Appendix 10:
Waste Management Plan

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
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Waste Management Plan

Oryx RACF Melvista Avenue, Nedlands

Prepared for Oryx Communities

October 2020

Project Number: TW20019

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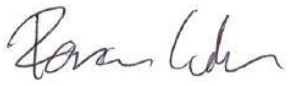
Approval for Release

Name	Position	File Reference
Ronan Cullen	Director and Waste Management Section Leader	TW20019 - Waste Management Plan.1f - Final
Signature		



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Executive Summary

Oryx Communities is seeking development approval for the proposed residential aged care facility located at 16 and 18 Betty Street, Nedlands and 73 ad 75 Doonan Road, Nedlands (the Proposal) as shown in Figure 1 (the Proposal).

To satisfy the conditions of the development application the City of Nedlands (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 proposed waste collection strategy for the Proposal is fully compliant with the City's Local Planning Policy Waste Management and Guidelines.

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
Bin Storage Area					
Refuse	11,551	1,100	6	Two times each week	City of Nedlands
Recycling	7,590	1,100	4	Two times each week	City of Nedlands

The City of Nedlands will service the Proposal onsite, directly from the Bin Storage Area. The City's rear lift waste collection vehicle will enter the proposal from Betty Street. Once servicing is complete the rear lift waste collection vehicle will exit the Proposal in forward gear onto Doonan Road.

A strata manager/building manager in association with staff and cleaners will oversee the relevant aspects of waste management at the Proposal.

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1 Introduction

Oryx Communities is seeking development approval for the proposed residential aged care facility located at 16 and 18 Betty Street, Nedlands and 73 and 75 Doonan Road, Nedlands (the Proposal).

To satisfy the conditions of the development application the City of Nedlands (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 residential dwellings to the north, Doonan Road to the east, Lisles Villages Retirement Village to the south and Betty Street 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 quantities 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: 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 following breakdown of tenancies:

- Residential Aged Care Suites – 80, with breakdown as follows:
  - Signature Rooms – 54;
  - Terrace Rooms – 10;
  - Corner Terrace Rooms – 10; and
  - Terrace Suites – 6.
- Amenities:
  - House Common Areas and Activity Rooms – 1,115m^2.
- Kitchen – 123m^2;
- Wellness Centre – 160m^2; and
- Reception, Lounge, Admin, Family Conference and Staff Facilities – 250m^2.

2.2 Waste Generation Rates

The estimated amount of refuse and recyclables to be generated by the Proposal is based on the City of Nedlands (the City) *Local Planning Scheme 3 – Local Planning Policy Waste Management and Guidelines (LPS3)* and the City of Melbourne's *Guidelines for Preparing a Waste Management Plan* (2017).

Table 2-1 shows the waste generation rates applied to the proposed tenancies at the Proposal.

Table 2-1: Refuse and Recyclables Waste Generation Rates

Tenancy Type	Guidelines	Refuse Generation Rate	Recyclables Generation Rate	Operating Days
Residential Aged Care Suites	Melbourne	60L/suite/week	60L/suite/week	7
Amenities	Melbourne	10L/100m²/day	10L/100m²/day	7
Kitchen	Melbourne	660L/100m²/day	200L/100m²/day	7
Wellness Centre	Melbourne	10L/100m²/day	10L/100m²/day	7
Reception, Lounge, Admin, Family Conference and Staff Facilities	Melbourne	10L/100m²/day	10L/100m²/day	7

As medical waste is highly dependent on the nature and scale of medical practices undertaken, there are currently no medical/clinical waste generation rates available within published waste management guidelines. The Residential Aged Care Suites and Wellness Centre will typically manage medical waste (i.e. sharps, infectious waste, pathological waste, pharmaceuticals, chemical waste and non-regulated medical waste) in-situ, therefore storage space is not required within the Bin Storage Area. Therefore, medical waste has not been included within this waste generation assessment.

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

Waste generation volumes in litres per week (L/week) adopted for this waste assessment is shown Table 2-2. It is estimated that the tenancies at the Proposal will generate 11,551L of refuse and 7,590L of recyclables each week.

Table 2-2: Estimated Waste Generation

Tenancy Type	Number of Suites or Floor Area (m^2)	Waste Generation Rate	Waste Generation (L/Week)
Refuse			
Residential Aged Care Suites	80	60L/suite/week	4,800
Amenities	1,115	10L/100m²/day	781
Kitchen	123	660L/100m²/day	5,683
Wellness Centre	160	10L/100m²/day	112
Reception, Lounge, Admin, Family Conference and Staff Facilities	250	10L/100m²/day	175
		Total	**11,551**
Recyclables			
Residential Aged Care Suites	80	60L/suite/week	4,800
Amenities	1,115	10L/100m²/day	781
Kitchen	123	200L/100m²/day	1,722
Wellness Centre	160	10L/100m²/day	112
Reception, Lounge, Admin, Family Conference and Staff Facilities	250	10L/100m²/day	175
		Total	**7,590**

3 Waste Storage

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 Area. The quantity, size and design of the Bin Storage Area is described in the following sections.

3.1 Internal Bins

The Proposal will have a minimum of two kitchen type bins within each Residential Aged Care Suite, each of the Communal Amenity Areas, the Kitchen, Office, Wellness Centre and the Reception, Admin and Staff Facilities to facilitate the separate disposal of refuse and recycling.

The contents of the refuse bins will be taken by the staff/cleaners, or their authorised representative, to the waste chute system for disposal into the chute, with waste dropping into the refuse bin located in the Bin Storage Area in the basement. The chute system will be accessible on all levels. A holding area for a recycling bin will be located on each level which will be transported by staff/cleaners to the Bin Storage Area via the lift for disposal into the 660L recycling bins.

3.2 Waste Chute System

To assist with efficient disposal of waste a single refuse waste chute waste system will be utilised by staff/cleaners to dispose of refuse waste. The waste chute will be accessible on each level, have self-closing doors with a bottom hinge and have a fire rating to AS1530.4-2005.

Chutes must be ventilated with an extraction fan at the top to reduce odour, and insulated for noise reduction. The chute will be routinely cleaned via chute flushing operations. Termination of the chute into the refuse bins is required to have skirting, or other equivalent system, to reduce any materials leaving the bin on impact. Bins should have reinforced bases for bin longevity. The cleaners will be required to exchange full refuse bins with empty refuse bins at the terminus of the waste chute.

3.3 Bin Storage Area

Waste materials generated within the Proposal will be collected in the bins located in the Bin Storage Area shown in Figure 2**.**

3.3.1 Bin Sizes

Table 3-1 shows the standard dimensions for the City's 240L, 660L and 1,100L bins. It should be noted that these bin dimensions can vary slightly between suppliers.

Table 3-1: Typical Bin Dimensions

Dimensions	Bin Sizes		
	240L	660L	1,100L
Depth	0.8	0.8	1.3
Width	0.6	1.3	1.4
Height	1.1	1.2	1.5
Floor area (m^2)	0.48	1.04	1.82

Reference: City of Nedlands LPS3 – 4.0 Bin Size and Colour – Table 3.

3.3.2 Bin Storage Area Size

To ensure sufficient area is available for storage of the bins, the amount of bins required for the Bin Storage Area 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 from the Proposal.

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

- Six 1,100L refuse bins; and
- Four 1,100L recyclable bins.

Table 3-2: Bin Requirements for Bin Storage Area

Waste Stream	Waste Generation (L/week)	Number of Bins Required		
		240L	660L	1,100L
Refuse	11,551	25	9	6
Recycling	7,590	16	6	4

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.

3.3.3 Bin Storage Area Design

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

- Easy accessibility to allow for the removal of all bins;
- Smooth impervious floor sloped to a drain connected to the sewer system;
- A permanent water supply and drainage facility for washing of bins and the Bin Storage Area;
- Adequate aisle width and circulation space for easy manoeuvring of bins;
- No double stacking of bins;
- Doors to the Bin Storage Area that are self-closing and vermin proof;
- Doors to the Bin Storage Area that are wide enough to fit bins through;
- Ventilated to a suitable standard;
- Appropriate signage to assist residents;
- Undercover where possible and be 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.

In addition, the Bin Storage Area will allow adequate space to accommodate a collection point for large cardboard/bulky items that cannot be placed within the waste chute, as required.

Clear signage and coloured bins will be placed in locations that are accessible to users of the waste management services to assist staff/cleaners in reducing contamination.

Bin numbers and storage space within the Bin Storage Area will be monitored by the strata manager/building manager in association with the staff/cleaners during the operation of the Proposal to ensure that the number of bins and collection frequency is sufficient.

4 Waste Collection

The City will service the Proposal and provide the residential aged care facility with six 1,100L bins for refuse and four 1,100L bins for recyclables.

The City will collect refuse and recyclables twice each week utilising a rear loader waste collection vehicle.

During servicing, the City's rear loader waste collection vehicle will travel with left hand lane traffic flow on Betty Street and turn into the Proposal in forward gear, pulling up adjacent to the Bin Storage Area.

Traffic management signals will control incoming traffic flow from Betty Street during servicing, which would typically take less than five minutes each collection, keeping incoming vehicles at a safe distance from the waste collection vehicle and bin loading area. The positioning of the bin loading area permits vehicles to enter the facilities car park ensuring traffic will not build up on Betty Street.

During servicing the City's waste collection staff will transfer bins between the rear loader waste collection vehicle and the Bin Storage Area during servicing. The bin transfer path is level and of smooth surface, with no steps/kerbs and will be kept free of obstacles. The City will be provided with key/PIN code access to the Bin Storage Area and security access gates to facilitate servicing, if required.

There is adequate clearance to service the Bin Storage Area with the planting pergola height exceeding the 3.8m waste collection vehicle operational height (excluding low height attached service pipes, beams, awnings and upper floors).

Once servicing is complete the City's rear loader waste collection vehicle will exit the Proposal in forward gear, turning onto Doonan Road, and moving with traffic flow.

The ability for the City's rear loader waste collection vehicle to access the Proposal in a safe manner has been assessed by qualified traffic engineers and will be included within their traffic impact statement.

4.1 Bulk Waste and Speciality Waste

Bulky/speciality waste materials will be removed from the Proposal as they are generated. Removal of any bulky/speciality waste will be monitored by the strata/building manager, who will liaise with staff/cleaners to assist with the removal of bulk waste, as required. An enclosed space has been accommodated within the Bin Storage Area for the temporary holding of bulky/speciality wastes not suitable for collection using the bin system. General storage areas within the basement could be utilised for the ad-hoc use of temporary skip bins for the collection of bulky wastes such as fridge units and mattresses, if required.

4.2 Controlled Medical Wastes

The volume of medical waste generated at the Proposal will be dependent on the nature and scale of the medical practises undertaken. Appropriate containers will be placed in the Residential Aged Care Suites and Wellness Centre where particular categories of medical waste may be generated. Instructions on identification and separation of medical wastes will be posted at each waste collection point to remind staff/cleaners of procedures. Suitably qualified medical waste service providers will be engaged to determine storage and collection requirements.

5 Waste Management

A strata manager/building manager in association with the staff/cleaners will be engaged to complete the following tasks:

- Monitoring and maintenance of bins and the Bin Storage Area;
- Transfer recycling waste directly to the Bin Storage Area;
- Cleaning of bins and Bin Storage Area as required;
- Monitoring and maintenance of waste equipment, including regular cleaning and maintenance of the waste chute system;
- Swapping of full bins with empty bins at the terminus of the refuse waste chute system each day, as required;
- Rotation of the full bins and empty bins within the Bin Storage Area, to ensure that only full bins are closest to the entrance of the Bin Storage Area, for collection by the City's waste collection staff;
- Monitor the accumulation of bulk/speciality waste on site and assist to organise its removal, as required;
- Ensuring all staff/cleaners/residents are made aware of the WMP and their responsibilities thereunder;
- Monitoring and maintenance of signage in chute service areas;
- Training of all new staff/cleaners/residents on how to correctly use the waste chute system and keeping them informed of any changes to the system;
- Regularly engage with new staff/cleaners/residents to develop opportunities to reduce waste volumes and increase resource recovery; and
- Regularly engage with the City to ensure an efficient and effective waste service is maintained.

6 Conclusion

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

The proposed waste collection strategy for the Proposal is fully compliant with the City's Local Planning Policy Waste Management and Guidelines.

The above is achieved using:

- Six 1,100L refuse bins, collect two times each week; and
- Four 1,100L recycling bins, collected two times each week.

The City of Nedlands will service the Proposal onsite, directly from the Bin Storage Area. The City's rear lift waste collection vehicle will enter the proposal from Betty Street. Once servicing is complete the rear lift waste collection vehicle will exit the Proposal in forward gear onto Doonan Road.

A strata manager/building manager in association with staff and cleaners will oversee the relevant aspects of waste management at the Proposal.

Figures

Figure 1: Locality Plan

Figure 2: Bin Storage Area

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386,300

386,400

6,460,300

6,460,200

Granby Cr North

Granby Cr South

Betty St

Doonan Rd

Melvista Av

Hackett Rd

Data source: Roads - MRWA, 2019. Imagery: Landgate, 2019.

LEGEND

- Site Boundary
- Cadastre

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LOCALITY

LOCALITY

Oryx RACF
Melvista Avenue
Nedlands, WA, 6009

Total Project Management

N

0 10 20 30 metres

Coordinate System: GDA 1994 MGA Zone 50
Projection: Transverse Mercator, Datum: GDA 1994
Scale @ A3: 1:800

Prepared:	F Walker	Date:	19/03/2020
Reviewed:	R Hayton	Revision:	A
Project:	TW20019		

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Figure 01

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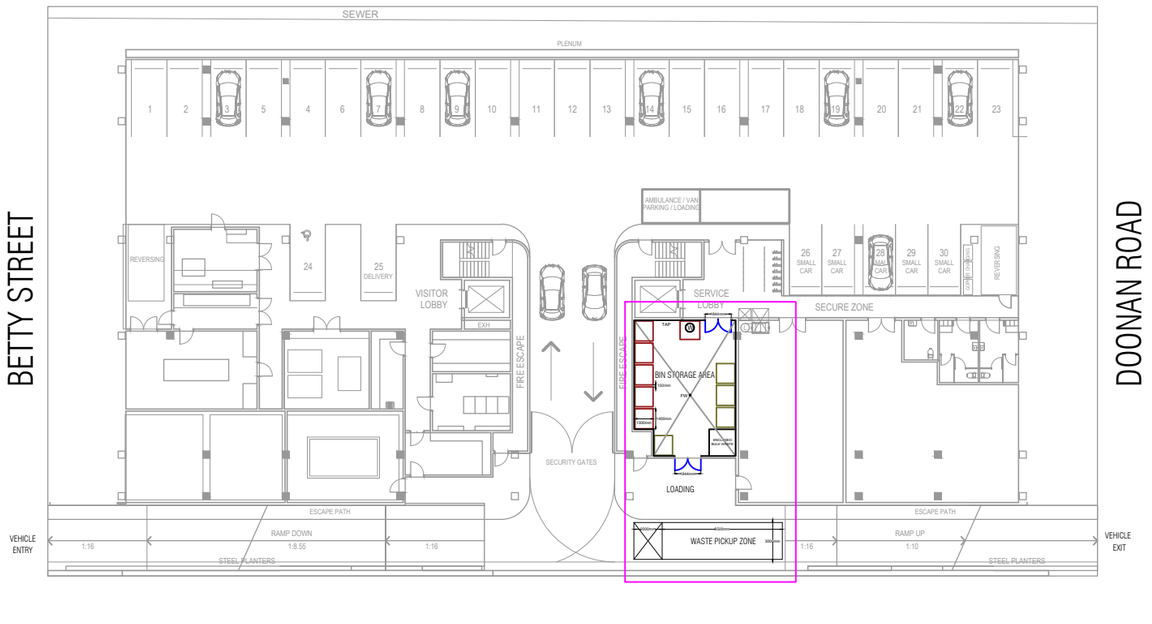

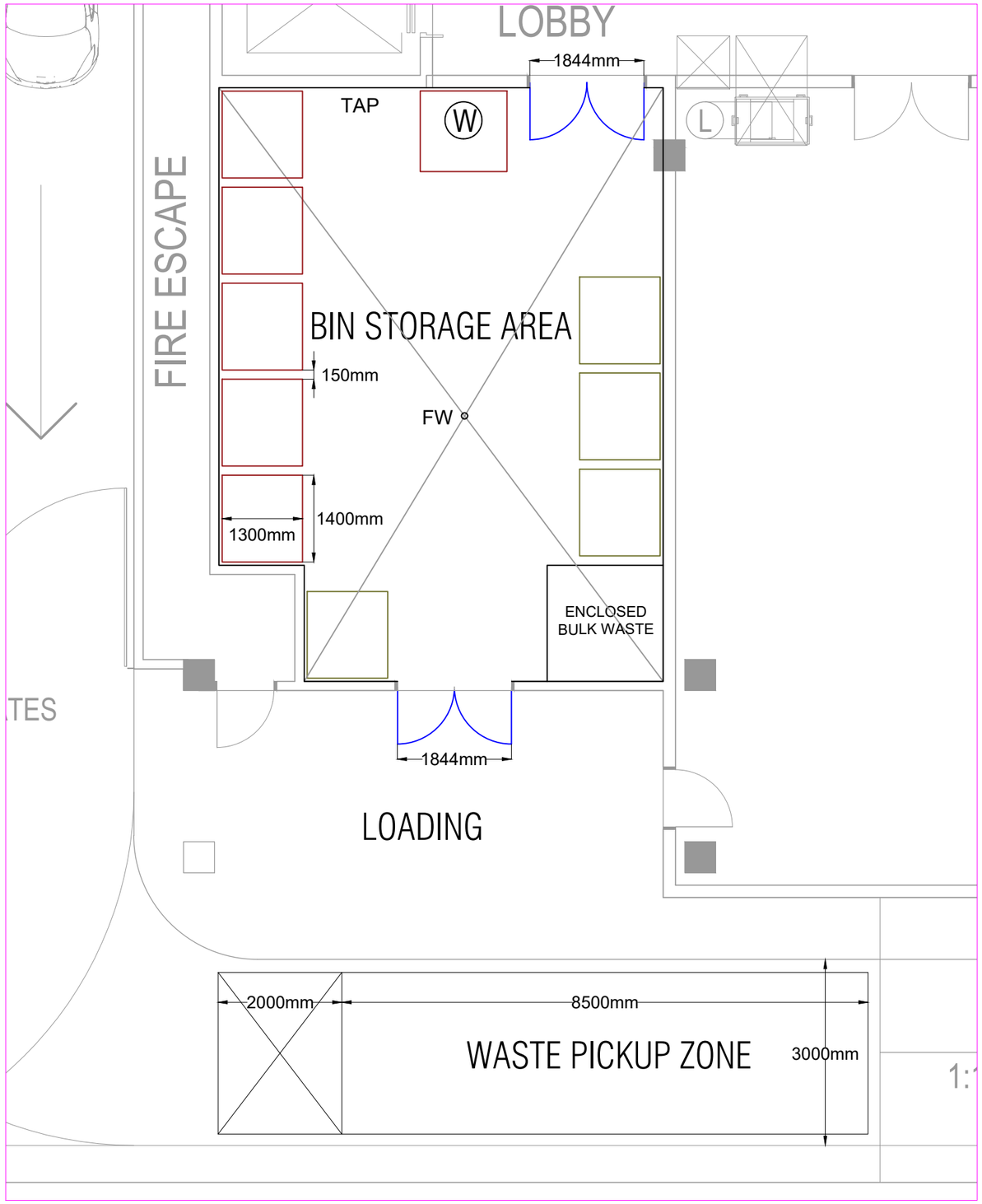

Legend:

Bin Storage Area

6 x 1,100L refuse waste (1,400mm x 1,300mm)

4 x 1,100L recyclable waste (1,400mm x 1,300mm)

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Client: Oryx Communities

NOTES

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2. All levels refer to Australian Height Datum.
3. DO NOT SCALE, use figured dimensions only, if in doubt please contact Talis Consultants.

No.	Date	Drawn / Chkd	Amendment / Issue	App.
B	15/10/20	DP / RH	SECOND ISSUE	DP
A	27/05/20	DP / RH	FIRST ISSUE	DP

Project: Oryx RACF Melvista Avenue, Nedlands

Title: Bin Storage Area

Drawn by:	DP	Job No:	TW20019
Checked by:	RH	File No:	TW20019DWG001
Approved by:	RH	Fig. No:	002
Scale:	NTS	Rev:	B
Date:	15/10/20		

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