINER DEPOSIT SCHEME (CDS)

With the introduction of the Container Deposit Scheme (CDS), two 1,100L bins have been provided within the commercial waste room for storage of eligible containers.

Building management would arrange container deposit scheme collections with collections to be conducted in conjunction with the ACT CDS network operator.

8.2.6 HARD WASTE

A 1m^2 hard waste area has been provided within the commercial bin room for storage and collection of hard waste.

Hard waste will be managed independently by the respective commercial tenants.

Commercial tenants would arrange for hard waste collections to occur via a private contractor, as required.

8.3 BIN QUANTITY, SIZE AND COLLECTION FREQUENCY

The bin quantity, size and the frequency of collection are shown below in Table 15 and Table 16.

Three waste collections per week is recommended given the volume and nature of the waste generated in the commercial spaces. This would be particularly beneficial in minimising odour and vermin issues that may potentially be caused by the storage of organic waste on-site.

Commercial waste collections would be coordinated with residential waste collections to reduce truck movements in the local area.

Table 15 Commercial Bin Size and Collection Frequency

Waste Stream	Collections per Week	Bin Size	No. Bins	Weekly Capacity	Weekly Volume
Garbage	3	1,100L	2	6,600L	6,340L
Commingled Recycling	3	1,100L	2	6,600L	4,398L
Organics	3	240L*	7	5,040L	4,530L

**It should be noted that some waste contractors provide a maximum bin size of 120L for organics due to the significant weight of this waste stream hence the available organic bin sizes should be clarified prior to engaging the contractor.*

Table 16 Typical Waste Bin Dimensions

Capacity (L)	Width (mm)	Depth (mm)	Height (mm)	Area (m^2)
1,100	1240	1070	1330	1.33
240	585	730	1060	0.43

Note: The above dimensions are based on SULO's flat lid bin specifications

8.4 BIN COLOUR AND SUPPLIER

All bins would be provided by private supplier. The below bin colours are specified by Australian Standard AS4123.7-2006, however due the private nature of the collection, these are only recommendations and are not mandatory:

- Garbage (general waste) shall have red lids with dark green or black body;
- Recycle shall have yellow lids with dark green or black body;
- Organics shall have green lids with dark green or black body; and
- Glass shall have purple lids with dark green or black body.

Note, private contractors often supply bins for collection.

8.5 WASTE STORAGE AREA

Table 17 demonstrates the cumulative space requirements and provision of commercial waste areas in the proposed development.

Please refer to scaled drawing shown in Appendix 1.

Table 17 Commercial Waste Area Space Requirements

Stream	Space Required (excluding circulation)	Space Provided
General Waste	2.66m²	37.80m²
Commingled Recycling	2.66m²	
Organics	3.01m²	
Hard Waste	1.00m²	
Container Deposit Scheme	2.66m²	
TOTAL	**11.99m²**	**37.80m²**

Note, commercial and residential waste would not be stored together in the ground level bin room.

Waste management would be overseen by building management.

9 WASTE COLLECTION

Residential waste would be collected by private contractor as follows:

Building A:

- 4 x 1,100L garbage bins collected twice per week;
- 8 x 1,100L commingled recycling bins collected once per week; and
- 7 x 240L organics bins collected once per week.

Building B:

- 3 x 1,100L garbage bins collected twice per week;
- 5 x 1,100L commingled recycling bins collected once per week; and
- 5 x 240L organics bins collected once per week.

All residential waste bins would be stored on-site in the residential bin rooms provided at basement level 1.

Commercial waste would be collected by private contractor as follows:

- 2 x 1,100L garbage bins collected three times per week;
- 2 x 1,100L commingled recycling bins collected three times per week; and
- 7 x 240L organics bins collected three times per week.

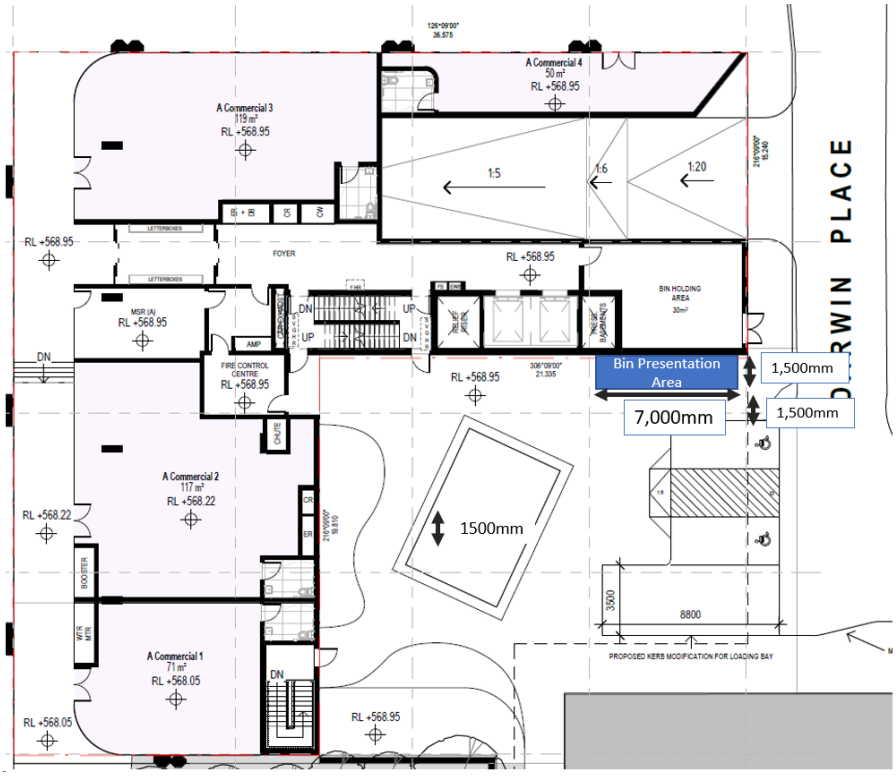
Hard waste and container deposit scheme bins would be collected as required.

All commercial bins would be stored on-site in the commercial bin room provided at basement level 1.

Based on the bin presentation area (shown in Figure 4) and bin holding area provided, it is proposed that the residential recycling bins occur on a separate day to the remaining residential and commercial bins. This would allow all bins required to be collected at any one time to be presented to the holding area and presentation area as highlighted below.

The bin presentation area highlighted in orange below is proposed to be utilised once per week for presentation of 9 of the 240L residential organic bins. It is noted that this area is currently used for presentation of 1,100L bins.

Figure 4 Bin Presentation Area



All bins will be presented to the bin holding area and designated bin presentation area along Darwin Place the night before collections occur. Bins will be transferred via the bin lift provided at basement level 1. A bin tug would be utilised for mechanical assistance to minimise occupational health and safety risks.

General waste collections would occur via an 8.8m medium rigid vehicle.

Hard waste collections would be performed by a utility vehicle or AustRoads B99 design vehicle.

Waste collection vehicles would enter Darwin Place via a forward motion from University Avenue.

Waste collection vehicles would prop safely within the proposed loading bay.

Vehicle operators would ferry waste bins from the kerb and return upon emptying.

Waste collection vehicles would perform a reversing manoeuvre to exit the loading bay and then exit Darwin Place in a forward direction onto University Avenue.

Based on the ACT Development Control Code, it is noted that on-site collections should be accommodated where collections by private contractors are proposed. Due to the spatial constraints of the site and as the smallest vehicle available to service this site is an 8 metre long collection vehicle, it is proposed that collections occur along Darwin Place as per the current practice for waste collections. As noted above, preliminary discussions with ACT NoWaste confirmed that the site's collection areas would not be accessible by the Territory's collection vehicle hence private collections have been proposed for residential waste collections as well.

It is also understood that the collection arrangement proposed above is referred to as a "performance-based solution" which requires endorsement from Transport Canberra and City Services (TCCS). Given the limited timeframe remaining to submit the development application, the project team are seeking to receive comments from the Territory in response to this report.

Building management would ensure that waste vehicle operators are able to access the bins.

Building management would return the bins as soon as practicable after collections occur.

Waste bins would not be permanently stored on the street.

10 RESPONSIBILITIES

Building management would be responsible for overseeing waste management within the development. Responsibilities would include:

- Provide residents and commercial tenants with a waste management handbook which would include information on bin storage areas, transfer paths and waste management methods onsite;
- Rotating bins placed beneath chutes or providing staff/cleaners with a cleaning and bin transfer/rotation schedules;
- Arrange for regular maintenance and sanitation of the chute systems to be performed;
- Transfer bins to the bin holding and presentation area along Darwin Place the night before collections occur;
- Ensure collections of residential recycling bins are scheduled to occur on a separate day to the remaining residential and commercial bins to allow for all bins being collected to be presented within the bin holding area and presentation area along Darwin Place at any one time;
- Ensure that all bins throughout the site and the bin room are equipped with appropriate signages to guide users on appropriate segregation methods for their waste and recyclables;
- Inspecting waste stores and removing any waste dumped outside the bins or bin rooms;
- Reviewing contamination within bins;
- Conduct bin washing regularly or engage with a third-party bin washing service to perform this task;
- Investigating incidents of inappropriate waste storage (or aggregation).

Building management would ensure anyone found responsible for inappropriate waste disposal would be appropriately educated and made aware of correct waste disposal techniques.

It is recommended that building management conducts a waste audit if waste is found to be inappropriately deposited by users or if the bin capacities need to be reviewed.

11 SIGNAGE

Waste storage areas, chute intake doors and bins would be clearly marked and signed with the industry standard signage approved by ACT City Services or equivalent. The typical ACT City Services signage is illustrated in Figure 5.

Additional waste disposal signages for use throughout the development's waste areas are available at the ACT webpage linked here: https://www.cityservices.act.gov.au/recycling-and-waste/multi-unit-developments/educational-material

Building management may order selected printed waste education signage and material by filling in the form available at the webpage provided above as well.

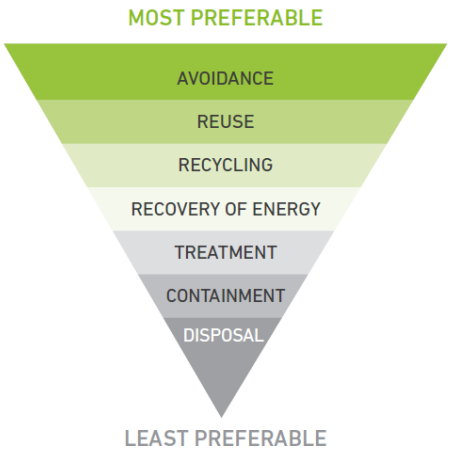
Figure 5 ACT City Services Waste Signage

12 SUSTAINABILITY ACTION PLAN AND INITIATIVES

The importance of restructuring the institutional waste management methods in developments is becoming more apparent as we experience the adverse impacts of increasing waste volumes and declining recycling rates. Developments such as the proposed subject site can contribute towards the prevention and reduction of nationwide waste generation volumes as well as to promote a local circular economy system.

Building management should encourage users by demonstrating a commitment towards waste avoidance and minimisation initiatives. The waste hierarchy as detailed in the *Environmental Protection Act* 2017 should be observed in order of preference (refer to Figure 6).

Figure 6 Waste Hierarchy



In addition to the waste management strategy detailed in the enclosed report, building management can establish landfill diversion and recycling targets and conduct periodic waste audits to monitor contamination levels in recycling and organics bins. The results of the audit could be shared with residents and commercial tenants to encourage them to continue or to improve their waste separation efforts. The audit may also be beneficial from a cost perspective as it would inform building management of opportunities to reduce bin numbers or collection frequencies.

Residents and commercial tenants should be inducted on on-site waste management practices and on the development's sustainability action plan via the provision of a handbook or in-person training, as deemed necessary. Commercial tenancies should minimise single use packaging and promote re-use by providing opportunities to consumers to utilise their own reusable containers or bags.

13 WASTE AREA DESIGN REQUIREMENTS

13.1 CHUTE SYSTEM

Information signs must be placed on each waste and recycling chute intake door, on each residential level.

The installation of waste and recycling chutes and waste service compartments on each residential floor, and waste and recycling storage facilities, must be in accordance with the manufacturer's specifications.

The chute system must have the following properties:

- Chutes must be located and insulated in a manner that reduces noise and odour impact on dwellings.
- Chutes and all ancillary devices must be constructed of smooth, durable, impervious, non-corrosive and fire-resistant material. Chutes and all ancillary devices must be easy to clean and must have an appropriate cleaning system installed.
- Chutes must be cylindrical and must have a minimum diameter of 0.50m. The main shaft of the chute must not have bends or sections of reduced diameter. Bends will however be given consideration for reducing the velocity of waste and recyclables provided they comply with the manufacturer's engineering specifications. Internal overlaps in the chute must follow the direction of waste or recyclable material flow.

13.2 VENTILATION AND ACCESSIBILITY

The floor, walls and ceilings must be constructed of solid material; i.e., not rendered or plastered. A bump rail constructed of galvanised steel or other durable impervious material must be installed around the walls at a height between 0.90m and 1.30m. The bump rail must be a minimum of 50mm clear of walls or, if using flat steel sheets, must be installed flush with walls.

Ventilation would be provided in accordance with Australian Standard AS1668. Rooftop exhaust fans would be implemented within each chute system to ensure proper chute ventilation is provided.

The waste room will be equipped with tight fitting doors and impervious flooring. Any openings within the waste room will be fitted with vermin-proof mesh.

Doors must be durable and self-closing. An internal switch must be located adjacent to the entry door.

All electrical, water or gas fittings must be protected to prevent damage caused by moving bins.

13.3 LITTER MANAGEMENT, WASHING AND STORMWATER POLLUTION PREVENTION

Chutes would be equipped with flushing nozzles to enable the regular washing of chutes to maintain appropriate hygiene levels for future use.

Water supply and an appropriately drained wash down area would be provided within the bin room in which each bin is to be washed regularly by building management. Bin washing areas or bin wash bays must discharge to a litter trap and a grease trap. Bin wash areas should not discharge into stormwater drainage.

The commercial and residential bin rooms must have a floor grade to a floor waste with the trap connected to sewer. Floor gradients must not exceed 1:50 (2 per cent). Where floor waste or sewer connections are not provided, a sign must be provided within the enclosure stating that: "No water from washing of waste and recycling containers may be discharged into the stormwater system. Contravention of this requirement is an offence under the *Environment Protection Act 1997*."

Alternatively, a third-party bin washing service can be engaged to perform this service. Bin washing suppliers must retain all wastewater to within their washing apparatus so as to not impact on the drainage provisions of the site.

Building management and cleaners would be responsible in ensuring the following to prevent or minimise the dispersion of litter throughout the site:

- Prevent overfilling of bins by ensuring bin lids are closed at all times;
- Require waste contractor to remove any spillage that may occur during waste collections; and
- Ensure anyone found responsible for inappropriate waste disposal or dumping would be appropriately educated and made aware of correct waste disposal techniques.

13.4 NOISE REDUCTION

All chute systems and waste areas would meet EPA, BCA and AS2107 acoustic requirements as appropriate within operational hours assigned to minimise acoustic impact on surrounding premises.

Waste contractors should also abide by the following regulations to ensure minimal noise impacts to the neighboring properties:

- Compaction only to be carried while on the move;
- Bottles should not be broken up at the point of collection
- Routes that service entirely residential areas should be altered to reduce early morning disturbances; and
- Noisy verbal communication between operators should be avoided where possible.

13.5 DDA COMPLIANCE

All waste areas to be accessed by commercial staff/residents would comply with AS1428.1:2009.

14 RISK AND HAZARD ANALYSIS

Table 18 shows the potential risks, severity and suggested control methods that could be considered to avoid the risks from occurring during waste collections.

Note that this is a preliminary risk assessment and does not replace the need for the building management and collection contractors to complete their respective OHS assessment for waste collections.

The information provided below have been adopted from WorkSafe Victoria *Non-Hazardous Waste and Recyclable Materials* (2003). The severity of each risk has been determined based on the risk rating table enclosed in Department of the Environment *Environmental Management Plan Guidelines* 2014.

Table 18 Potential Risks and Control Methods During Waste Collections

Area	Risk	Severity	Suggested controls
Waste collection	Incidents during waste collection vehicle ingress or egress movements	Low	Vehicle operators would be trained in ensuring the following Tailgate is closed after clearing waste area Move vehicle slowly when tailgate or body is raised Clear waste from tailgate seal and from rear of machine before departure from the subject site Ensure tailgate is locked after unloading operation Vehicle operators should not exit the vehicle body unless engine is switched off, ignition key is removed, safety prop is in position and the vehicle body is well ventilated. Regular safety checks and inspection of vehicles should be conducted.
	Incidents during manual handling of bins	High	Vehicle should meet relevant Australian Design Rules. Ensure that vehicles with low bowl height are used to avoid lifting of bins above shoulder height. Vehicle operator should be clear of the equipment before activation of packing or tipping controls.
	Slip and trip hazards in moving into and out of the vehicle	Medium	Maintain sufficient and frequent communication between driver and runner. The hose should not be used as handholds when mounting or dismounting.
	Slips and trips while transporting bins	Low	Bins will be transferred via the ramp provided along the kerb at Darwin Place (adjacent to the DDA parking space). The ramp has a minimal gradient and hence would minimise potential risks of slips and trips. The loading dock and bin presentation area would also be well lit at all times to ensure good visibility to staff/vehicle operators. However, to ensure that any other potential risks are mitigated, frequent communication should be maintained between the driver and runner and the runner should only transfer one bin at a time.
Surrounding traffic	Conflict with other vehicle operators and commercial tenants/residents within the loading dock during collection	Medium	Ensure that collection is to occur only at off-peak hours. The collection area should also be well-lit to allow for better visibility of oncoming traffic and pedestrians.
Waste bins	Type of wastes handled – risk associated in contact	Medium	Residents and commercial tenants should be educated on safe disposal of hazardous substances and sharp objects.

Area	Risk	Severity	Suggested controls
	with unknown hazardous substances or sharp objects		Waste vehicle operators should be trained and informed on safe handling of unknown substances. Operators could be provided with PPE to avoid infections and to assist in handling of waste bins.
Waste Bins	Overflowing bins affecting the transport of bins to the waste collection vehicle or presenting as a trip hazard.	Low	The recommended number of bins enclosed in this report provides larger capacities than the volumes generated for all waste streams hence there would be a low likelihood of this occurring.

15 SUPPLIER CONTACT INFORMATION

Table 19 provides a list of equipment specified by this waste management plan.

Table 19 High Level Purchasing Schedule

Item	Quantity	Supplier	Notes
1,100L Residential & Commercial Bins	24	Private Supplier*	7 x 1,100L residential garbage bins* 13 x 1,100L residential commingled recycling bins* *An additional bin is recommended for placement beneath the chute system during collections. 2 x 1,100L commercial garbage bins 2 x 1,100L commercial commingled recycling bins
240L Bin	19	Private Supplier*	12 x 240L residential organic bins 7 x 240L commercial organic bins
Dual Chute System	2 (4 Chutes)	Private Supplier	Please refer to APPENDIX 2 for example specifications of a dual chute system.
Bin Station	As required	Private Supplier	Internal bin stations. Each bin station will contain one bin per waste stream.
*Private waste collection contractors often supply their own bins for collection.			

Below is a complimentary listing of contractors and equipment suppliers. You are not obligated to procure goods/services from these companies. This is not, nor is it intended to be, a complete list of available suppliers.

SALT does not warrant (or make representations for) the goods/services provided by these suppliers.

15.1 EQUIPMENT SUPPLIERS

15.1.1 DUAL CHUTE SYSTEM

- Wastech Engineering – 03 8787 1600
- ASI JD MacDonald – 03 8558 7200
- Elephant's Foot – 02 9780 3500
- Australian Chutes & Engineering – 03 9761 7557

15.1.2 BIN SUPPLIER

- Sulo MGB Australia (wheelie bin) – 1300 364 388
- Method Recycling (bin stations) – 0477 630 220 / 0412 001 686
- Source Separation System (wheelie bin and bin stations) – 1300 739 913

15.1.3 BIN TUG

- Electrodrive – 1300 934 471
- Sitecraft – 1300 363 152

15.1.4 ORGANICS BIN BIO-FILTER

The bio bin-filter may be purchased for odour and vermin prevention purposes.

- Smart Biz Oz – 02 9160 7833

15.2 WASTE COLLECTORS

15.2.1 GARBAGE, RECYCLING AND ORGANICS

- BinCo – 0459 522 889
- Capital Rubbish Removal – 02 6230 0449 / 0467 830 005
- Cleanaway – 13 13 39
- JJ Richards – 02 6270 5000
- Organic Recycling Group – 1300 674 732
- SUEZ Environment – 13 13 35
- Veolia Environmental Services – 132 955
- Wasteaway – 02 6260 1288
- Waster – 1300 927 837

15.2.2 HARD WASTE

- ACT Rubbish Removals – 0432 854 544
- Tom's Trash Paks – 02 6249 7834 / 1800 448 385

15.3 BIN WASHING SERVICES

- A.C.T Wheelie Clean – 0405 104 745
- Canberra Wheelie Clean – 0422 367 146
- You've Bin Cleaned – 0402 737 032

16 PURPOSE AND LIMITATIONS

This Waste Management Plan has been prepared to form a part of the development application. The report is prepared to:

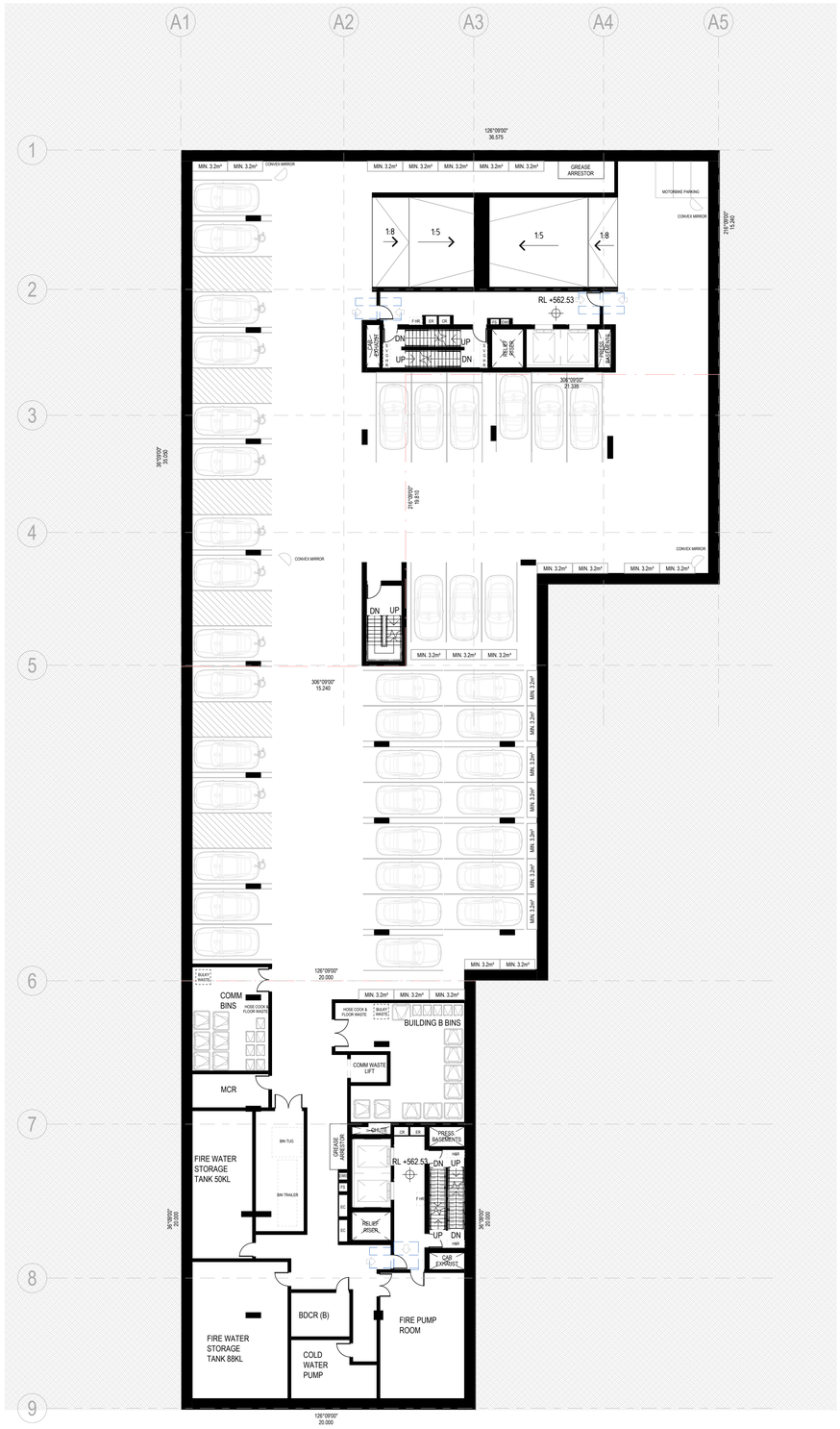
- Demonstrate that an effective waste management system is compatible with the design of the development. An effective waste management system comprises of a system that is hygienic, clean, tidy, minimises waste being landfilled and maximises recycling and resource recovery;
- Ensure stakeholders are well informed of the design, roles and responsibilities required to implement the system;
- Provide supporting scaled drawings to confirm that the final design and construction is compliant with the report;
- Define the relevant stakeholders involved in ensuring the implementation of the waste management system; and
- Ensure tenants are not disadvantaged in access to recycling and other sustainable waste management options.

The following should be noted regarding the enclosed information:

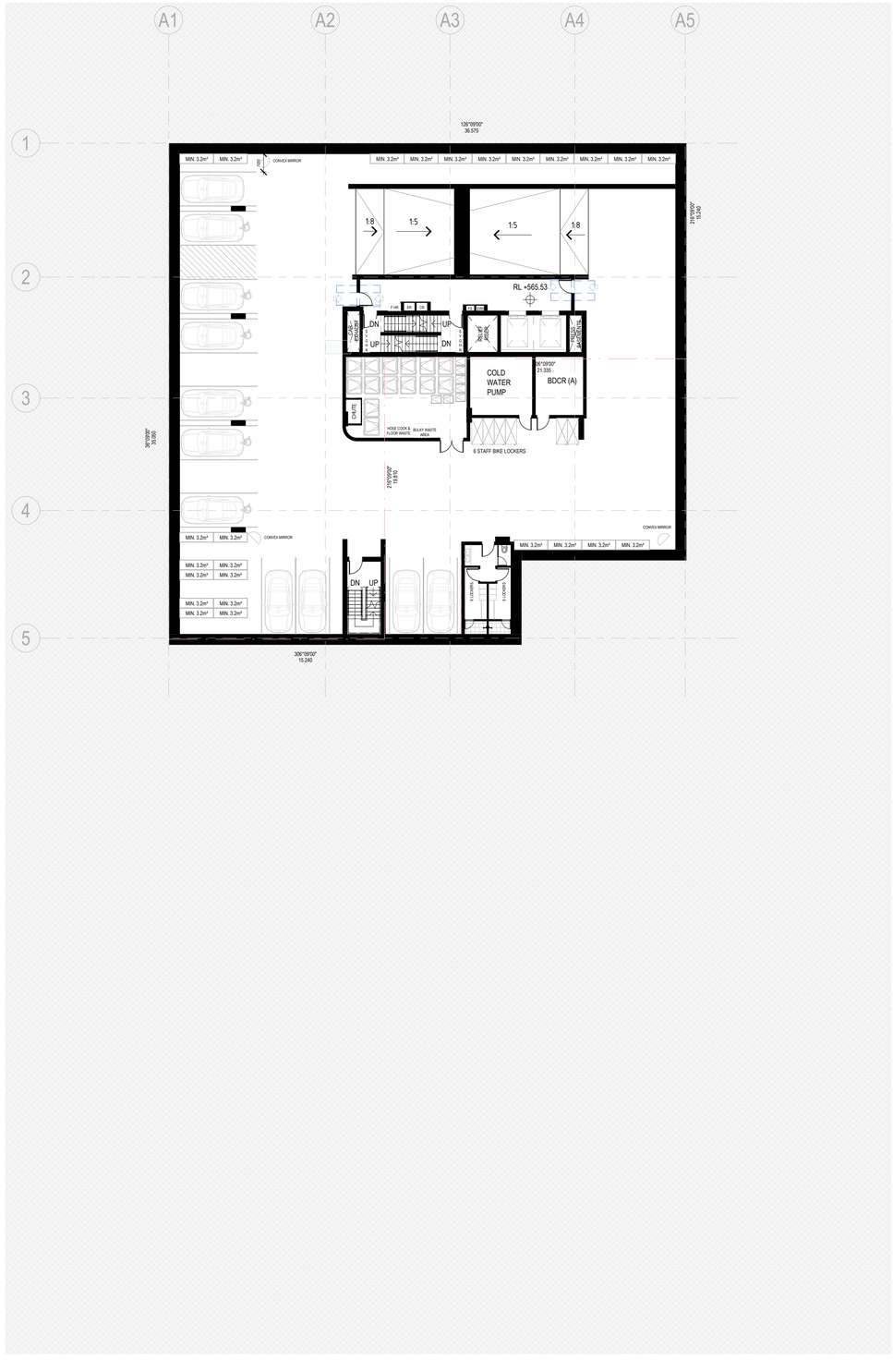
- The waste generation volumes provided are estimates based on the best available waste generation rates. The actual waste volumes generated on-site may differ slightly from that estimated as it would depend on the occupancy rate of the development and tenant type (i.e. families or renters);

- The equipment specifications and any information provided regarding the recommended equipment are provided for reference purposes only and should not be relied upon for procurement. SALT recommends that the developer attains the latest specifications of the required equipment and service provisions from the respective contractor(s) prior to engaging them or purchasing the relevant equipment.
- The report should be updated if the development plans are amended or if new legal requirements are introduced.

APPENDIX 1 DESIGN DRAWINGS



2 BUILDING A-B2
1 : 200



3 BUILDING A-B1
1 : 200

STORAGE
Level

BUILDING A-B5
STORAGE: 55
BUILDING A-B4
STORAGE: 43
BUILDING A-B3
STORAGE: 43
BUILDING A-B2
STORAGE: 31
BUILDING A-B1
STORAGE: 25
Grand total: 197

ALL STORAGE CAGES TO BE 2.4M X 0.7M x 2M (h)
VOLUME OF EACH STORAGE CAGE : 6.72M

PARKING SCHEDULE

Level	Type
BUILDING A-B1	DDA
DDA: 6	
BUILDING A-B1	PARKING
PARKING: 5	
BUILDING A-B1: 11	
BUILDING A-B2	DDA
DDA: 12	
BUILDING A-B2	PARKING
PARKING: 27	
BUILDING A-B2: 39	
BUILDING A-B3	PARKING
PARKING: 53	
BUILDING A-B3: 53	
BUILDING A-B4	PARKING
PARKING: 58	
BUILDING A-B4: 58	
BUILDING A-B5	PARKING
PARKING: 62	
BUILDING A-B5: 62	
	MOTORBIKE
MOTORBIKE: 6	
: 6	
Grand total: 229	

KUD
Architecture. Interior. Planning. Urban Design. Art.
kud.com.au
Unit 1/76-78 Balmain Street, Cremorne, Victoria, Australia 3121.
+61 3 9429 4733
enquiries@kud.com.au

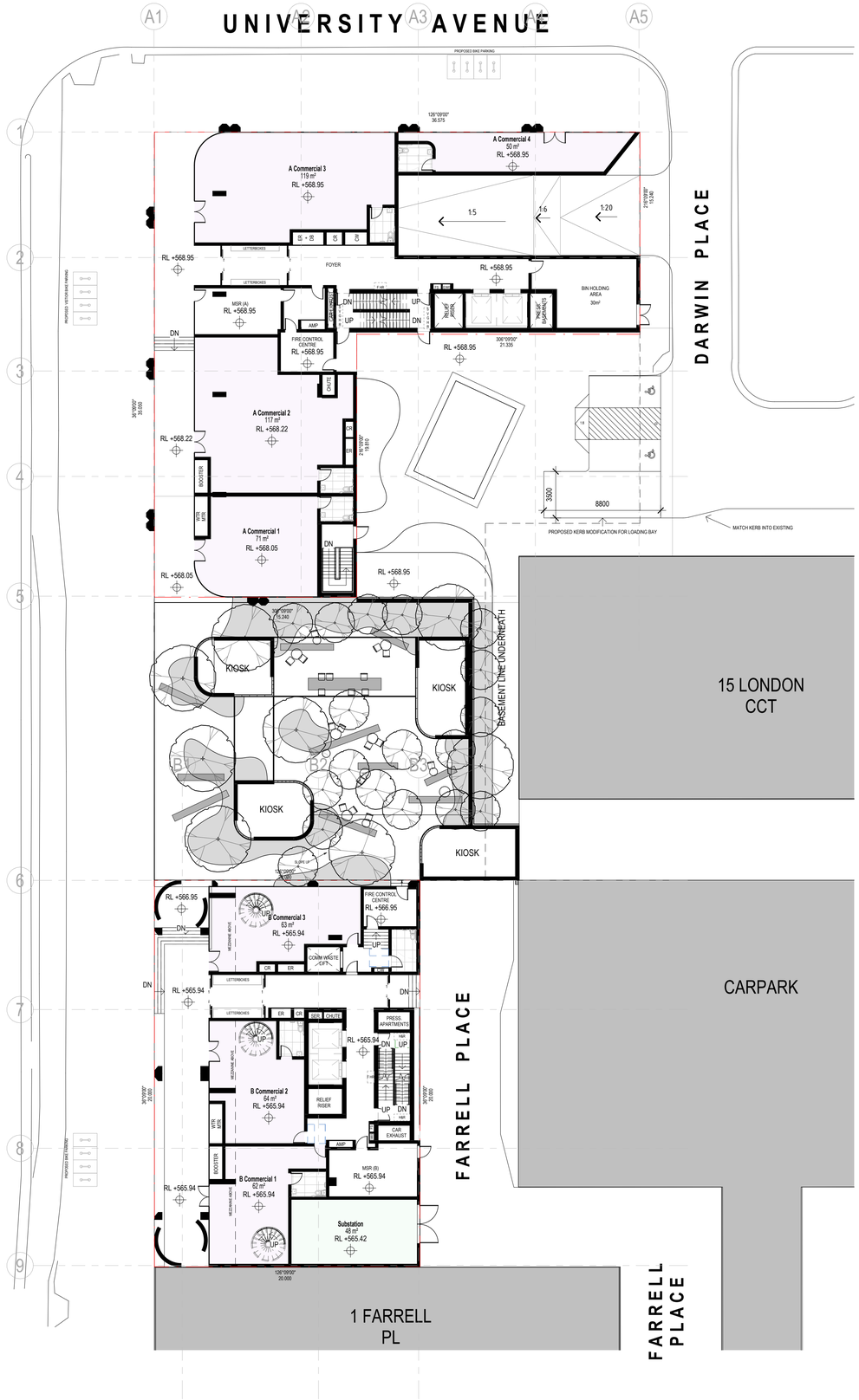
REVISION	ISSUE	CHECKED	DATE

DRAWING LEGEND:

FI - FOR INFORMATION
SK - SCHEMATIC DESIGN
TP - TOWN PLANNING
DD - DESIGN DEVELOPMENT
TI - TENDER ISSUE
MK - MARKETING
BP - BUILDING PERMIT
IFC - ISSUE FOR CONSTRUCTION

ISSUE FOR DA SUBMISSION

TITLE:
BASEMENT 2-1
ADDRESS:
17-21 UNIVERSITY AVENUE, CANBERRA, ACT
CLIENT:
BULUM GROUP
PROJECT NO.
19-007
DRAWN: **SY**
REV:
SCALE: **1 : 200@A1**
SHEET NO.
DA03.02



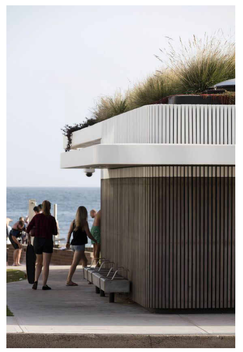
Landscape Plan
Scale: 1:100

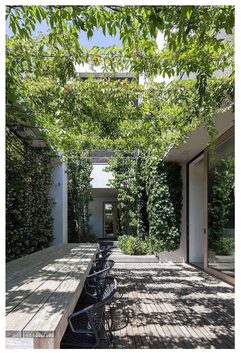
PROPOSED LANDSCAPE PLAN AS PER LANDSCAPE ARCHITECT'S DRAWINGS

MAIN COMMUNAL OPEN SPACE : 511.96M^2 (35.5% OF TOTAL SITE AREA)

SECOND COMMUNAL OPEN SPACE : 316.05M^2

MAIN COMMUNAL OPEN SPACE PLANTING AREA : 122.04M^2 (23.8% OF MAIN COMMUNAL OPEN SPACE AREA)





LANDSCAPE ARCHITECT'S MOOD IMAGES OF KIOSKS

MOOD IMAGE OF SECOND COMMUNAL OPEN SPACE

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REVISION	ISSUE	CHECKED	DATE

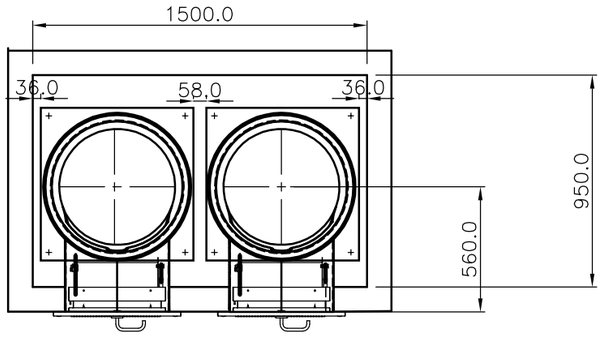
DRAWING LEGEND:

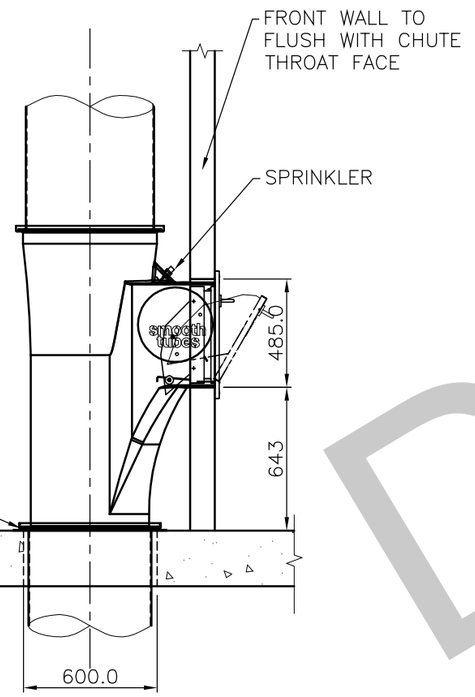
FI - FOR INFORMATION
SK - SCHEMATIC DESIGN
TP - TOWN PLANNING
DD - DESIGN DEVELOPMENT
TI - TENDER ISSUE
MK - MARKETING
BP - BUILDING PERMIT
IFC - ISSUE FOR CONSTRUCTION

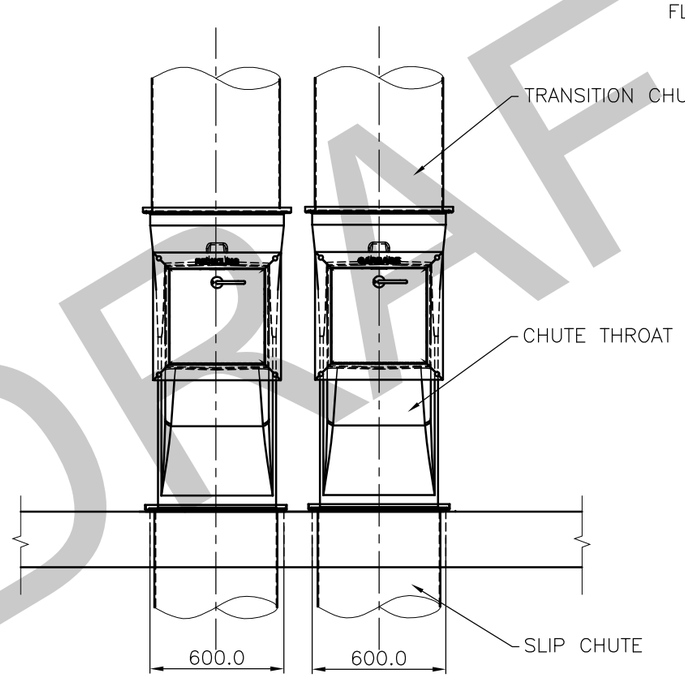
ISSUE FOR DA SUBMISSION

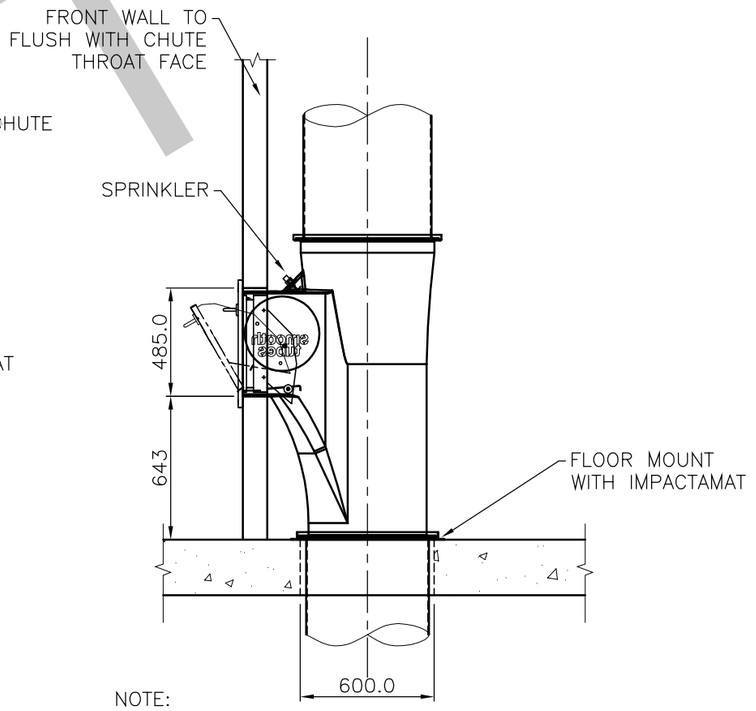
TITLE:
GA_LEVEL GROUND
ADDRESS:
17-21 UNIVERSITY AVENUE, CANBERRA, ACT
CLIENT:
BULUM GROUP
PROJECT NO.
19-007
DRAWN: **SY**
REV:
SCALE: **1 : 200@A1**
SHEET NO.
DA03.03

APPENDIX 2 DUAL CHUTE SYSTEM SPECIFICATIONS









NOTE:

WALLS MUST BE FORMED ACCORDING TO THIS DRAWING.
FINISHED WALL FACE MUST BE FLUSH WITH CHUTE THROAT.
PENETRATION FOR CHUTE DOOR MUST BE AS PER THIS DRAWING.
WASTECH CANNOT MODIFY THE CHUTE THROAT TO SUIT INCORRECT PLACEMENT OF SURROUNDING WALL.

No:	DATE	REVISION	INT.

MATERIAL

QTY: A.S.

UNLESS OTHERWISE SPECIFIED

LINEAR	±0.3	DIMENSIONS IN MILLIMETERS	
ANGULAR	±30'	CHAMFERED EDGES	1X45°
FACES SQUARE WITHIN	0.05/100	MACHINED SURFACES	3.2
FACES PARALLEL WITHIN	0.03/100	DEBURR ALL EDGES	
DIAS CONCENTRIC WITHIN	0.03		

WASTECH ENGINEERING
SPECIALISING IN: DESIGN, MANUFACTURE AND SERVICE OF WASTE DISPOSAL AND RECYCLING EQUIPMENT
33 WEDGEWOOD ROAD, HALLAM, VIC. 3803 PHONE (03) 87871600 FAX (03) 87871650; (03) 87871670

DRN A.H.
CKD S.F.
APP ---
DATE 18-12-2012

TITLE DUAL CHUTE ASSEMBLY
WASTECH ENGINEERING

SCALE D.N.S
VIEWS ---

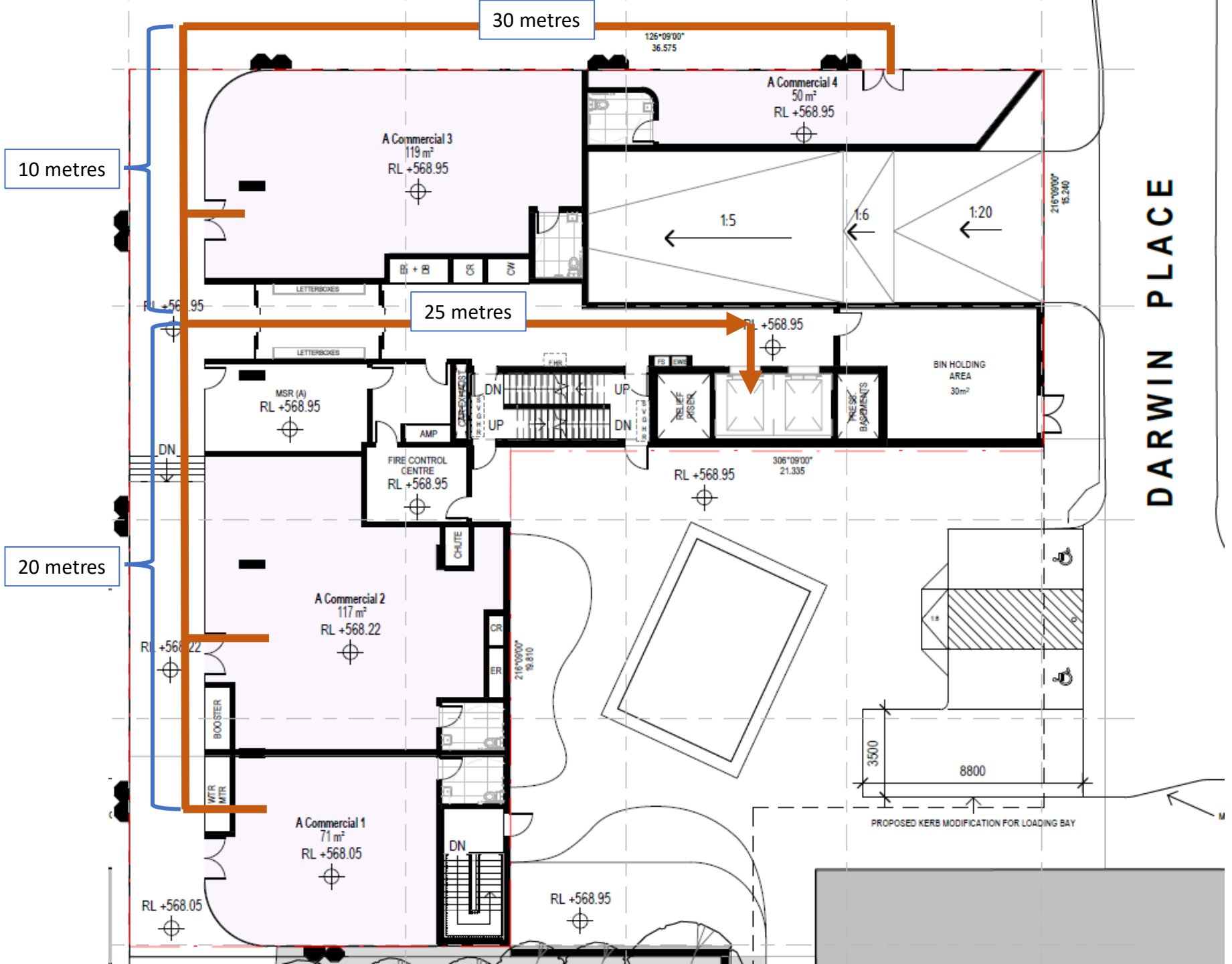
CAD FILE NAME PCT-01-11323

REV. 0

APPENDIX 3 WASTE TRANSFER PATH

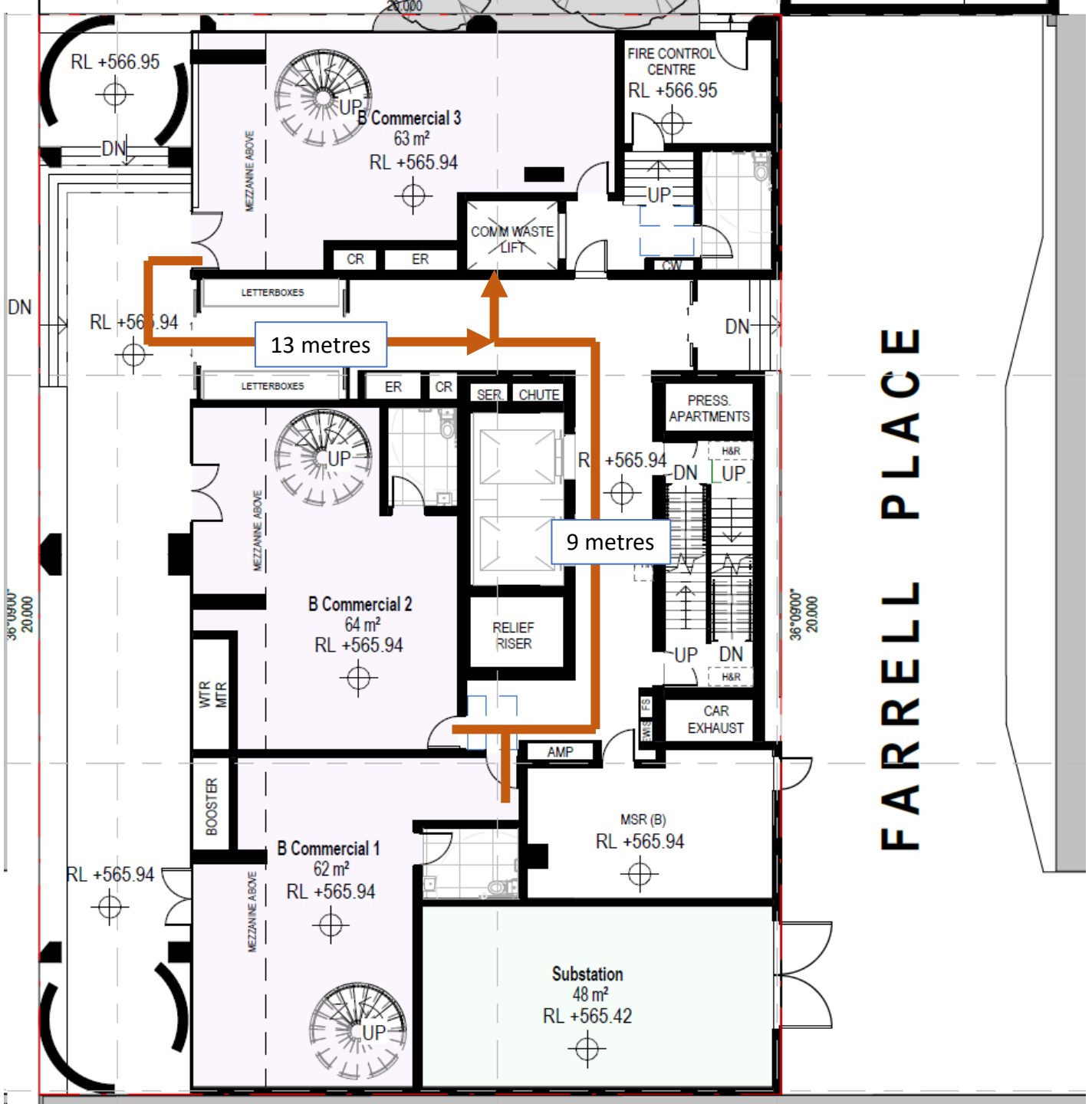
Building A Commercial Waste Transfer Path for Commercial Tenants

Ground Level to Basement Level 2 Commercial Bin Room



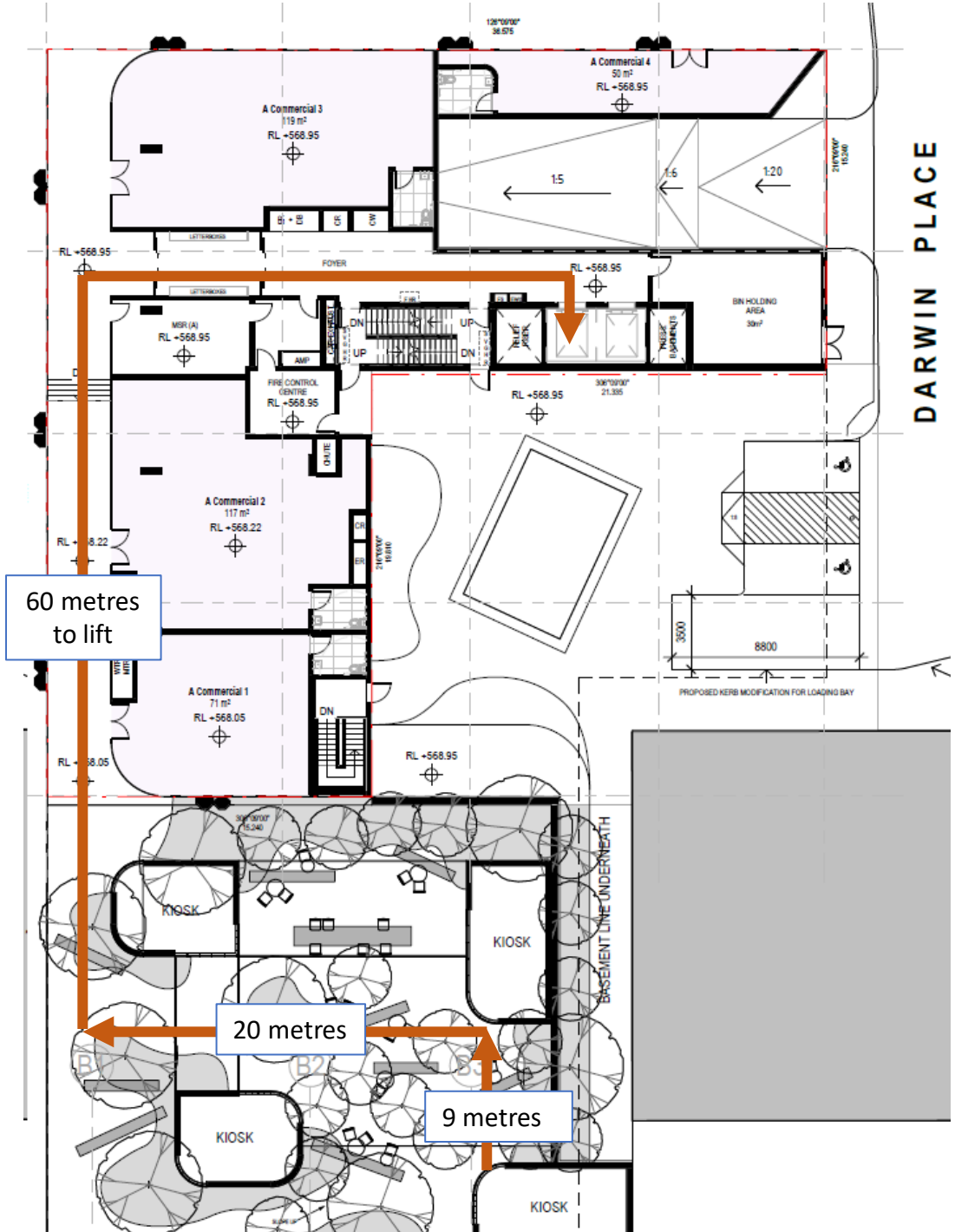
Building B Commercial Waste Transfer Path for Commercial Tenants

Ground Level to Basement Level 2 Commercial Bin Room



Kiosk Waste Transfer Path for Commercial Tenants

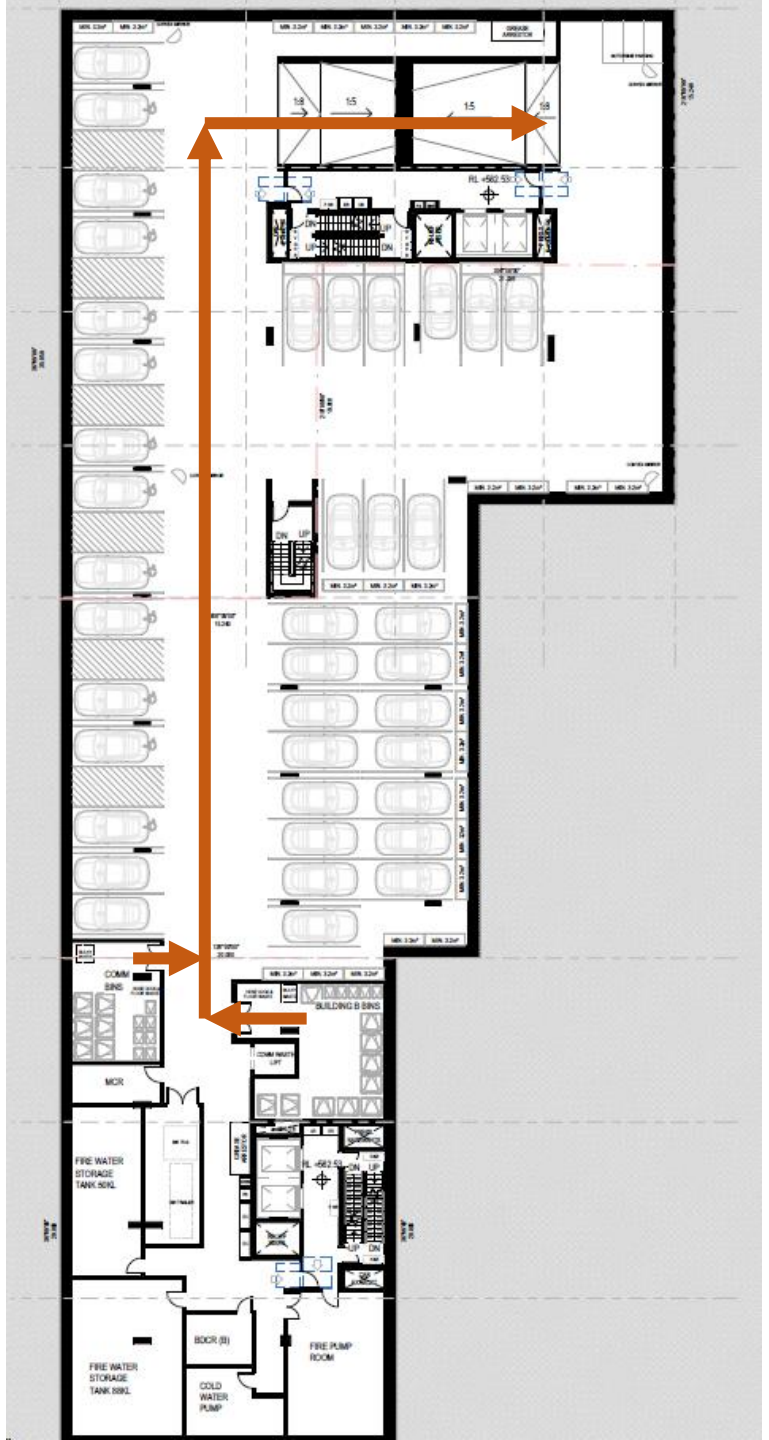
Ground Level to Basement Level 2 Commercial Bin Room



Bin Transfer Path for Building Management
Basement Level 2 Bin Rooms to Ground Level

A bin tug and bin trailer would be used for transfers along the ramp.

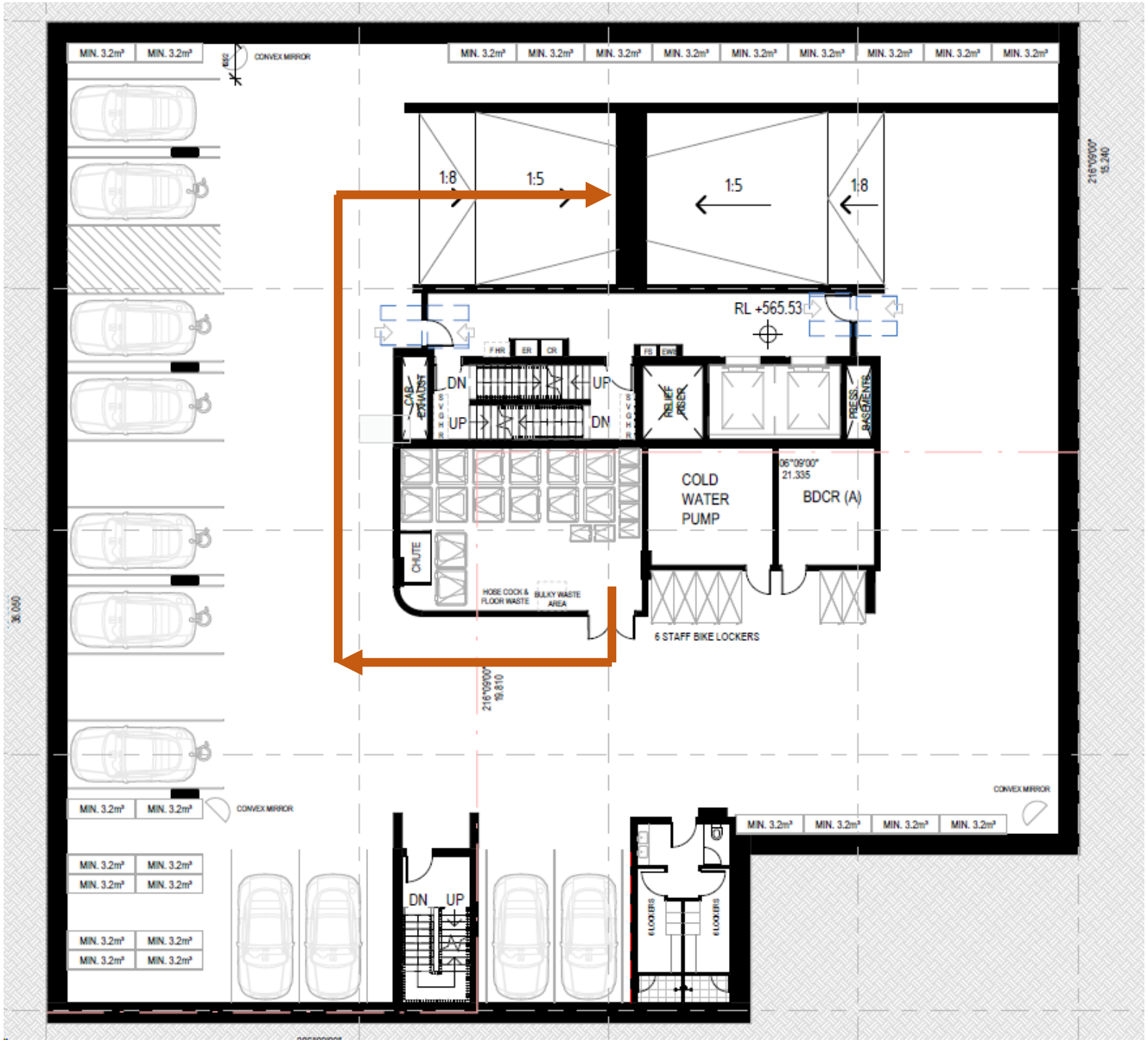
The total transfer distance depicted on the right is 74 metres



Bin Transfer Path for Building Management
Basement Level 1 Bin Room to Ground Level

A bin tug and bin trailer would be used for transfers along the ramp.

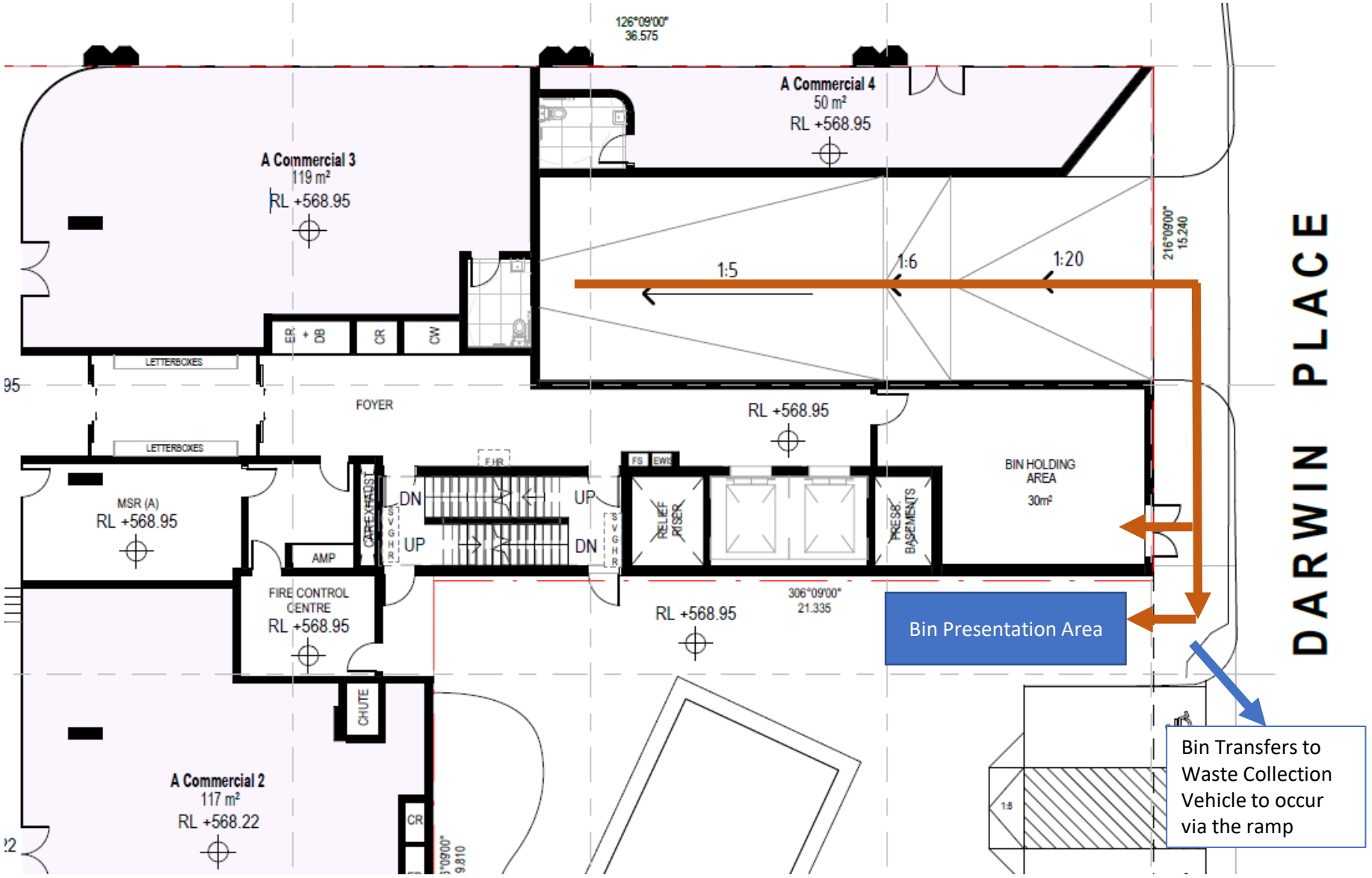
The total transfer distance depicted on the right is 42 metres



Bin Transfer Path for Building Management
Basement Level 1 and 2 Bin Rooms to Ground Level

A bin tug and bin trailer would be used for transfers
along the ramp.

The total transfer distance depicted on the right is 25 metres to the bin holding area and 27 metres to the bin presentation area.



APPENDIX 4 SWEPT PATH ANALYSIS

INBOUND LOADING MOVEMENT

OUTBOUND LOADING MOVEMENT

UNIVERSITY AVENUE

DARWIN PLACE

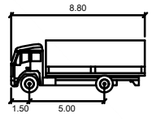
SUBJECT SITE
17-21 UNIVERSITY AVE

PARKING AT SITE FRONTAGE TO BE REMOVED TO ALLOW VEHICULAR ACCESS TO SITE

MEDIUM RIGID VEHICLE SWEPT PATH
(0.6m CLEARANCE SHOWN)

PARKING RESTRICTIONS ALONG EASTERN LEG OF DARWIN PLACE DURING NOMINATED COLLECTION TIMES TO BE REVIEWED

DESIGN VEHICLE



MRV

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

BULUM GROUP

UNIVERSITY AVENUE RESIDENTIAL
17-21 UNIVERSITY AVENUE, CANBERRA
PROPOSED WASTE COLLECTION ARRANGEMENTS

0 1.25 2.5 5
SCALE: 1:250 @ A3

SALT³
Service. Approachability. Loyalty. Transparency.
Email: salt@salt3.com.au
ABN: 18 439 813 274
Ph: 03 9020 4225
Melbourne: Level 3, 51 Queen St Melbourne VIC 3000
Sydney: Coca-Cola Place, Level 17, 40 Mount St North Sydney NSW 2060
Hobart: Level 4, 116 Bathurst St Hobart TAS 7000
Canberra: 45 West Row Canberra ACT 2601

DRAWN / CHECKED	DATE	SIZE
MD / EC	24-10-2023	A3
DRAWING NUMBER		REVISION
SALT-22304-SK-008		7

APPENDIX 5 EXAMPLE BIN TUG

MOVEPAC
BATTERY ELECTRIC TOWING & TRANSPORT

Sales Agent: Spacepac Industries Pty Ltd
PO Box 1468 Auburn St. Wollongong NSW 2500
Contact: 1300 213 010 sales@spacepac.com.au
WWW.ELECTRIC-TUGS.COM.AU

MOTREC

MP 240

A versatile work tool with unlimited configurations.

VEHICLE TYPE
PERSONNEL CARRIERS

The MP-240 is an economic and cost-effective vehicle that can adapt to any industry. It's narrow and maneuverable enough to fit through door openings, but tough enough to withstand years of abuse. It'll move you and your stock three times faster than on foot, quickly boosting operational productivity. Features include under-seat battery compartment, low-step entry, and front and lateral protection bars. Optional lift-out battery box and fold-down back seat. A multi-purpose vehicle offering great value and day-to-day reliability.

UL ANSI

Vehicle shown may have optional accessories and is provided for illustrative purposes only.

MP 240 Models	PASSENGERS	LOAD CAPACITY	TOWING CAPACITY	SPEED	TURNING RADIUS
24V	1	500 lbs.	2,000 lbs.	9 mph	71 "
36V	1	500 lbs.	6,000 lbs.	9 mph	71 "

MOVEPAC
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MOTREC

MP 240

	24V	36V
POWERTRAIN		
Motor	6 hp shunt motor	10 hp shunt motor
Drive Axle	Helical gear differential	Helical gear differential
Transmission	Direct drive	Direct Drive
Controller	SEPEX Electronic speed controller	SEPEX Electronic speed controller
ENERGY		
Voltage	24V	36V
Battery	Four 6V-232AH batteries	Six 6V-232AH batteries
Charger	High-frequency (85-265VAC / 45-65Hz, 1kw), built-in and automatic.	High-frequency (85-265VAC / 45-65Hz, 1kw), built-in and automatic.
CHASSIS		
Body	14-G diamond-plate steel body, tubular frame, powder coating.	14-G diamond-plate steel body, tubular frame, powder coating.
Suspension	Dual coil springs & shock absorbers on front, dual coil springs and shock absorber on rear	Dual coil springs & shock absorbers on front, dual coil springs and shock absorber on rear
Brakes	Dual self-adjusting mechanical drum brakes on rear, hand lever parking brake	Dual self-adjusting mechanical drum brakes on rear, hand lever parking brake
Wheels	4.8x8 LRC pneumatic tires	4.8x8 LRC pneumatic tires
Steering	Handlebar	Handlebar
Seats	Bucket seat on slide adjusters	Bucket seat on slide adjusters
EQUIPMENT		
Lights	LED Headlight, Brakes & Tails	LED Headlight, Brakes & Tails
Indicators	Battery status indicator	Battery status indicator
Accessories	Bolt-on bumpers and rear wheel guards, 24V accessories to equalize cells and extend battery life.	Bolt-on bumpers and rear wheel guards, 24V accessories to equalize cells and extend battery life.
Safety	Reverse alarm, Deadman foot switch, Horn	Reverse alarm, Deadman foot switch, Horn

MOVEPAC
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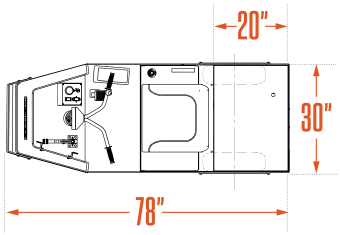
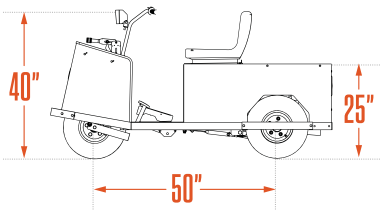
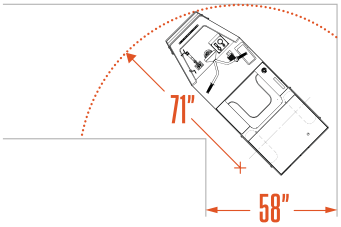
MOTREC

MP 240







	24V	36V
VEHICLE		
Weight	480 lbs.	1,000 lbs.
Height	40"	46"
Length	78"	79"
Width	30"	30"
Wheel Base	50"	57"
DECK		
Deck Height	25"	25"
Deck Length	20"	20"
Deck Width	30"	29"

BUMPERS

Reinforced bolt-on front and rear bumpers

Protects vehicle components from damage and keeps maintenance costs low. Equipped with anchors for easier towing. Bumpers are easy to replace when needed. An easy, low-cost way to protect your investment.

SUSPENSION

Fatigue- and accident-saving ergonomic suspension

Increases stability for a smoother, safer ride even on challenging terrain. Ergonomic design lessens impacts, resulting in greater operator comfort and less risk of injury. Travel of 1.5 inches. Various configurations available.

MOVEPAC
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MOTREC

MP 240

APPENDIX C WASTE MANAGEMENT EQUIPMENT SPECIFICATIONS

APPENDIX C.1 TYPICAL BIN MOVER – BATTERY ELECTRIC

PEDESTRIAN TUG – BIN MOVER

Alitrak AU TT600 – with 2 x 240L Bins

Alitrak AU TT900 – with 2 x 660L Bins

Alitrak AU TT600 – With 4 x 240L Bins

RIDE OR SEAT ON TUG – BIN MOVER

DEC Bull+Canopy and Aluminium Trailer

DEC Bull with Bin Towing Devices

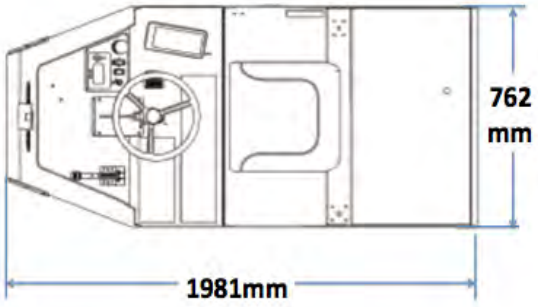
Skatework with Trailer

Cushman Burden Carrier with Trailer

Cushman 5/8K + Bin Towing

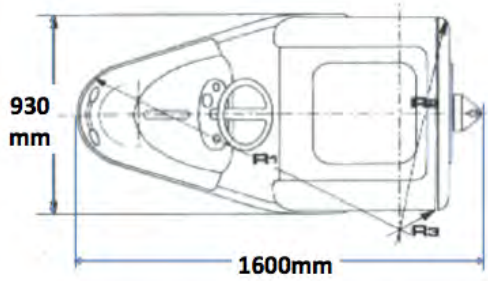
Motrec MP-240 with trailer

APPENDIX B.4 TYPICAL SRV LOADING BAY DIMENSIONS

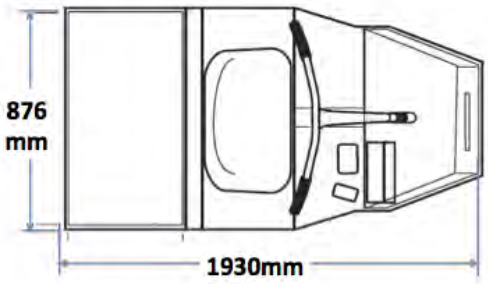


Motrec MP-240

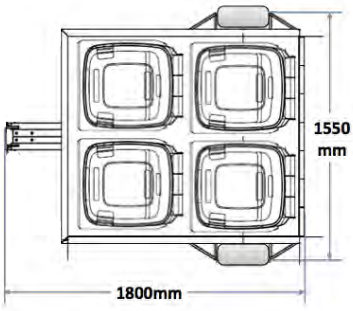
Small Rigid Vehicle (SRV) the SRV represents light trucks to a maximum load capacity of 10 ton and typically having a single rear axle and either single or dual tyres. Typically used in service areas where small commercial vehicles are preferred.



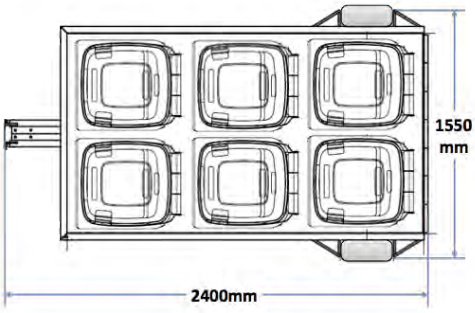
Dec Bull 2/4



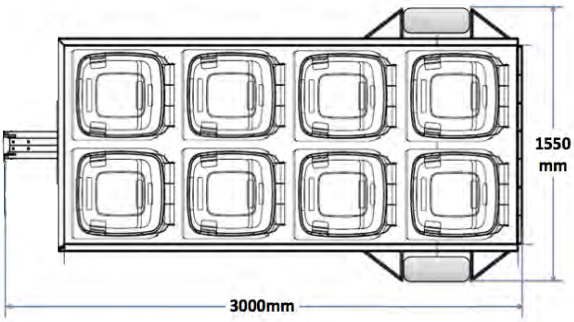
Cushman 8K



Aluminium Trailer – 4 Bins



Aluminium Trailer – 6 Bins



Aluminium Trailer – 8 Bins

APPENDIX 6 OPERATIONAL MANAGEMENT PLAN

MEMO

CLIENT: Bulum Group

FROM: Jasreena Kaur, Senior Environmental Consultant

REVIEWED BY: Tom Bloomfield, Associate Director – Waste & Environment

Project No: 22304W

T: 03 9020 4225

File Path: Y:\2022\22304T - University Avenue Residential\08 Reports\22304WREP01F01_Operational Management Plan.docx
E: jasreena.kaur@salt3.com.au

E: tom.bloomfield@salt3.com.au

SUBJECT: OPERATIONAL MANAGEMENT PLAN FOR WASTE MANAGEMENT IN 17-21 UNIVERSITY AVENUE, CANBERRA

This document details the proposed operational management plan to effectively implement the proposed waste management operational procedures on-site.

It should be noted that this operational plan is a dynamic document which may be amended to accommodate for any situational changes that may only be identified once the site is operational. This may include fluctuations in waste volumes generated on-site,

Employees

It is recommended that the site has at least one waste management personnel which would be a full-time building manager (5 days per week). If required, allowance for a third party to assist with additional services including weekend/public holiday attendance may be considered.

Responsibilities and Duties of Building Manager

Standard day to day tasks for the Building Manager include the following:

- Inspection of chute termination rooms at the start and end of their shift
- Replace bins beneath the chute with an empty bin, once filled to its maximum capacity;
- Rotate bins beneath the chute as per the rotation schedule noted below. These rotations would accommodate for higher weekend disposal rates.
- Transfer all filled waste and recycling bins to the bin holding area and bin presentation area located at ground level, the night before bin collections are scheduled;
- Arrange for regular maintenance and sanitation of the chute systems to be performed;
- Ensure collections of residential recycling bins are scheduled to occur on a separate day to the remaining residential and commercial bins to allow for all bins being collected to be presented within the bin holding area and presentation area along Darwin Place at any one time;
- Place spare bins beneath the chute system when all filled bins are transferred to the main waste room for collections;
- Provide residents with a waste management handbook as part of the welcome pack which would provide information on bin storage areas within the building, waste transfer paths, on-site waste collection timings and location (adjacent to the waste room) and waste management methods onsite;
- Ensure that all bins throughout the site and the bin room are equipped with appropriate signages to guide users on appropriate segregation methods for their waste and recyclables;
- Inspect waste stores and clean as necessary to avoid litter and odours from accumulating;
- Ensure that all bin rooms are inspected regularly and cleaned as necessary to avoid litter and odours accumulating;.
- Conduct bin washing regularly or engage with a third-party bin washing service to perform this task

- Investigating incidents of inappropriate waste storage (or aggregation).
- Review contamination within bins and provide additional signages/information to residents, if deemed necessary to educate residents on appropriate segregation of materials; and
- Provide staff/cleaners with a training session on the appropriate and safe utilisation methods of the bin tug and provide them with a user manual.

Based on the volumes estimated, garbage and recycling bins will be rotated and replaced as per the schedule below. It should be noted that the waste volumes would vary throughout the week with the weekends typically generating higher volumes of waste and recycling in comparison to the weekdays thus the bin rotation schedule may vary slightly from that noted below, to accommodate for the fluctuations in volumes generated through the week.

Table 1 Bin Rotation Schedule Beneath Chute System

Day of the Week / Building	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Building A	Garbage and recycling bins collected in AM Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Garbage bin collected in AM Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute
Building B	Garbage and recycling bins collected in AM Rotate garbage bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Garbage bin collected in AM	Rotate garbage bin beneath chute Rotate recycling bin beneath chute	Rotate garbage bin beneath chute Rotate recycling bin beneath chute

Note: Spare bins will be placed beneath the garbage and recycling chute systems each time the bins from the waste rooms are transferred to the collection point.

A regular bin audit may be conducted by the building manager to assess the sufficiency of the bin provisions and to ensure that the bin rotation schedule is appropriate based on the waste and recycling volumes generated on-site.

Bin Transfer Methods and Safety Measures

A bin tug would be utilised for garbage and recycling bin transfers from the individual waste rooms at basement level 1 and the ground level. The recommended bin tug specifications are provided in SALT's Waste Management Plan. The tug would be utilised along with appropriate hitches to connect the bins and/or a bin trailer, in accordance with the bin tug provider's requirement and advice. Bin transfers will only be conducted during off-peak hours.

In addition to the above, an operating procedure would be implemented to monitor and ensure safe movement of bins through the car park. This may include the utilisation of a spotter at the top or base of the ramp to prevent potential conflict between the bin tug and a resident's vehicle.

All staff that operate the bin tug will have the required training for both safe operation of towing and safe operation of bin movement regarding resident's movements. All bin movements will be conducted during low traffic times. The tug is fitted with lights to ensure that resident vehicles can be made aware of the tug movements and right of way to residents is a priority. Noting that the carpark is for residents only which allows for all to be familiar with the buildings operation and be cautious along with courteous when entering and exiting. As discussed above, residents would be informed of the waste collection schedules and thus would be aware of the timings at which the waste collection vehicle would be occupying the collection area adjacent to the main waste room.

Prevention of Illegal Dumping of Waste and Waste Management Education for Residents

The bulky waste areas will assist with preventing illegal dumping of unwanted goods in the basement and may also allow for recycling of items amongst other residents who may see a use for unwanted goods. Any bulky goods deposited would to be transferred to The Green shed or collected by a private contractor.

The bulky waste collection will generally be an orchestrated event with communications around the event, to encourage swapping of re-useable items and to minimise unnecessary storage and disposal of unwanted items.

Regular waste generation/operation reviews will be conducted in conjunction with the strata committee to encourage better separation of waste and recyclables and minimise waste generation volumes where possible.

MELBOURNE Level 3, 51 Queen Street Melbourne VIC 3000 T: +61 3 9020 4225
SYDNEY Level 6, 201 Kent St Sydney NSW 2000 T: +61 2 9068 7995
HOBART Level 4, 116 Bathurst Street Hobart TAS 7000 T: +61 400 535 634
CANBERRA Level 3, 33-35 Ainslie Pl Canberra ACT 2601 T: +61 2 9068 7995
ADELAIDE Level 21, 25 Grenfell St Adelaide SA 5000 T: +61 8 8484 2331
www.salt3.com.au

APPENDIX 7 DEVELOPMENT CONTROL CODE WRMP FORM

ACT Government
Transport Canberra and City Services

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

PROJECT APPLICATION DETAILS – COVER SHEET

This section of the Waste and Recycling Management Plan must be completed by all applicants when lodging a submission for a Development Application, Design Acceptance, or Operational Acceptance.

Note: The Submission must be complete and include **all the elements for the WRMP** TCCS will not accept incomplete Submissions or Submissions from individual consultants for separate elements of the WRMP. Assessment will not commence until a complete Submission has been received.

SITE DETAILS

Project Title:	17 - 21 University Avenue, Canberra
Description:	Mixed use development containing residential apartments and commercial tenancies

DEVELOPER'S/CLIENT'S DETAILS

Name of entity:	Bulum Group	**Contact Person:**	Nicholas Merriman
Address:	PO Box 5153, Braddon, ACT 2612		
Phone Number:		**E-mail:**	nicholas@bulumgroup.com.au

APPLICANT'S DETAILS

Company name:	Bulum Group	**Contact Person:**	Nicholas Merriman
Address:	PO Box 5153, Braddon, ACT 2612	**Phone Number:**	
Email:	nicholas@bulumgroup.com.au		

LODGEMENT STAGE

Development Application:	◉ **Yes**	◉ **No**	○ **N/A**
Design Acceptance:	○ **Yes**	◉ **No**	◉ **N/A**
Operational Acceptance:	○ **Yes**	◉ **No**	◉ **N/A**

PROJECT DETAILS (CHECK ALL RELEVANT BOXES)

Single Dwelling and Dual Occupancy Dwellings	☐
Multi-unit residential development – individual MGBs with kerbside collection (Section 2.1a)	☐
Multi-unit residential development – shared MGBs with kerbside collection (Section 2.1b)	☐
Multi-unit residential development – bins with on-site collection (Section 2.1c)	☐
Commercial, public and industrial development (Section 2.2)	☐
Mixed-use development (Sections 2.1 and 2.2)	☒
Demolition, Excavation and Construction (Section 3)	☒

ACT Government
Transport Canberra and City Services

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

PROJECT APPLICATION DETAILS – COVER SHEET

The Cover Sheet Checklist provides a brief overview of the Submission. All relevant WRMP forms and associated documentation must also be submitted with this application. The Design Solution will be either Performance-based (Perf) or Deemed-to-Satisfy (DtS) – if a combination of both then select Performance.

CHECKLIST

WASTE MANAGEMENT COMPONENT	DESIGN SOLUTION		COMPLIANT (check one box)			
(DCC Reference)	Perf	DtS	Yes	No	N/A	Office use
Performance solutions approved at Pre-Application stage	☐	☐	☐	☐	☐	☐
Non-standard collection requiring ACT NoWaste approval	☒	☐	☐	☐	☐	☐
Indoor storage spaces for each dwelling	☐	☒	☒	☐	☐	☐
Path of travel from dwelling to waste enclosure or ***designated collection point***	☐	☒	☒	☐	☐	☐
Path of travel from waste enclosure to ***designated collection point***	☒	☐	☐	☐	☐	☐
Facilities and path of travel are ***accessible***	☐	☒	☒	☐	☐	☐
Waste service compartments	☐	☒	☒	☐	☐	☐
Performance of ***chutes***	☐	☒	☒	☐	☐	☐
On-site storage facilities	☐	☒	☒	☐	☐	☐
Compaction equipment – includes ***compactors*** and ***bin compactors***	☐	☐	☐	☐	☒	☐
Ancillary waste equipment – bin lifters, ***carousels*** etc	☐	☒	☒	☐	☐	☐
Loading areas or ***designated collection points***	☒	☐	☐	☐	☐	☐
Unobstructed kerb space at ***designated collection points***	☒	☐	☐	☐	☐	☐
Internal circulation roadways	☐	☒	☒	☐	☐	☐
Swept path clearances – certified by qualified engineer	☐	☒	☒	☐	☐	☐
Vertical and horizontal clearances, including trees	☐	☒	☒	☐	☐	☐
Operations management plan	☐	☒	☒	☐	☐	☐
Mixed use – separation of residential and non-residential	☐	☒	☒	☐	☐	☐
C&D, Excavation – type/volume or tonnage	☐	☒	☒	☐	☐	☐
C&D, Excavation – on-site/off-site management	☐	☒	☒	☐	☐	☐
C&D, Excavation – vehicle access	☐	☒	☒	☐	☐	☐
Supporting drawings and documentation	☐	☒	☒	☐	☐	☐
Submission requirements addressed	☐	☒	☒	☐	☐	☐
Work As Executed records (Operational Acceptance)	☐	☐	☐	☐	☒	☐

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(A) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY INDIVIDUAL MGBS COLLECTED AT KERBSIDE)

Controls for these developments are included in Part 3.2.5 and Part 3.5 of the DCC. Submission requirements are stated in Part 3.5.4. Where appropriate, provide plans showing details to support the application.

This section applies to the following:

- *Development applications for new multi-unit residential developments*
- *Development applications for alterations or additions to existing multi-unit residential developments if there is an effect on the provision of waste and recycling services*
- *Development applications for new mixed-use developments that include multi-unit residential developments.*

STORAGE FACILITIES

CONTROL C1 OF DCC – INDOOR WASTE AND RECYCLING STORAGE SPACE

Location and dimensions of indoor waste and recycling storage space for each dwelling type
*(Provide tabulated calculations of the total waste and recycling generated per week as per Table **A4.2**)*

Description	
Drawing Reference Numbers	

Development satisfies control C1 of the DCC: ☐ **Yes** ☐ **No**

CONTROL C2 – EXTERNAL WASTE, RECYCLING AND GREEN WASTE STORAGE AREA

Location and dimensions of waste, recycling and green waste storage area
*(Refer to **Table 3.3** for mandatory submission requirements. Use Tables **A4.5** and **A4.5** to calculate waste and recycling storage requirements for the development. Refer to **A4.3** and the City Services website for green waste storage requirements, if applicable for this development)*

Description	

Development satisfies control C2 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(A) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY INDIVIDUAL MGBS COLLECTED AT KERBSIDE)

PATH OF TRAVEL

CONTROL C3 – ACCESSIBLE PATH OF TRAVEL

Path of travel for moving bins from the *waste, recycling* and *green waste storage area* to the *designated collection point*.

*(Refer to **R2.3** of **Table 3.3** for mandatory submission requirements)*

Description	
Drawing Reference Numbers	

Development satisfies control C3 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

DESIGNATED COLLECTION POINT

CONTROL C4 AND C5 – DESIGNATED COLLECTION POINT (KERBSIDE)

Location of designated collection point (kerbside), including dimensions of available kerb frontage and indicative presentation layout of MGBs on kerbside

*(Refer to **R2.4** of **Table 3.3** for mandatory submission requirements)*

Description	N/A
Drawing Reference Numbers	

Development satisfies control C4 and C5 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

COMPLETE IF DEVELOPMENT IS PART OF A MIXED-USE DEVELOPMENT ONLY

CONTROL C23 (PART 5.3) – SEPARATION OF RESIDENTIAL AND NON-RESIDENTIAL WASTE

Identify how *residential* and non-residential waste and recycling will be kept separate and methods to minimise the potential for commercial tenants to use *residential waste* and recycling bins

*(Refer to **R4** of **Table 5.2** for mandatory submission requirements)*.

Description	Residential and commercial waste will be stored in separate waste rooms at basement level 1.
Drawing Reference Numbers	

Development satisfies control C23 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter* to provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(b) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY SHARED MGBs COLLECTED AT KERBSIDE)

Controls for these developments are included in Part 3.2.4 and Part 3.6 of the DCC. Submission requirements are stated in Part 3.6.4. Where appropriate, provide plans showing details to support the application.

This section applies to the following:

- *Development applications for new multi-unit residential developments*
- *Development applications for alterations or additions to existing multi-unit residential developments if there is an effect on the provision of waste and recycling services*
- *Development applications for new mixed-use developments that include multi-unit residential developments.*

STORAGE FACILITIES

CONTROL C1 – INDOOR WASTE AND RECYCLING STORAGE SPACE

Generation of waste and recycling for each dwelling type

*(Provide tabulated calculations per dwelling type per week, as per **Table A4.2**)*

Description	Please refer to section 7.2 and 8.2 of the Waste Management Plan
Drawing Reference Numbers	Please refer to Appendix 1 of the Waste Management Plan/ Refer to DA03.04 to DA03.10

Development satisfies control C1 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

CONTROL C6 – EXTERNAL WASTE AND RECYCLING STORAGE FACILITY

Location and dimensions of *waste and recycling storage facility or mini-enclosure*

*(Refer to **Table 3.3** for mandatory submission requirements. Use Tables **A4.5** and **A4.5** to calculate waste and recycling storage requirements for the development. Refer to **A4.3** and the City Services website for green waste storage requirements, if applicable to this development)*

Description	Refer to calculations in sections 7 and 8 of the Waste Management Plan prepared by SALT.
	Please refer to Appendix 1 of the Waste Management Plan/ Refer to DA03.02

Development satisfies control C6 of the DCC: ☐ **Yes** ☐ **No**

Development satisfies Part 7.2.3 or 7.2.4 or both of the DCC ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

PATH OF TRAVEL

CONTROL C7 – ACCESSIBLE PATH OF TRAVEL

Accessible path of travel for carrying waste and recyclables and for moving bins between the *waste and recycling storage facility* or *minienclosure* and: (i) the entrance of each dwelling; and (ii) the *designated collection point*
*(Refer to **Table 3.5** for mandatory submission requirements)*

Description	Please refer to the path of travel shown in Appendix 3 of SALT's Waste Management Plan. A bin tug is proposed to assist with bin transfers and minimise occupational health and safety risks.
Drawing Reference Numbers	Appendix 3 of SALT's Waste Management Plan

Development satisfies control C1 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

OPERATIONS MANAGEMENT PLAN

CONTROL C8 – OPERATIONS MANAGEMENT PLAN

Description of the process to present bins for collection and to return bins to the waste and recycling storage facilities. Include documentation to be presented to the *owners corporation.*

Description	Please refer to Appendix 6 of SALT's Waste Management Plan

Development satisfies control C8 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(b) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY SHARED MGBs COLLECTED AT KERBSIDE)

COLLECTION POINT

CONTROL C9 AND C10 – DESIGNATED COLLECTION POINT (KERBSIDE)

Location of *designated collection point (kerbside)*, including dimensions of available kerb frontage and indicative presentation layout of MGBs on kerbside

Description	Please refer to Section 9 of the Waste Management Plan. Bins will be presented within the bin holding area and where required, along the kerb at Darwin Place
Drawing Reference Numbers	

Development satisfies control C9 and C10 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

Waste collections are to occur via a private contractor as the Territory's collection vehicle size is not able to access the site or Darwin Place to conduct either on-street or on-site collections.

COMPLETE IF DEVELOPMENT IS PART OF A MIXED-USE DEVELOPMENT ONLY

CONTROL C23 (PART 5.3) – SEPARATION OF RESIDENTIAL AND NON-RESIDENTIAL WASTE

Identify how *residential* and non-residential waste and recycling will be kept separate and methods to minimise the potential for commercial tenants to use *residential* waste and recycling bins

Description	Residential and commercial waste will be stored in separate waste rooms at basement level 1.

Development satisfies control C23 of the DCC: ☑ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(C) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY WASTE HOPPERS AND SHARED RECYCLING MGBS, OR WASTE AND RECYCLING HOPPERS COLLECTED WITHIN THE PROPERTY BOUNDARY)

Controls for these developments are included in Part 3.2.4 and Part 3.7 of the DCC. Submission requirements are stated in Part 3.7.4. Where appropriate, provide plans showing details to support the application.

This section applies to the following:

- *Development applications for new multi-unit residential developments*
- *Development applications for alterations or additions to existing multi-unit residential developments if there is an effect on the provision of waste and recycling services*
- *Development applications for new mixed-use developments that include multi-unit residential developments.*

STORAGE FACILITIES

CONTROL C1 – INDOOR WASTE AND RECYCLING SPACE

Generation of waste and recycling for each dwelling type

*(Provide tabulated calculations per dwelling type per week, as per **Table A4.2**)*

Description	
Drawing Reference Numbers	

Development satisfies control C1 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

CONTROL C11 – EXTERNAL WASTE AND RECYCLING STORAGE FACILITIES

Location and dimensions of external waste and recycling storage facilities

*(Provide calculations to demonstrate adequacy of space, including dimensions, cross-sections and height of the waste and recycling storage facility. Refer to Table 3.8 for mandatory submission requirements. Use Tables **A4.5** and **A4.5** to calculate waste and recycling storage requirements for the development)*

Description	
Drawing Reference Numbers	

Development satisfies control C11 of the DCC: ☐ **Yes** ☐ **No**

Development satisfies Part 7.2.3 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

How will waste be transferred from each dwelling to external storage area?

Description	
Drawing Reference Numbers	

PATH OF TRAVEL

CONTROL C12 – ACCESSIBLE PATH OF TRAVEL

Accessible path of travel for carrying waste and recyclables and for moving bins between the waste and recycling storage facilities or waste service compartments and: (a) the entrance to each dwelling; and (b) the *designated collection point*

*(Provide plan of travelling distance, clearance and gradients. Refer to **Table 3.8** for mandatory submission requirements)*

Description	
Drawing Reference Numbers	

Development satisfies control C12 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(C) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY WASTE HOPPERS AND SHARED RECYCLING MGBS, OR WASTE AND RECYCLING HOPPERS COLLECTED WITHIN THE PROPERTY BOUNDARY)

MULTI-UNIT DEVELOPMENTS – WASTE AND RECYCLING CHUTES, COMPACTION EQUIPMENT ETC OMPLETE EITHER CONTROL C13 OR C14 OR C15

CONTROL C13 – CONVENIENT ACCESS TO WASTE SERVICES – 3 RESIDENTIAL FLOORS OR LESS

Location and details of any waste service compartments and other waste and recycling equipment that form part of the waste management system

*(Provide calculations to demonstrate adequacy of space. Refer to **Table 3.8** for mandatory submission requirements)*

Description	
Drawing Reference Numbers	

Development satisfies control C13 of the DCC: ☐ **Yes** ☐ **No**

Development satisfies Part 7.3 of the DCC: ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

CONVENIENT ACCESS (CONTINUED) – COMPLETE EITHER CONTROL C13 OR C14 OR C15

CONTROL C14 – CONVENIENT ACCESS – 4 RESIDENTIAL FLOORS AND ABOVE

Location and details of any waste service compartments and other waste and recycling equipment that form part of the waste management system

*(Provide calculations to demonstrate adequacy of equipment. Refer to **Table 3.8** for mandatory submission requirements)*

Description	Refer to attached Waste Management Plan for calculations and details of waste and recycling equipment.
Drawing Reference Numbers	DA03.02

Location and details of any waste and *recycling chutes*

*(Provide calculations to demonstrate adequacy of equipment. Refer to **Table 3.8** for mandatory submission requirements)*

Description	Residential chute systems are provided adjacent to the lift core on each residential level
Drawing Reference Numbers	DA03.04 onwards

Development satisfies control C14 of the DCC: ☒ **Yes** ☐ **No**

Development satisfies Part 7.3 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

COLLECTION POINT

CONTROL C15 – DESIGNATED COLLECTION POINTS

Location of *designated collection points or hopper pads*
*(Refer to **Table 3.8** for mandatory submission requirements)*

Description	
Drawing Reference Numbers	

Development satisfies control C15 of the DCC**:** ☐ **Yes** ☐ **No**

Development satisfies Part 7.2.3 or 7.4 or both**:** ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

VEHICULAR ACCESS

CONTROL C16 – UNOBSTRUCTED ACCESS TO DESIGNATED COLLECTION POINTS

Path of travel for collection vehicles (if collection occurs on site)
*(Provide details of travelling distance; clearance in all directions; loading heights and widths; and turning and manoeuvring paths, ramp access, clearances, gradients and pavement details including compliance with **AS2890.1-2004**. Refer to **Table 3.8** for mandatory submission requirements)*

Description	
Drawing Reference Numbers	

Development satisfies control C16 of the DCC ☐ **Yes** ☐ **No**

Development satisfies Appendix 7 of the DCC**:** ☐ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 2 – DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.1(c) – MULTI-UNIT RESIDENTIAL DEVELOPMENT (SERVICED BY WASTE HOPPERS AND SHARED RECYCLING MGBs, OR WASTE AND RECYCLING HOPPERS COLLECTED WITHIN THE PROPERTY BOUNDARY)

COMPLETE IF DEVELOPMENT IS PART OF A MIXED-USE DEVELOPMENT ONLY

CONTROL C23 (PART 5.3) – SEPARATION OF RESIDENTIAL AND NON-RESIDENTIAL WASTE

Identify how residential and non-residential waste and recycling will be kept separate and methods to minimise the potential for commercial tenants to use *residential* waste and *recycling bins*

*(Refer to **R4** of **Table 5.2** for mandatory submission requirements)*

Description	Residential and commercial waste will be stored in separate waste rooms at basement level 1.
Drawing Reference Numbers	

Development satisfies control C23 of the DCC: ☑ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.2 – COMMERCIAL, PUBLIC AND INDUSTRIAL DEVELOPMENTS

Controls for these developments are included in Part 4 of the DCC. Submission requirements are stated in Part 4.4. Where appropriate, provide details on plans to support your application.

- *Development applications for new commercial, public or industrial developments*
- *Development applications for alterations or additions to existing commercial, public or industrial development if there is an effect on the provision of waste and recycling management*
- *Development applications for new mixed-use developments involving commercial, public or industrial development.*

WASTE AND RECYCLING GENERATION

CONTROL C17 – WASTE AND RECYCLING GENERATION

Waste and recycling generated by each proposed activity within the development, including quantities, bin types and storage requirements

DESCRIPTION						
Premises Type	Floor Area (m2)	Generation Rate		Waste (L/ week)	Recycling (L/week)	Number of Bins and Sizes
		Waste	Recycling			

In completing this table, refer to Appendix 5 – Waste and Recycling Generation Rates for Commercial, Public and Industrial Developments

Development satisfies Appendix 4, if includes *residential* component ☒ **Yes** ☐ **No** ☐ **N/A**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

Please refer to sections 7.1 and 8.1 of the Waste Management Plan for the calculations

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

DESIGN AND OPERATION OF WASTE AND RECYCLING

SECTION 2.2 – COMMERCIAL, PUBLIC AND INDUSTRIAL DEVELOPMENTS

WASTE AND RECYCLING STORAGE FACILITIES

CONTROL C17 AND C18 – EXTERNAL WASTE AND RECYCLING STORAGE FACILITIES

Location of *individual waste and recycling storage facilities* (C18) including any *waste and recycling storage sections* (C17) and refrigerated waste storage for the entire development

*(Provide calculations to demonstrate adequacy of space. Refer to **Table 4.2** for mandatory submission requirements)*

Description	Please refer to section 8.2 of the Waste Management Plan
Drawing Reference Numbers	DA03.03

Development satisfies control C17 and C18 of the DCC: ☒ **Yes** ☐ **No**

Development satisfies Appendix 5 of the DCC: ☒ **Yes** ☐ **No**

Development satisfies Part 7.2.3 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

PATH OF TRAVEL

CONTROL C19 – ACCESSIBLE PATH OF TRAVEL

Accessible path of travel from the point of origin or *holding area* to the *waste and recycling storage facilities*

*(Provide details of clearances, gradients and mitigation of odour and noise impacts. Refer to **Table 4.2** for mandatory submission requirements)*

Description	Commercial tenants are able to access the bin room via the bin lifts provided from ground level. Please refer to Appendix 3 for reference
Drawing Reference Numbers	DA03.03 and DA03.02

Development satisfies control C19 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

DESIGNATED COLLECTION POINT

CONTROL C20 – DESIGNATED COLLECTION POINT

Location of *designated collection points* or *hopper pads* or both

*(Refer to **Table 4.2** for mandatory submission requirements)*

Description	Waste collections are to occur adjacent to the designated bin presentation area along Darwin Place
Drawing Reference Numbers	

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

Given the spatial constraints of the site, it is not possible to accommodate for on-site collections to be conducted by an 8.8 medium rigid vehicle, at minimum. Therefore, it is proposed that collections occur along Darwin Place as per the current practice for the site.

Path of travel for moving bins from waste and recycling storage facilities to the designated collection point

*(Provide plan of travelling distance, clearance and gradients. Refer to **Table 4.2** for mandatory submission requirements)*

Description	Bins will be transferred via the bin lifts provided. Please refer to Appendix 3 for reference.
Drawing Reference Numbers	DA03.03 and DA03.02

Path of travel for collection vehicles (if collection occurs on site)

(Provide details of travelling distance, clearance, turning and manoeuvring paths, ramp access and pavement details to demonstrate compliance with TCCS Design Standards of Urban Infrastructure and the DCC)

Description	
Drawing Reference Numbers	

Development satisfies control C20 of the DCC: ☒ **Yes** ☐ **No**

Development satisfies Appendix 7 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE CHUTES, COMPACTION OR OTHER EQUIPMENT

CONTROL C18 – WASTE CHUTES, COMPACTION OR OTHER EQUIPMENT

Location and details of any *waste chutes*

*(Provide calculations to demonstrate adequacy of equipment. Refer to **Table 4.2** for mandatory submission requirements)*

Description	N/A
Drawing Reference Numbers	

Location and details of any waste and recycling service lifts

(Provide calculations to demonstrate adequacy of equipment)

Description	Bin lifts have been shown on the plans. The bin lifts would be used for bin transfers from basement level 1 to ground level and for commercial waste transfers from ground level to basement level 1.
Drawing Reference Numbers	

Location and details of any waste compaction equipment

*(Provide calculations to demonstrate adequacy of equipment. Refer to **Table 4.2,** in particular **R2.7** and **R2.8,** for mandatory submission requirements)*

Description	N/A
Drawing Reference Numbers	

Development satisfies control C18 of the DCC: ☒ **Yes** ☐ **No**

Development satisfies Appendix 7.3 of the DCC: ✔ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 3 – DEMOLITION, EXCAVATION AND CONSTRUCTION

Requirements for these developments are included in Part 6 of the DCC. Submission requirements are stated in Part 6.6 of the DCC. Where appropriate, provide details on plans to support your application.

Note: A WRMP is ***not*** required unless the proposed demolition or excavation activities generate more than 20m^3 of waste for the whole development.

This section applies to the following:

- *Demolition – All Development applications involving demolition where the quantity of demolition material will be greater than 20m^3 for the whole development*
- *Excavation – All Development applications involving excavation where the quantity of excavated material will be greater than 20m^3 for the whole development*
- *Development applications for new mixed-use developments that include multi-unit residential developments.*

WASTE TYPES AND QUANTITIES

CONTROL C24 – DEMOLITION, EXCAVATION AND CONSTRUCTION WASTE TYPES AND QUANTITIES

Specify demolition, excavation and construction waste materials by type and volume or tonnage

*This information can be shown in **Table 3.1** (Demolition Waste) or **Table 3.2** (Construction Waste) or both which can be found over leaf. Refer to **Table 6.2** for mandatory submission requirements.*

Description	Please refer to Sections 4, 5 and 6 of the Waste Management Plan

ON-SITE MANAGEMENT OF DEMOLITION, EXCAVATION AND CONSTRUCTION WASTE

CONTROL C25 – ON-SITE MANAGEMENT OF WASTE

Nominate on-site sorting and storage areas for demolition, excavation and construction waste materials. Show these details on a draft site plan

*(Refer to **Table 6.2** for mandatory submission requirements)*

Description	Please refer to Sections 4, 5 and 6 of the Waste Management Plan
Drawing Reference Numbers	Please refer to Figure 1 of the Waste Management Plan

Describe the work method, practices and specific procedures to be adopted to maximise the reuse and recycling of waste materials

*(Refer to **Table 6.2,** in particular **R2.2,** for mandatory submission requirements)*

Description	Please refer to the tables in Sections 5 and 6 of the Waste Management Plan

WASTE & RECYCLING MANAGEMENT PLAN FORM FOR APPLICANTS

SECTION 3 – DEMOLITION, EXCAVATION AND CONSTRUCTION

Identify access for demolition and construction waste collection vehicles

*(Refer to **Table 6.2** for mandatory submission requirements)*

Description	Access would be along University Avenue or Darwin Place hence please refer to the swept paths attached in Appendix 4 of the Waste Management Plan
Drawing Reference Numbers	

Details of waste or recycling storage containers, or both, to be stored outside leased boundaries

(Separate approval is required from Public Land Use, City Services (via Access Canberra Phone 132 881)

Description	
Drawing Reference Numbers	

Development satisfies control C25 of the DCC: ☒ **Yes** ☐ **No**

Provide details if DCC requirements are not satisfied, and proposed alternatives that will not impact on the ability of the *waste transporter to* provide the service:

RESUSE AND RECYCLING OF DEMOLITION, EXCAVATION AND CONSTRUCTION WASTE

CONTROL C18 – WASTE CHUTES, COMPACTION OR OTHER EQUIPMENT

Details of reuse and recycling potential (on-site or off-site, or both) for demolition, excavation and construction waste

Description

*This information can be shown in **Table 3.1** (Demolition Waste) or **Table 3.2,** or both (Construction Waste) .*
***Tables 3.1** and **3.2** are over leaf.*

Please refer to Sections 4, 5 and 6 of the Waste Management Plan

Drawing Reference Numbers	

Name and location of approved licensed sites for recycling, or reprocessing, or landfill, or all of these, for the disposal of demolition, excavation and construction waste materials

Description

*This information can be shown on **Table 3.1** (Demolition Waste) or **Table 3.2,** or both (Construction Waste) .*
***Tables 3.1** and **3.2** are over leaf.*

Please refer to Sections 5 and 6 of the Waste Management Plan

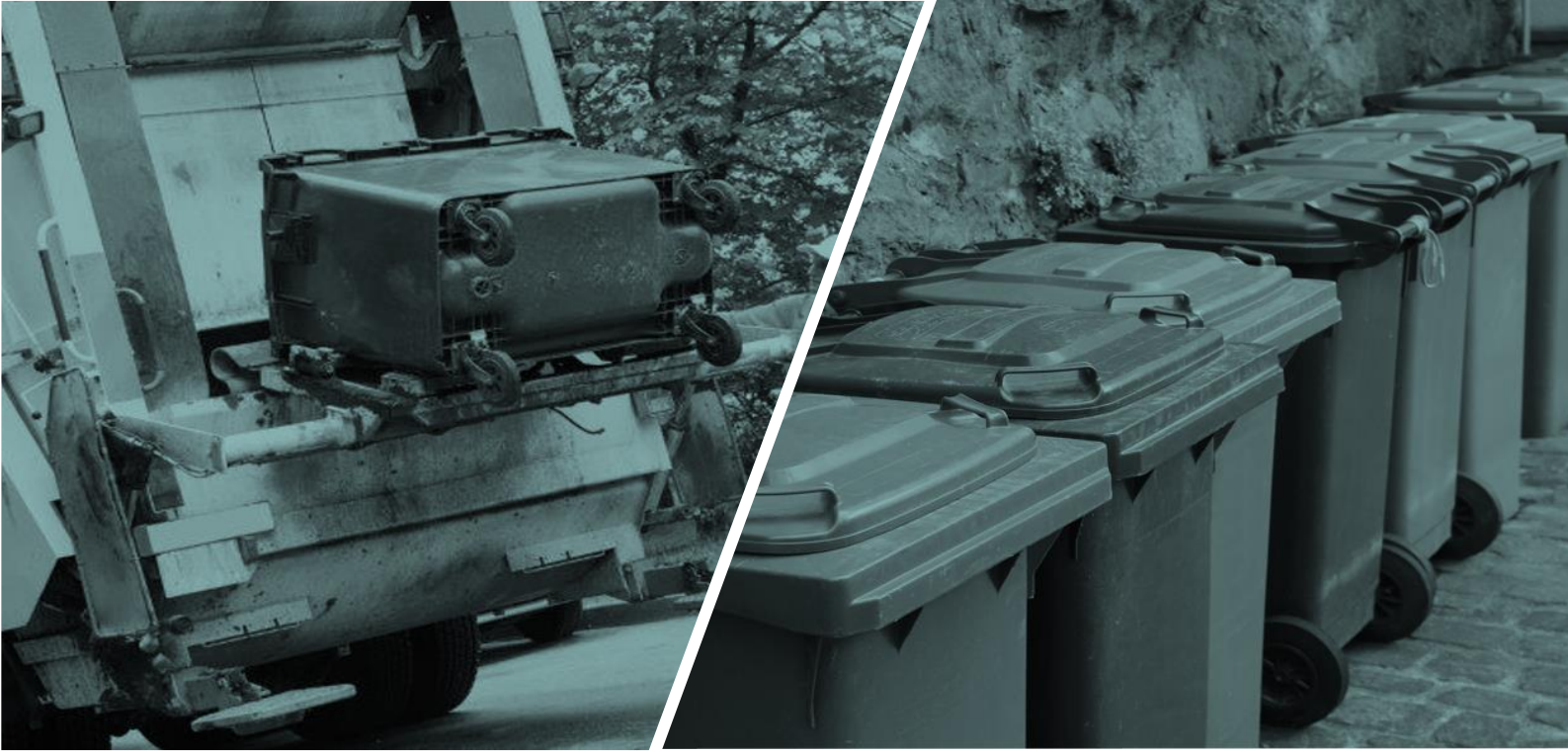
Development satisfies control C25 of the DCC: ☒ **Yes** ☐ **No**

TABLE 3.1 – DEMOLITION WASTE

					ON-SITE					OFF-SITE					DISPOSAL AT LANDFILL				
Type of Material Generated	**Estimated**		**Actual (to be provided at WAE)**		**Proposed Reuse and Recycling On-site**	**Estimated**		**Actual (to be provided at WAE)**		**Name of Receiving Recycling Outlets or Reuse Sites or Both**	**Estimated**		**Actual (to be provided at WAE)**		**Name of Landfill Site**	**Estimated**		**Actual (to be provided at WAE)**	
	Vol (m^3)	**Wt (T)**	**Vol (m^3)**	**Wt (T)**		**Vol (m^3)**	**Wt (T)**	**Vol (m^3)**	**Wt (T)**		**Vol (m^3)**	**Wt (T)**	**Vol (m^3)**	**Wt (T)**		**Vol (m^3)**	**Wt (T)**	**Vol (m^3)**	**Wt (T)**
Excavation Material																			
Bricks		944			ACT Recycling, 499 Mu		94.4			ACT Recycling, 499 Mu		849.8							
Concrete		1172					117.2					1054.8							
Timber (specify)		32										28.5					3.2		
Plasterboard/Gyprock																			
Metals (specify)		13										11.7					1.3		
Cardboard																			
Plastics																			
Mixed Waste																			
Other (specify)		85										76.5					8.5		
Total		2246																	
Percentage of Total		100					9					90					1		

TABLE 3.2 – CONSTRUCTION WASTE

					ON-SITE					OFF-SITE					DISPOSAL AT LANDFILL				
Type of Material Generated	**Estimated**		**Actual (to be provided at WAE)**		**Proposed Reuse and Recycling On-site**	**Estimated**		**Actual (to be provided at WAE)**		**Name of Receiving Recycling Outlets or Reuse Sites or Both**	**Estimated**		**Actual (to be provided at WAE)**		**Name of Landfill Site**	**Estimated**		**Actual (to be provided at WAE)**	
	Vol (m^3)	**Wt (T)**	**Vol (m^3)**	**Wt (T)**		**Vol (m^3)**	**Wt (T)**	**Vol (m^3)**	**Wt (T)**		**Vol (m^3)**	**Wt (T)**	**Vol (m^3)**	**Wt (T)**		**Vol (m^3)**	**Wt (T)**	**Vol (m^3)**	**Wt (T)**
Excavation Material	567.6				ACT Recycling, 499 Mu					ACT Recycling, 499 Mu		425.7					141.9		
Bricks	63.3						15.8					47.5							
Concrete	132.5						33.1					99.4							
Timber (specify)	13.9						3.5					10.4							
Plasterboard/Gyprock	25.7											19.3					6.4		
Metals (specify)	25.7											19.3					6.4		
Cardboard																			
Plastics																			
Mixed Waste																			
Other (specify)	11.8											8.9					2.9		
Total	840.5						52.4					630.5					157.6		
Percentage of Total	100						6					75					19		



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MELBOURNE Level 3, 51 Queen Street Melbourne VIC 3000
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+61 400 535 634

CANBERRA Level 3, 33–35 Ainslie Pl Canberra ACT 2601
+61 2 9068 7995

ADELAIDE Level 21, 25 Grenfell St Adelaide SA 5000
+61 8 8484 2331

www.salt3.com.au