



Waste Management Plan

Lot 9 (29) Stirling Crescent, High Wycombe

Prepared for David Jones and Anita Jones

5 July 2024

Project Number: WMP24057

DOCUMENT CONTROL

Version	Description	Date	Author	Reviewer	Approver
1.0	First Approved Release	5/07/2024	MA	DP	DP

Approval for Release

Name	Position	File Reference
Dilan Patel	Project Manager – Waste Management Consultant	WMP24057-01_Waste Management Plan_1.0

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Executive Summary

David Jones and Anita Jones is seeking development approval for the proposed warehouse development located at Lot 9 (29) Stirling Crescent, High Wycombe (the Proposal).

To satisfy the conditions of the development application the City of Kalamunda (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	Number of Bins	Collection Frequency	Collection
Bin Storage Area 1					
Refuse	5,114	4.5m³	One	Twice each week	Private Contractor
Recycling	5,114	4.5m³	One		
Bin Storage Area 2					
Refuse	5,313	4.5m³	One	Twice each week	Private Contractor
Recycling	5,313	4.5m³	One		

A private contractor will service the Proposal onsite, directly from the Bin Storage Areas. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Stirling Crescent.

A site manager will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

David Jones and Anita Jones is seeking development approval for the proposed warehouse development located at Lot 9 (29) Stirling Crescent, High Wycombe (the Proposal).

To satisfy the conditions of the development application the City of Kalamunda (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 vacant land to the north, east and west, and Stirling Crescent to the south, 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 Areas, 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: Waste Storage;
- Section 4: Waste Collection;
- Section 5: Waste Management; and
- Section 6: 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 floor area (m²) of the proposed Warehouses. The Proposal consists of the following:

Bin storage Area 1:

- Warehouse 1 – 2,435m².

Bin Storage Area 2:

- Warehouse 2 – 2,530m².

2.2 Waste Generation Rates

In order to achieve an accurate projection of waste volumes for the Proposal, consideration was given to the Randwick City Council's *Waste Management Guidelines for Proposed developments, Annexure A, Waste Generation Rate* (2004) as they contain contemporary estimates of waste generated from Warehouses.

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

Table 2-1: Waste Generation Rates

Tenancy Use Type	Randwick Guideline Reference	Refuse Generation Rate	Recycling Generation Rate
Warehouse	Warehouse	30L/100m ² /day	30L/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 Waste Generation – Bin Storage Area 1

Waste generation volumes in litres per week (L/week) adopted for Warehouse 1 of this waste assessment is shown **Error! Reference source not found..** It is estimated that Warehouse 1 will generate 5,114L of refuse and 5,114L of recyclables each week.

Table 2-2: Estimated Waste Generation – Bin Storage Area 1

Warehouse 1	Area (m ²)	Waste Generation Rate (L/100m ² /day)	Waste Generation (L/week)
Refuse	2,435	30	5,114
Recyclables	2,435	30	5,114
Total			10,228

2.3.2 Waste Generation – Bin Storage Area 2

Waste generation volumes in litres per week (L/week) adopted for this Warehouse 2 of this waste assessment is shown Table 2-3. It is estimated that Warehouse 2 will generate 5,313L of refuse and 5,313L of recyclables each week.

Table 2-3: Estimated Waste Generation – Bin Storage Area 2

Warehouse 2	Area (m ²)	Waste Generation Rate (L/100m ² /day)	Waste Generation (L/week)
Refuse	2,530	30	5,313
Recyclables	2,530	30	5,313
Total			10,626

3 Waste Storage

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Areas, as shown in Diagram 1 and Diagram 2 , and discussed in the following sub-sections.

Note: the waste generation volumes are best practice estimates and the number of bins to be utilised represents the maximum requirements once the Proposal is fully operational. Bin requirements may be impacted as the development becomes operational and the nature of the tenants, staff and cleaners and waste management requirements are known.

3.1 Internal Transfer of Waste

To promote positive recycling behaviour and maximise diversion from landfill, internal bins will be available throughout the Proposal for the source separation of refuse and recycling.

These internal bins will be collected by the staff/cleaners and transferred to the Bin Storage Areas for consolidation into the appropriate bins. This internal servicing method may be conducted outside of main operational hours to mitigate disturbances to tenants and staff.

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

3.2 Bin Sizes

Table 3-1 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 3-1: Typical Bin Dimensions

Dimensions (m)	Bins Sizes				
	240L	660L	1,100L	3.0m ³	4.5m ³
Depth	0.730	0.780	1.070	1.505	1.600
Width	0.585	1.260	1.240	1.805	2.050
Height	1.060	1.200	1.330	1.225	1.520

Reference: SULO and Veolia Bin Specification Data Sheets

3.3 Bin Storage Area Size

3.3.1 Bin Storage Area 1 Size

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

Based on the results shown in Table 3-2, Bin Storage Area 1 has been sized to accommodate:

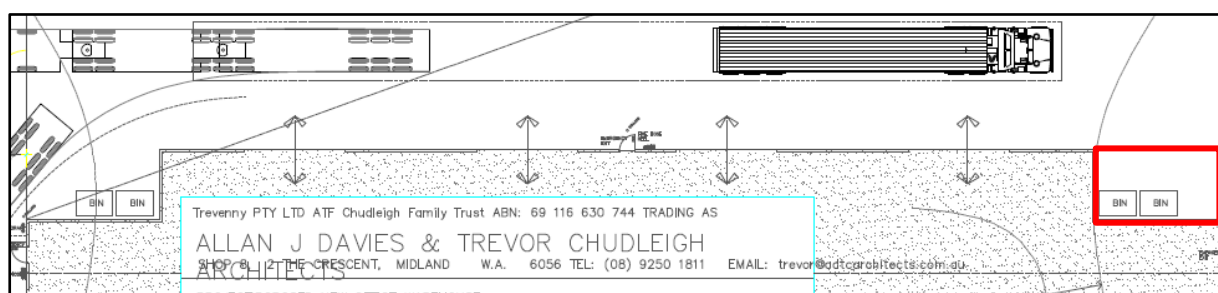
- One 4.5m³ refuse bin; and
- One 4.5m³ recycling bin.

Table 3-2: Bin Requirements for Bin Storage Area 1

Waste Stream	Waste Generation (L/week)	Number of Bins Required				
		240L	660L	1,100L	3.0m ³	4.5m ³
Refuse	5,114	11	4	3	1	1
Recycling	5,114	11	4	3	1	1

The configuration of these bins within Bin Storage Area 1 is shown in Diagram 1. It is worth noting that the number of bins and corresponding placement of bins shown in Diagram 1 represents the maximum requirements assuming two collections each week of refuse and recyclables.

Diagram 1: Bin Storage Area 1



3.3.2 Bin Storage Area 2 Size

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

Based on the results shown in Table 3-3, Bin Storage Area 2 has been sized to accommodate:

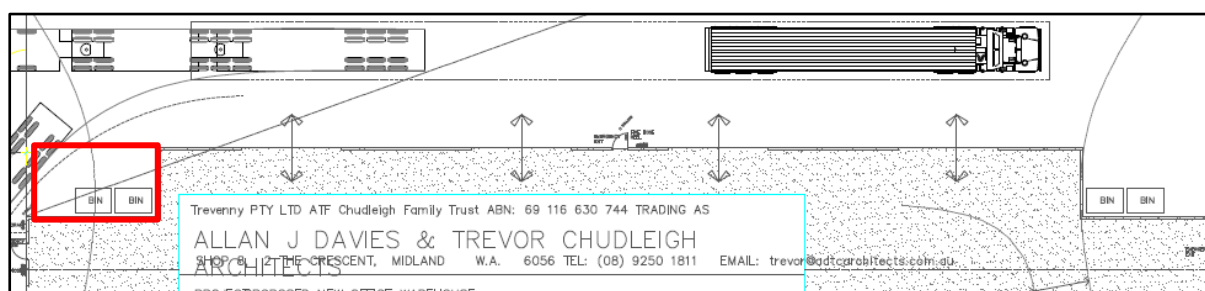
- One 4.5m³ refuse bin; and
- One 4.5m³ recycling bin.

Table 3-3: Bin Requirements for Bin Storage Area 2

Waste Stream	Waste Generation (L/week)	Number of Bins Required				
		240L	660L	1,100L	3.0m ³	4.5m ³
Refuse	5,313	12	5	3	1	1
Recycling	5,313	12	5	3	1	1

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

Diagram 2: Bin Storage Area 2



3.4 Bin Storage Area Design

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

- Smooth impervious floor sloped to a drain connected to the sewer system;
- Taps for washing of bins and Bin Storage Areas;
- Adequate aisle width for easy manoeuvring of bins;
- No double stacking of bins;
- Ventilated to a suitable standard;
- Appropriate signage;
- Designed to not permit stormwater to enter into the drain;
- Located behind the building setback line;
- Bins not to be visible from the property boundary or areas trafficable by the public; and
- Bins are reasonably secured from theft and vandalism.

Bin numbers and storage space within the Bin Storage Areas will be monitored by the site manager during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

4 Waste Collection

A private waste collection contractor will service the Proposal utilising a front lift waste collection vehicle as follows:

Bin Storage Area 1:

- One 4.5m³ refuse bin, collected twice each week; and
- One 4.5m³ recycling bin, collected twice each week.

Bin Storage Area 2:

- One 4.5m³ refuse bin, collected twice each week; and
- One 4.5m³ recycling bin, collected twice each week.

The private contractor's waste collection vehicle will service the bins onsite, directly from the Bin Storage Areas. The private contractor's waste collection vehicle will travel with left hand lane traffic flow on Stirling Crescent and turn into the Proposal in forward gear and pull up directly in front of the Bin Storage Areas for servicing.

Servicing may be conducted outside of normal operating hours to allow the waste collection vehicle to mitigate impacts on traffic movements within the Proposal.

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 private contractor's waste collection vehicle will exit in a forward motion, turning onto Stirling Crescent moving with traffic flow.

4.1 Bulk and Speciality Waste

Adequate space may be allocated throughout the Proposal for placement of cabinets/containers for collection and storage of bulk and specialty wastes that are unable to be disposed of within the bins in the Bin Storage Areas. These may include items such as:

- Refurbishment wastes from fit outs;
- White goods/appliances;
- Cleaning chemicals; and
- Commercial Light globes.

These materials will be removed from the Proposal once sufficient volumes have been accumulated to warrant disposal. Specialty waste collection will be monitored by the site manager who will organise their transport to the appropriate waste facility, as required.

5 Waste Management

A site manager will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Areas;
- Cleaning of bins and Bin Storage Areas, when required;
- Ensure all tenants, staff/cleaners at the Proposal are made aware of this WMP and their responsibilities thereunder;
- Monitor tenants, staff/cleaners behaviour and identify requirements for further education and/or signage;
- Monitor bulk and speciality waste accumulation and assist with its removal, as required;
- Regularly engage with tenants, staff/cleaners to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the private contractors to ensure efficient and effective waste service is maintained.

6 Conclusion

As demonstrated within this WMP, the Proposal provides a 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 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:

Bin Storage Area 1:

- One 4.5m³ refuse bin, collected twice each week; and
- One 4.5m³ recycling bin, collected twice each week.

Bin Storage Area 2:

- One 4.5m³ refuse bin, collected twice each week; and
- One 4.5m³ recycling bin, collected twice each week.

A private contractor will service the Proposal onsite, directly from the Bin Storage Areas. The private contractor's waste collection vehicle will enter and exit the Proposal in forward gear via Stirling Crescent.

A site manager will oversee the relevant aspects of waste management at the Proposal.

Figures

Figure 1: Locality Plan



LEGEND

Site Boundary

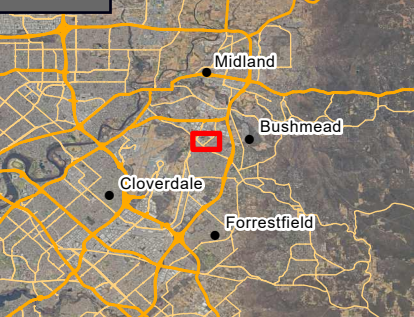
Cadastre

Freehold

Road

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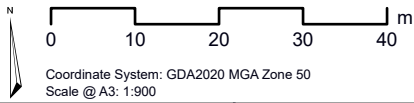
LOCALITY



LOCALITY

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Project:	WMP24057		



Figure 01



Assets | Engineering | Environment | Noise | Spatial | Waste

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