

Waste Management Plan

88 Mill Point Road, South Perth

Prepared for Southlink Investment Properties Pty Ltd trading as Peakstone

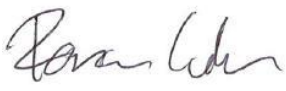
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Project Number: TW20132

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Approval for Release

Name	Position	File Reference
Ronan Cullen	Director and Waste Management Section Leader	TW20132 - Waste Management Plan.1b
Signature		

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Executive Summary

Southlink Investment Properties Pty Ltd trading as Peakstone is seeking development approval for the proposed mixed use development located at 88 Mill Point Road, South Perth (the Proposal).

To satisfy the conditions of the development application the City of South Perth (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

A summary of the bin size, numbers, collection frequency and collection method is provided in the below table.

Proposed Waste Collection Summary

Waste Type	Generation (L/week)	Bin Size (L)	Number of Bins	Collection Frequency	Collection
Residential Bin Storage Area					
Refuse	34,00	1,100	16	Two times each week	Private Contractor / City of South Perth
Recycling	20,360	1,100	10	Two times each week	Private Contractor / City of South Perth
Commercial Bin Storage Area					
Refuse	3,791	1,100	2	Two times each week	Private Contractor / City of South Perth
Recycling	2,769	1,100	2	Two times each week	Private Contractor / City of South Perth

The City/Private Contractor will service the Proposal onsite, directly from the Bin Storage Areas utilising the designated Loading Area. The City's/private contractor's rear loader waste collection vehicle will have the ability to enter and exit the Proposal in forward gear via Ferry Street.

A building manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

Southlink Investment Properties Pty Ltd trading as Peakstone is seeking development approval for the proposed mixed use development located at 88 Mill Point Road, South Perth (the Proposal).

To satisfy the conditions of the development application the City of South Perth (the City) requires the submission of a Waste Management Plan (WMP) that will identify how waste is to be stored and collected from the Proposal. Talis Consultants has been engaged to prepare this WMP to satisfy the City's requirements.

The Proposal is bordered by Ferry Street to the north, residential developments to the east, mixed use developments to the south and Mill Point Road to the west, as shown in Figure 1.

1.1 Objectives and Scope

The objective of this WMP is to outline the equipment and procedures that will be adopted to manage waste (refuse and recyclables) at the Proposal. Specifically, the WMP demonstrates that the Proposal is designed to:

- Adequately cater for the anticipated volume of waste to be generated;
- Provide adequately sized Bin Storage Area, including appropriate bins; and
- Allow for efficient collection of bins by appropriate waste collection vehicles.

To achieve the objective, the scope of the WMP comprises:

- Section 2: Waste Generation;
- Section 3: Internal Transfer of Waste;
- Section 4: Waste Storage;
- Section 5: Waste Collection;
- Section 6: Waste Management; and
- Section 7: Conclusion.

2 Waste Generation

The following section shows the waste generation rates used and the estimated waste volumes to be generated at the Proposal.

2.1 Proposed Tenancies

The anticipated volume of refuse and recyclables is based on the number of residential apartments, townhouses and the floor area (m²) of the commercial tenancies at the Proposal. The Proposal consists of the following:

Residential:

- One Bedroom Apartments – 16;
- Two Bedroom Apartments – 58;
- Two Bedroom Townhouse – 10;
- Three Bedroom Apartments – 81; and
- Four Bedroom Apartments – 10.

Commercial:

- Café – 146m²;
- Co-working – 167m²;
- Wine Bar – 136m²;
- Breakout/Functions – 102m²;
- Live/Work – 64m²; and
- Functions – 23m².

2.2 Waste Generation Rates

The estimated amount of refuse and recyclables to be generated by the Proposal is based on the City of South Perth's *Waste Guidelines for New Developments Version 4* (guidelines) and previous advice from the City.

It should also be noted that a conservative approach has been taken with regards to waste generation for the commercial tenancies at the Proposal by overestimating the potential waste volumes for the commercial tenancies. Seven days of operation has been assumed for all commercial tenancies. This is considered to be an over estimation as it is not uncommon for food and beverage tenancies to close operations post weekend trading therefore resulting in an over estimation of waste volumes generated.

Table 2-1 shows the waste generation rates which have been applied to the Proposal.

Table 2-1: Waste Generation Rates

Tenancy Use Type	City's Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Residential			
One Bedroom Apartment	1 bedroom or studio apartment	80L/week	80L/week
Two Bedroom Apartment	2 bedroom apartment	160L/week	120L/week
Two Bedroom Townhouse	2 bedroom apartment	160L/week	120L/week
Three Bedroom Apartment	3 bedroom apartment or greater	240L/week	120L/week
Four Bedroom Apartment	3 bedroom apartment or greater	240L/week	120L/week
Commercial			
Café	Café (Dine in)	300L/100m ² /day	200L/100m ² /day
Co-working	Offices	10L/100m ² /day	10L/100m ² /day
Wine Bar	Licenced Club, Tavern, Small Bar	50L/100m ² /day	50L/100m ² /day
Breakout/Functions	Offices	10L/100m ² /day	10L/100m ² /day
Live/Work	Offices	10L/100m ² /day	10L/100m ² /day
Functions	Offices	10L/100m ² /day	10L/100m ² /day

2.3 Waste Generation Volumes

Waste generation is estimated by volume in litres (L) as this is generally the influencing factor when considering bin size, numbers and storage space required.

2.3.1 Residential Waste

Residential waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown Table 2-2. It is estimated that the residential apartments and townhouses at the Proposal will generate 34,000L of refuse and 20,360L of recyclables each week.

Table 2-2: Estimated Waste Generation – Residential

Residential	Number of Apartments / Townhouses	Waste Generation Rate (L/week)	Waste Generation (L/week)
Refuse			
One Bedroom Apartment	16	80	1,280
Two Bedroom Apartment	58	160	9,280
Two Bedroom Townhouse	10	160	1,600
Three Bedroom Apartment	81	240	19,440
Four Bedroom Apartment	10	240	2,400
Total			34,000
Recyclables			
One Bedroom Apartment	16	80	1,280
Two Bedroom Apartment	58	120	6,960
Two Bedroom Townhouse	10	120	1,200
Three Bedroom Apartment	81	120	9,720
Four Bedroom Apartment	10	120	1,200
Total			20,360

2.3.2 Commercial Waste

Commercial waste generation volumes in litres per week (L/week) adopted for this waste assessment are shown Table 2-3. It is estimated that the commercial tenancies at the Proposal will generate 3,791L of refuse and 2,769L of recyclables each week.

Table 2-3: Estimated Waste Generation – Commercial

Commercial	Area (m ²)	Waste Generation Rate (L/100m ² /day)	Waste Generation (L/week)
Refuse			
Café	146	300	3,066
Co-working	167	10	117
Wine Bar	136	50	476
Breakout/Functions	102	10	71
Live/Work	64	10	45
Functions	23	10	16
Total			3,791
Recyclables			
Café	146	200	2,044
Co-working	167	10	117
Wine Bar	136	50	476
Breakout/Functions	102	10	71
Live/Work	64	10	45
Functions	23	10	16
Total			2,769

3 Internal Transfer of Waste

To ensure that waste is managed appropriately at the Proposal, it is important to allow for sufficient space to accommodate the required quantity of bins within the Bin Storage Areas. The transfer of bins, quantity, size and design of the Bin Storage Areas are described in the following sections.

3.1 Residential Internal Bins

To promote positive recycling behaviour and maximise diversion from landfill, the residential apartments and townhouses will have room to accommodate two under counter/kitchen bins for the separate disposal of refuse and commingled recyclables. The resident will then take the contents of these internal bins to the waste chute system, as described below.

3.1.1 Waste Chute System

To assist with efficient disposal of waste to the Residential Bin Storage Area, a dual chute waste system will be utilised at the Proposal. The dual chute utilises separate chutes for refuse and recycling waste.

The waste chutes will be located in close proximity to the elevators on each residential level, have self-closing doors and bottom hinge and fire rated to AS1530.4-2005. Chutes are typically 610mm in diameter and are ventilated with an extraction fan at the top to reduce odour and insulated for noise reduction. The chutes will be routinely cleaned via chute flushing operations. Please note, the exact design of the systems to be utilised at the Proposal will be determined at a later date following discussions with waste chute providers as the designs are finalised.

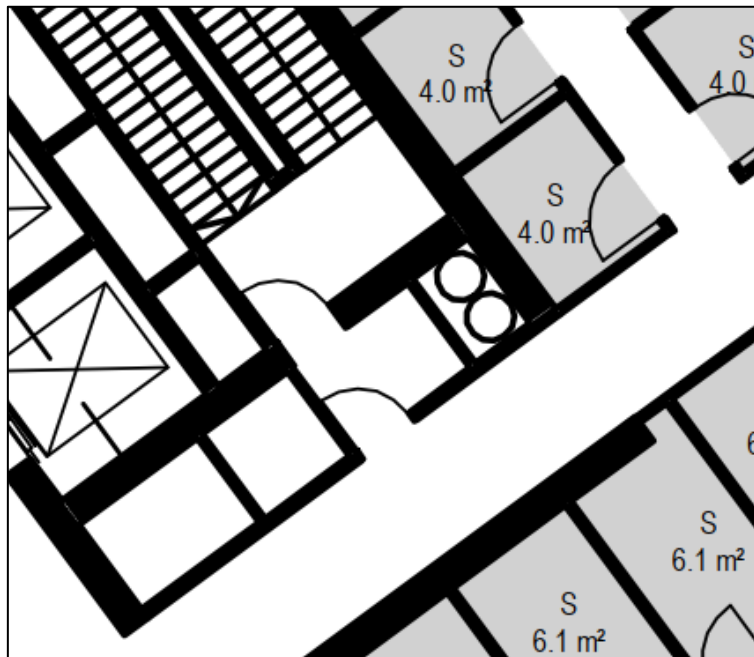
The Proposal is intending to utilise a carousel track system at the terminus of each of the waste chute systems to improve the efficiency of the building manager/caretaker manoeuvring bins within the Residential Bin Storage Area. Each carousel will be capable of accommodating four 1,100L bins which can be automatically or manually rotated to capture waste material exiting the chute system. It can also be designed to send the building manager/caretaker a digital alert of the bins capacity to ensure the swapping of empty and full bins is done in a timely manner.

The building manager/caretaker will be required to manually swap full bins with empty bins on the carousel, as necessary.

The building manager/caretaker will provide training materials for all new residents on how to use the waste system (typically within a new resident/tenant's handbook). The building manager/caretaker will advise residents of any changes to the waste system. In addition, signage will be included in the waste chute rooms to remind residents how to correctly dispose of their waste materials in the chute, and to provide relevant contact details for waste management at the Proposal.

Diagram 1 indicates the waste chute room for a typical residential floor at the development.

Diagram 1: Example of a Typical Residential Waste Chute Room



3.2 Provision for Food Organics Garden Organics (FOGO)

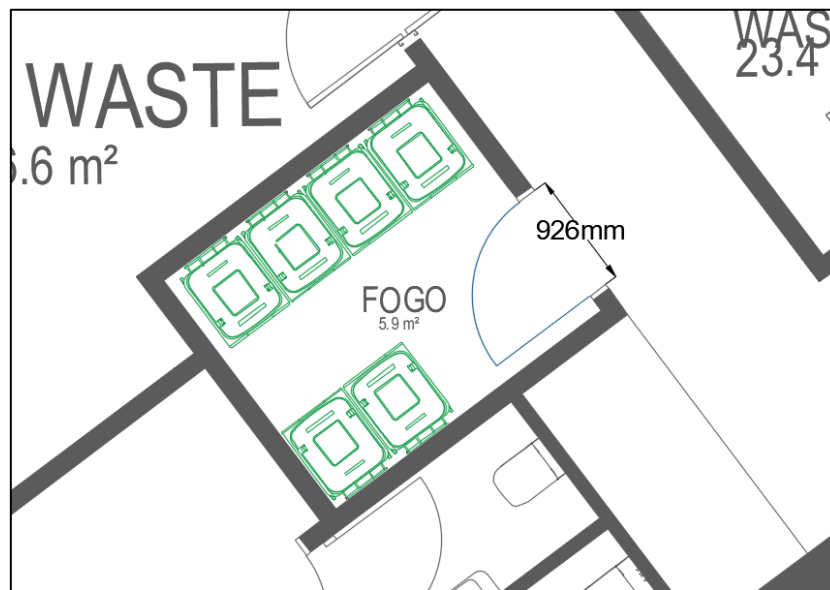
In the near future it is expected that the City may be introducing bins for the separate collection of food organics and garden organics (FOGO) within multi-unit residential properties in line with the state government's Waste Avoidance and Resource Recovery (WARR) Strategy 2030. As such, the development has provided sufficient space to accommodate additional 240L FOGO bins, should the development be required to separate food waste for collection in the future.

Kitchen caddies would be used in each residential apartment to collect FOGO, which will then be taken by residents to the dedicated FOGO Bin Storage Area located on the Ground Floor (refer Diagram 2) for depositing into communal 240L lime green lidded FOGO bins. The dedicated FOGO Bin Storage Area is located in close proximity to the building core and lifts so that they are easily accessible by residents.

These bins will be transferred by the building manager/caretaker to the Loading Area on collection days and returned following collection. This will also allow the building manager/caretaker to monitor the waste system and help track any sources of contamination.

It is anticipated that in the future FOGO would be collected a minimum of three times/week due to the malodorous nature of this type of waste. The City will assess the FOGO bin numbers and collections in the future, as required.

Diagram 2: Ground Floor FOGO Bin Storage Area



3.3 Commercial Internal Bins

The Proposal will also have a minimum of two bins to facilitate the separate disposal of refuse and recycling within each commercial tenancy. The bins will be transferred by staff/cleaners, or their authorised representative, to the Commercial Bin Storage Area and be deposited into the appropriate bin.

The Commercial Bin Storage Area is of sufficient size to also hold bins for glass, cardboard etc should the commercial tenancies require this in the future. This will be a decision of the tenants, with assistance from the building manager/caretaker in the future.

All bins will be colour coded and labelled in accordance with Australian Standards (AS 4123.7) to assist the tenants, staff and cleaners to dispose of their separate waste materials in the correct bins.

4 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Areas, as shown in Figure 2 and Figure 3, and discussed in the following sub-sections.

4.1 Bin Sizes

Table 4-1 gives the typical dimensions of standard bins sizes that may be utilised at the Proposal. It should be noted that these bin dimensions are approximate and can vary slightly between suppliers.

Table 4-1: Typical Bin Dimensions

Dimensions	Bin Sizes			
	240L	360L	660L	1,100L
Depth (mm)	800	900	800	1,300
Width (mm)	600	700	1,300	1,400
Height (mm)	1,100	1,100	1,200	1,500

Reference: City of South Perth Guidelines

4.2 Residential Bin Storage Area

To ensure sufficient area is available for storage of the residential bins, the amount of bins required for the Residential Bin Storage Area was modelled utilising the estimated waste generation in Table 2-2, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-2 the Residential Bin Storage Area has been sized to accommodate:

- Sixteen 1,100L refuse bins; and
- Ten 1,100L recycling bins.

Table 4-2: Bin Requirements for Bin Storage Area – Residential

Waste Stream	Waste Generation (L/week)	Number of Bins Required			
		240L	360L	660L	1,100L
Refuse	34,000	71	48	26	16
Recycling	20,360	43	29	16	10

The configuration of these bins within the Bin Storage Area is shown in Figure 2. It is worth noting that the number of bins and corresponding placement of bins shown in Figure 2 represents the maximum requirements assuming two collections each week of refuse and recyclables. Increased collection frequencies would reduce the required number of bins.

4.3 Commercial Bin Storage Area

To ensure sufficient area is available for storage of the commercial bins, the amount of bins required for the Commercial Bin Storage Area was modelled utilising the estimated waste generation in Table 2-3, bin sizes in Table 4-1 and based on collection of refuse and recyclables twice each week.

Based on the results shown in Table 4-3 the Commercial Bin Storage Area has been sized to accommodate:

- Two 1,100L refuse bins; and
- Two 1,100L recyclable bins.

Table 4-3: Bin Requirements for Bin Storage Area – Commercial

Waste Stream	Waste Generation (L/week)	Number of Bins Required			
		240L	360L	660L	1,100L
Refuse	3,791	8	6	3	2
Recycling	2,769	6	4	3	2

The configuration of these bins within the Bin Storage Area is shown in Figure 3. It is worth noting that the number of bins and corresponding placement of bins shown in Figure 3 represents the maximum requirements assuming two collections each week of refuse and recyclables. Increased collection frequencies would reduce the required number of bins.

4.4 Bin Storage Area Design

The design of the Bin Storage Areas will take into consideration:

- Sufficient space provided to store refuse and recycling material in separate bins;
- Sufficient space provided to allow easy passage of bins in and out of the Bin Storage Area;
- All personnel access ways should be minimum width of 900mm wide or 1500mm to accommodate the largest bin;
- All bins should have a min 50mm clearance on all sides (between bins, against walls etc.);
- The storage location of bins located behind the front building setback;
- Bins stored in locations that are reasonably secured from theft and vandalism;
- Bins not visible from the property boundary, except when presented for collection;
- Bin Storage Areas undercover and designed to not permit storm water to enter into the drain;
- Bin Storage Areas must have a smooth impervious floor sloped to a drain connected to the sewer system of not less than 75mm in thickness;
- Have enough space to facilitate the cleaning of bins;
- Walls and floors constructed of a material which facilitates the cleaning of the Bin Storage Areas;
- Ventilated to a suitable standard as approved by the City. Where mechanical ventilation is used, the outlet for vented air must be in a location which will not adversely impact residents/tenants;
- Bin Storage Areas shall be provided with artificial lighting, sensor or switch controlled both internal/external to the Bin Storage Area. All lighting in open areas to comply with AS4282-1997 (control of Obtrusive Outdoor Lighting);
- Have a minimum 1500mm in width door opening to allow easy removal and return of all bin sizes;
- Doors to the Bin Storage Areas should be vermin proof, self-closing but be able to be locked open;

- Bin Storage Areas requires the following signs and/or information to be displayed:
 - A sign stating “NO STANDING” at the entrance to the room/area;
 - A clearly visible “DANGER” sign in the vicinity of the entrance to the room/area; and
- Waste and recycling signs to provide clear instructions on how to recycle and use the services provided.

A dedicated bin wash area will be available within the Loading Area for washing of the bins as required.

Bin numbers and storage space within the Bin Storage Areas will be monitored by the building manager/caretaker during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient. The caretaker will ensure bins are filled consecutively, with only full bins produced on collection day.

Bin signage should be educational and placed in a prominent location easily accessible to users of the Proposal. Signage should identify allowable items and encourage positive waste management behaviour through stickers on bins and posters in and around the Bin Storage Areas.

5 Waste Collection

The City/Private Contractor will service the Proposal by providing the residential apartments with sixteen 1,100L bins for refuse and ten 1,100L bins for recyclables and the commercial tenancies with two 1,100L bin for refuse and two 1,100L recycling bins.

The City/Private Contractor will collect refuse and recyclables two times each week from the Proposal utilising their rear loader waste collection vehicle.

The rear loader waste collection vehicle will travel with left hand lane traffic flow on Ferry Street and turn into the Proposal in forward gear utilising Porte Cochere Entry. The waste collection vehicle will reverse into the dedicated Loading Area (Figure 4), pulling up in close proximity to the Bin Storage Areas for servicing, refer Diagram 3.

Diagram 3: Waste Collection Swept Path – Forward In



Reference: Transcore t20.239.sk01

The City/Private contractor's staff will ferry bins to and from the rear loader waste collection vehicle and the respective Bin Storage Area during servicing. The private contractor will be provided with key/PIN code access to the Bin Storage Areas and security access gates to facilitate servicing, if required.

Once servicing is complete the City's/private contractor's rear loader waste collection vehicle will exit in a forward motion, turning left onto Ferry Street moving with traffic flow, refer Diagram 4.

Diagram 4: Waste Collection Swept Path – Forward Out



Reference: Transcore t20.239.sk02

The above servicing method will preserve the amenity of the area by removing the requirement for bins to be presented to the street on collection days. In addition, servicing of bins onsite will reduce the noise generated in the area during collection.

The ability for the private contractors rear loader waste collection vehicle to access the Proposal in a safe and efficient manner has been assessed by TRANSCORE and will be included within their reports.

5.1 Residential Bulk Waste

To assist with the reduction of illegal dumping of bulky wastes, a dedicated bulky waste storage area (approximately 16m²) has been allocated on the ground floor of the Proposal for the temporary storage of bulky wastes. The building manager/caretaker will liaise with residents on procedures for bulky waste disposal within the Proposal, as required.

In addition, each residential apartment has an allocated storage room which could be used for the temporary storage of bulk waste.

There is sufficient space within the Loading Area for the provision of bulk waste collection onsite.

6 Waste Management

A building manager/caretaker will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Areas;
- Monitoring and maintenance of waste systems and equipment;
- Assist with ferrying of bins to and from the Bin Storage Areas and Loading Area on collection days;
- Exchange full bins with empty bins at the terminus of the waste chutes in the Residential Bin Storage Area;
- Rotation of empty and full bins in the Commercial Bin Storage Area to ensure commercial tenants will always have access to forward facing bins for easy disposal of waste;
- Cleaning of bins and Bin Storage Areas, when required;
- Ensure all residents/tenants/staff/cleaners at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor residents/tenants/staff/cleaners behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist residents/tenants/staff/cleaners with its removal, as required;
- Regularly engage with residents/tenants/staff/cleaners to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the City/private contractors to ensure efficient and effective waste service is maintained.

7 Conclusion

As demonstrated within this WMP, the Proposal provides sufficiently sized Bin Storage Areas for storage of refuse and recyclables, based on the estimated waste generation volumes and suitable configuration of bins. This indicates that an adequately designed Bin Storage Areas have been provided, and collection of refuse and recyclables can be completed from the Proposal.

The above is achieved using:

- Residential Apartments:
 - Sixteen 1,100L refuse bins, collected two times each week; and
 - Ten 1,100L recycling bins, collected two times each week.
- Commercial Tenants:
 - Two 1,100L refuse bins, collected two times each week; and
 - Two 1,100L recycling bins, collected two times each week.

The City/Private Contractor will service the Proposal onsite, directly from the Bin Storage Areas utilising the designated Loading Area. The City's/private contractor's rear loader waste collection vehicle will have the ability to enter and exit the Proposal in forward gear via Ferry Street.

A building manager/caretaker will oversee the relevant aspects of waste management at the Proposal.

Figures

Figure 1: Locality Plan

Figure 2: Residential Bin Storage Area

Figure 3: Commercial Bin Storage Area

Figure 4: Loading Area

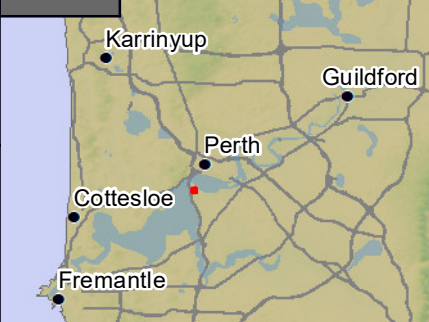


LEGEND

- Site Boundary
- Cadastre

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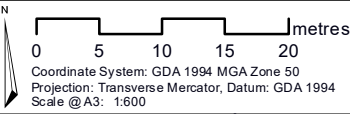
LOCALITY



LOCALITY

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South Perth WA 6151

Peakstone



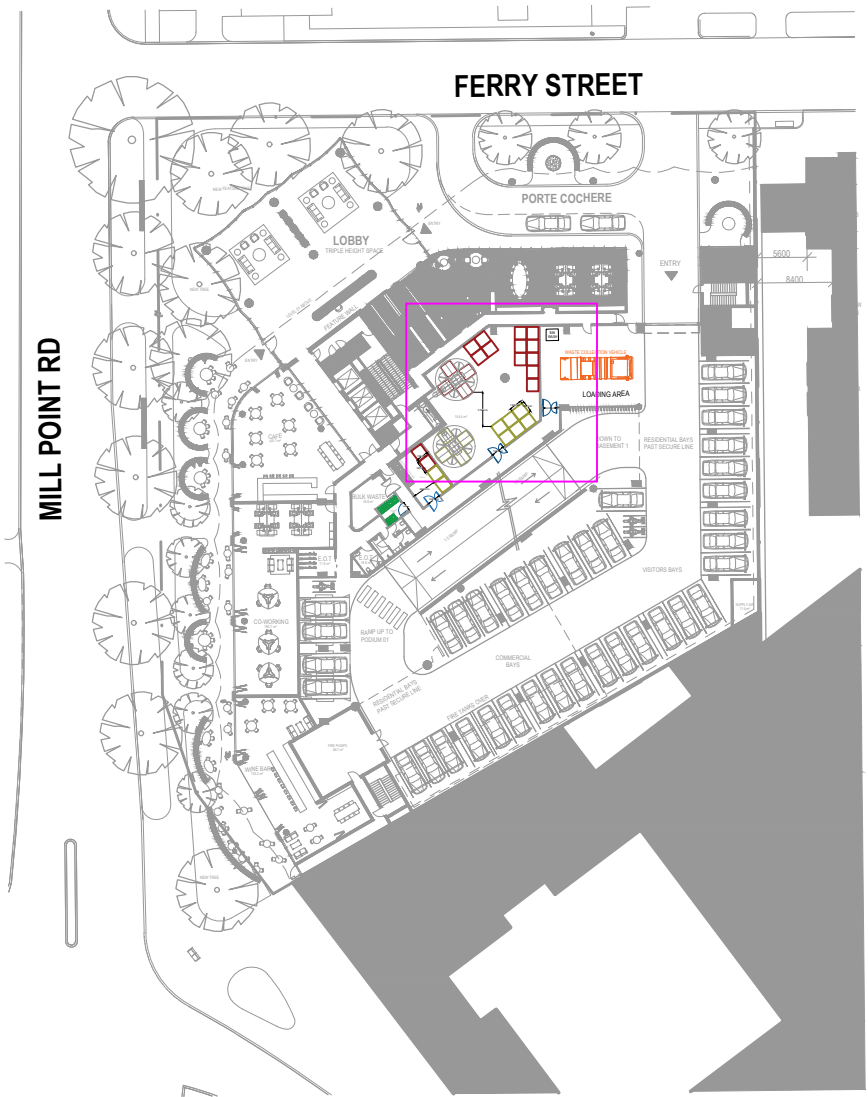
Prepared:	F Walker	Date:	12/10/2020
Reviewed:	D Patel	Revision:	A
Project:	TW20132		



Figure 01

Data source: Roads - MRWA, 2020. Imagery: Landgate, 2020.

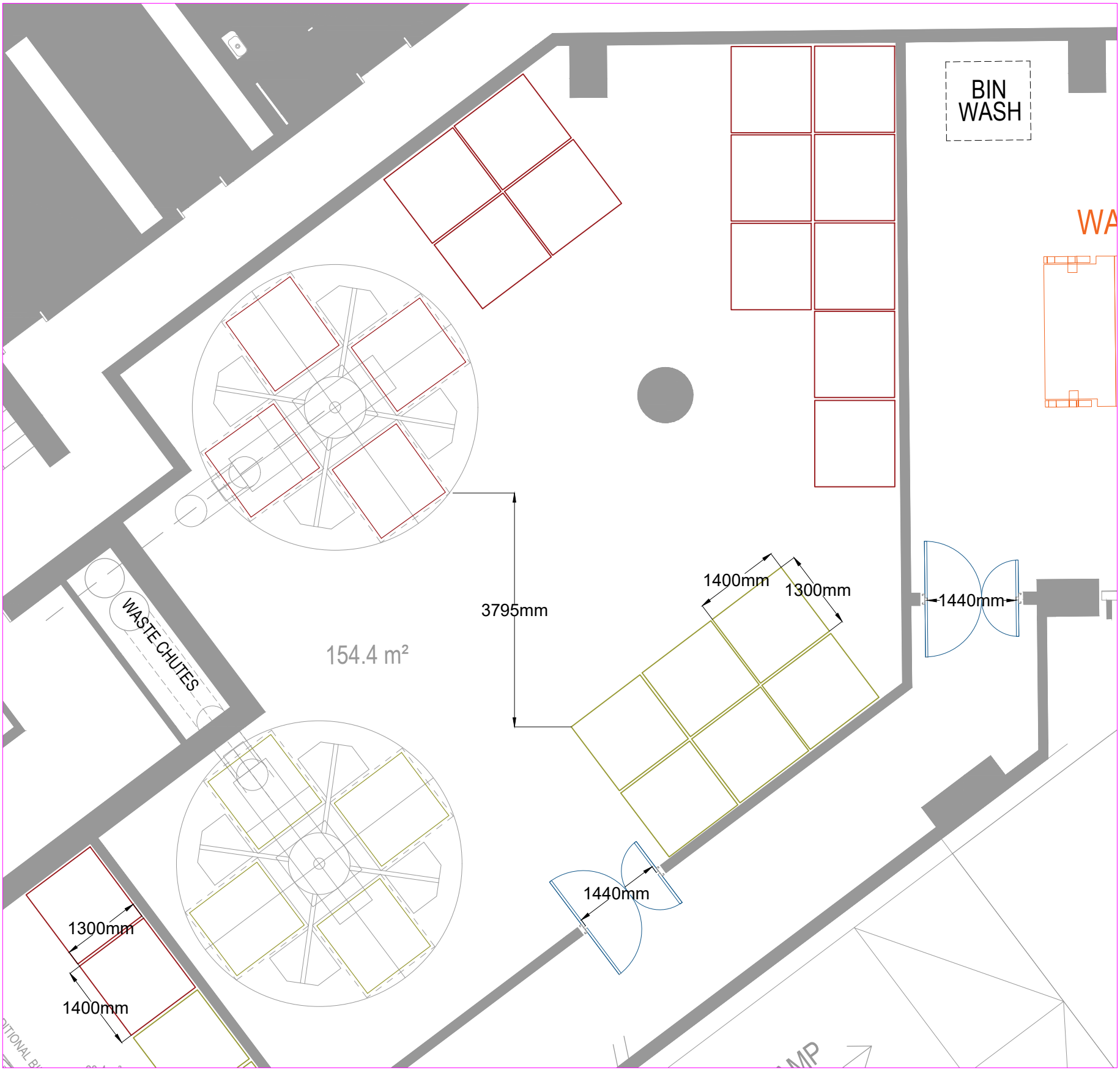
RESIDENTIAL BIN STORAGE AREA



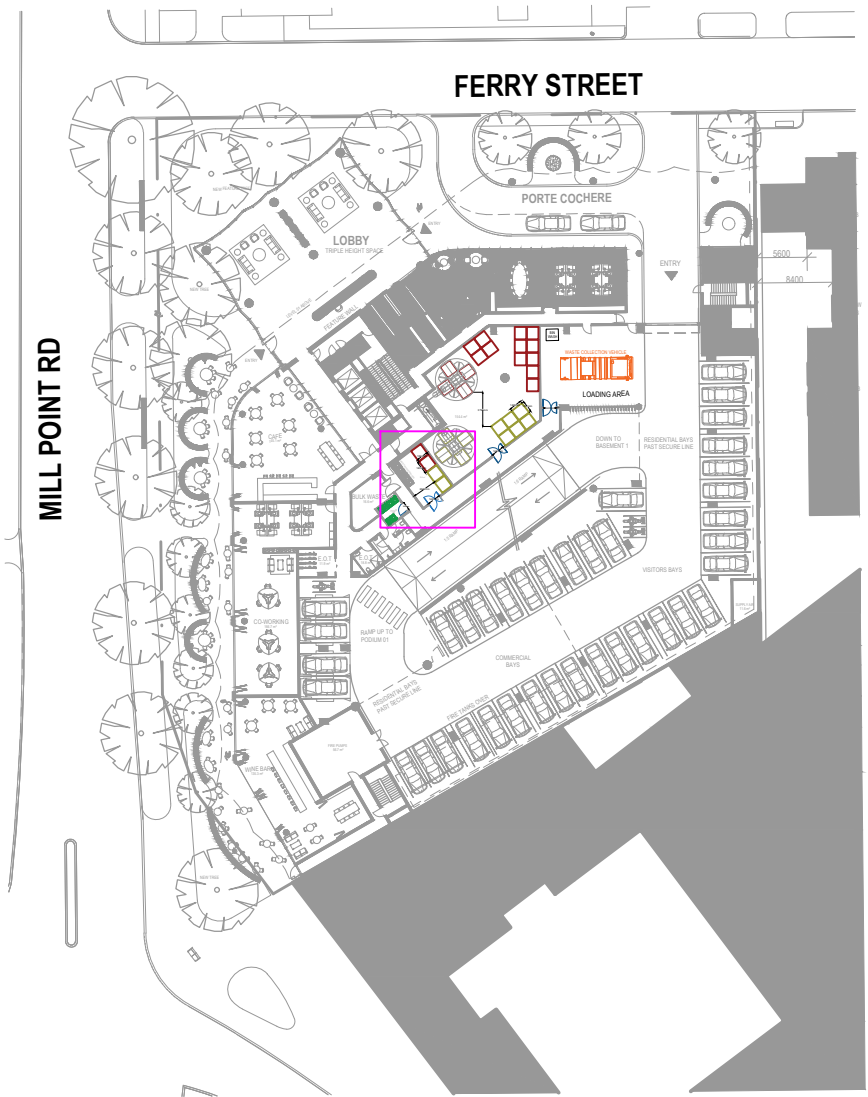
Legend:

Bin Storage Area

- 16 x 1,100L refuse (1400mm x 1300mm)
- 10 x 1,100L recycling (1400mm x 1300mm)



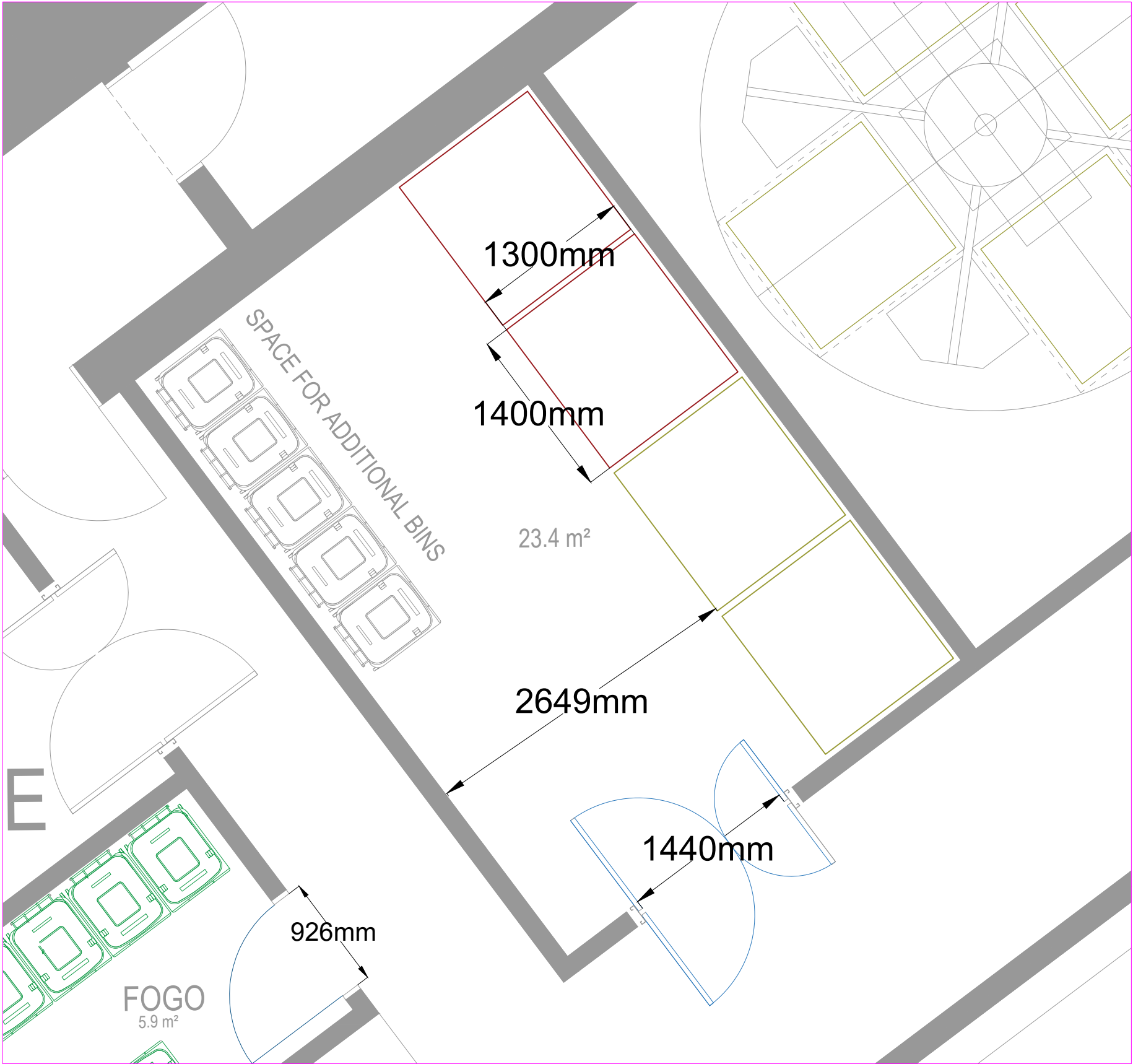
COMMERCIAL BIN STORAGE AREA



Legend:

Bin Storage Area

- 2 x 1,100L refuse (1400mm x 1300mm)
- 2 x 1,100L recycling (1400mm x 1300mm)



NOTES

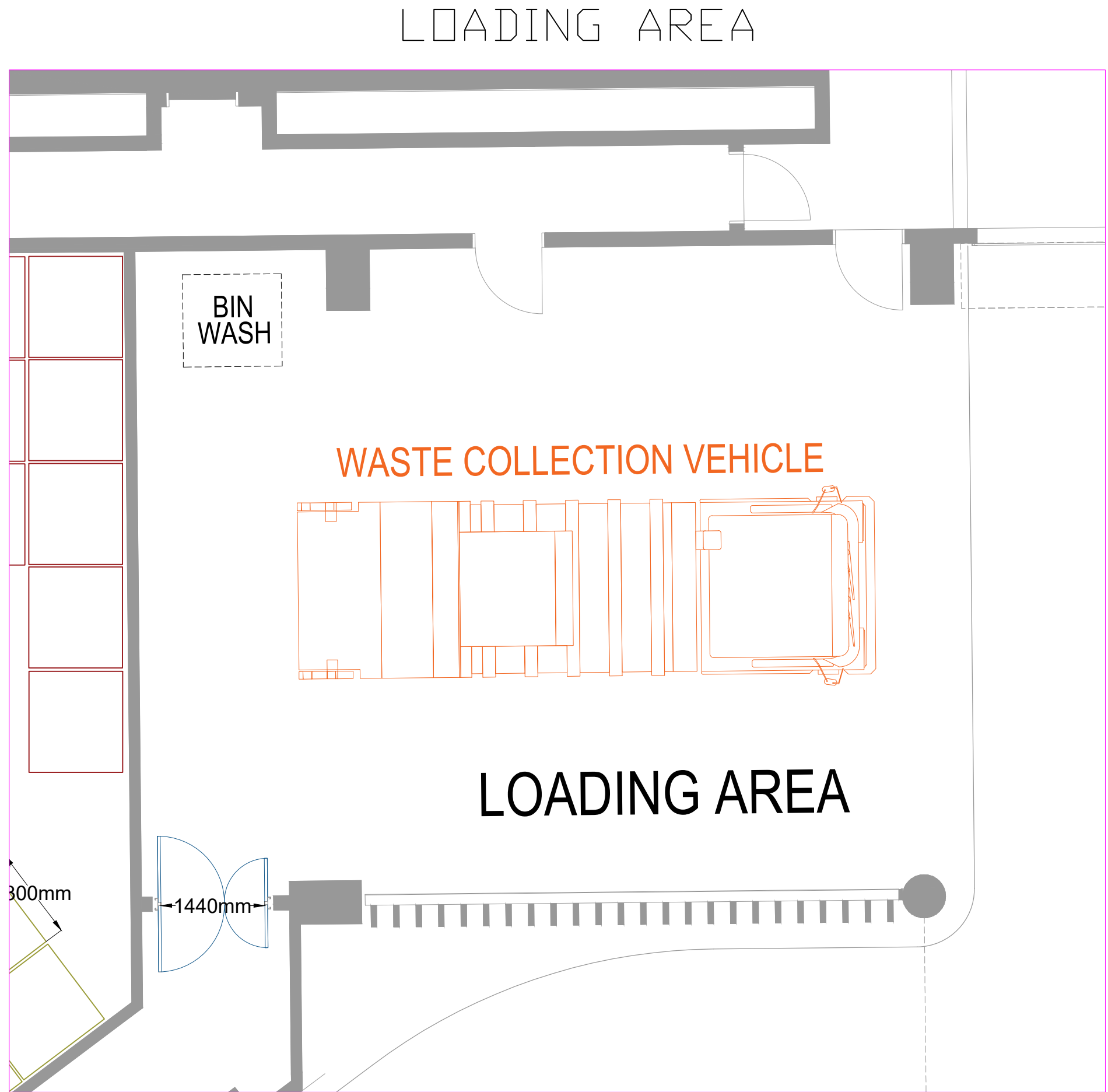
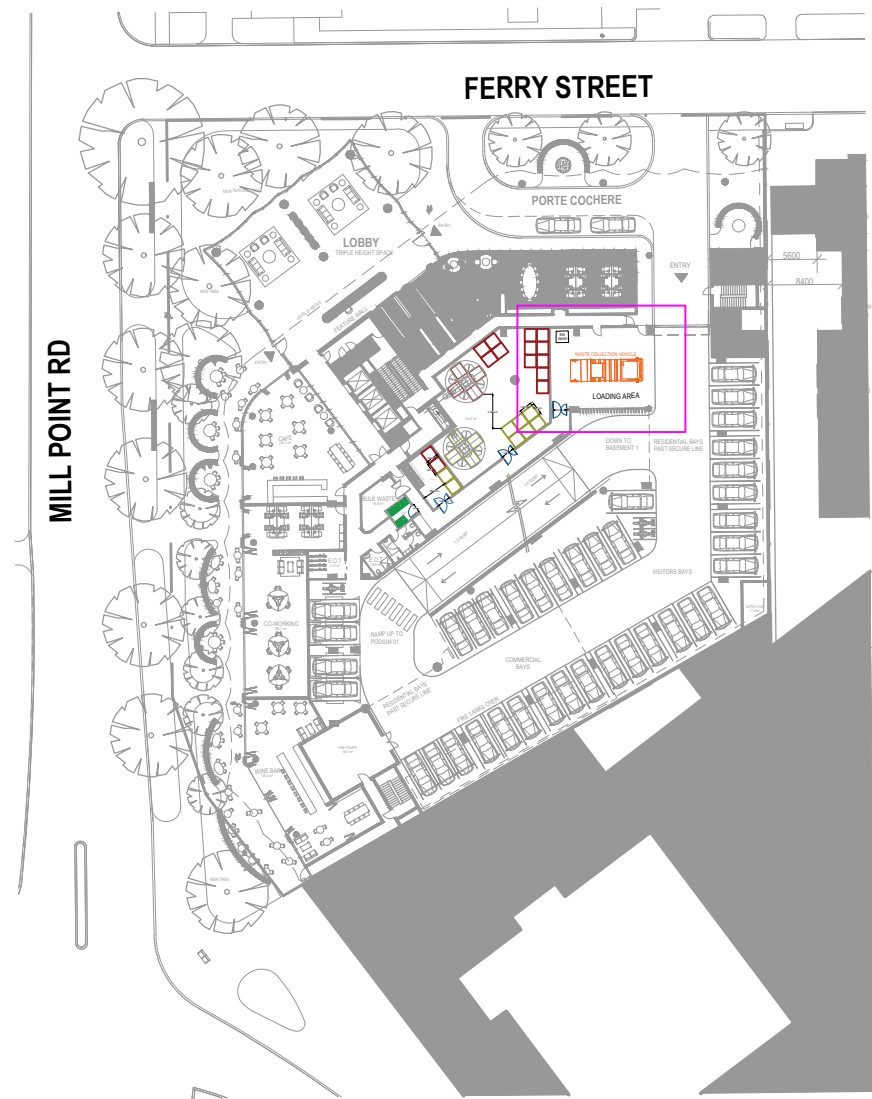
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No.	Date	Drawn By	Check By	Amendment / Issue	App.
B	14/12/20	RH	DP	SECOND ISSUE	RH
A	07/12/20	DP	REL	FIRST ISSUE	DP
No.	Date	Drawn By	Check By	Amendment / Issue	App.

Project:
**88 Mill Point Road, South
Perth**

Title:
Commercial Bin Storage Area

Drawn by:	DP	Job No:	TW20132
Checked by:	RH	File No:	TW20132DWG002
Approved by:	RH	Fig. No:	003
Scale:	NTS	Rev:	B
Date:	14/12/20		





Assets | Engineering | Environment | Noise | Spatial | Waste

Talis Consultants

Head Office
Level 1, 604 Newcastle Street,
Leederville
Western Australia 6007

PO Box 454,
Leederville
Western Australia 6903

NSW Office
5/62 North Street, Nowra
New South Wales, 2541

PO Box 1189, Nowra
New South Wales, 2541

P: 1300 251 070
E: info@talisconsultants.com.au