

IVANHOE ESTATE

Midtown C4 Waste Management Plan

Prepared for:

Frasers Property
Level 2
1C Homebush Bay Drive
Rhodes NSW 2138

PREPARED BY

SLR Consulting Australia Pty Ltd
ABN 29 001 584 612
Tenancy 202 Submarine School, Sub Base Platypus, 120 High Street
North Sydney NSW 2060 Australia

T: +61 2 9427 8100
E: sydney@slrconsulting.com www.slrconsulting.com

BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Frasers Property (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
610.30337.00200-R02-v5.0	5 July 2021	Andrew Quinn	Celine El-Khoury	Andrew Quinn
610.30337.00200-R02-v4.0	22 June 2021	Andrew Quinn	Celine El-Khoury	Andrew Quinn
610.30337.00200-R02-v3.0	17 June 2021	Andrew Quinn	Celine El-Khoury	Andrew Quinn
610.30337.00200-R02-v3.0	16 June 2021	Andrew Quinn	Celine El-Khoury	Andrew Quinn
610.30337.00200-R02-v2.0	11 June 2021	Andrew Quinn	Celine El-Khoury	Andrew Quinn
610.30337.00200-R02-v1.1	25 May 2021	Andrew Quinn	Celine El-Khoury	Andrew Quinn

CONTENTS

1	INTRODUCTION	4
1.1	Site Location and Details.....	4
2	CITY OF RYDE REQUIREMENTS	5
2.1	Ryde DCP.....	5
2.2	All developments	5
2.3	Multi Dwelling Housing developments (3 or more dwellings) and Residential Flat Buildings (up to 3 storeys)	6
2.4	Residential flat buildings of four storeys or more	6
3	RESIDENTIAL WASTE AND RECYCLING	7
3.1	Bins.....	7
3.2	Waste quantities, bin numbers and waste storage space.....	7
3.2.1	Assumptions	8
3.3	Waste storage area sizes and locations.....	8
3.4	Bulky Waste	8
3.5	Design requirements.....	9
3.5.1	Waste storage areas	9
3.5.2	Garbage chutes	10
3.6	Management and Collection	10
4	CLEANING, MAINTENANCE AND SECURITY	11

DOCUMENT REFERENCES

TABLES

Table 1	Bin numbers and space requirements	8
---------	--	---

FIGURES

Figure 1 - Ivanhoe Estate Development	4
Figure 2 – Social waste storage areas on Basement 1.....	9
Figure 3 – Market waste storage area on Basement 2.....	9

1 Introduction

1.1 Site Location and Details

Frasers Property proposes two residential buildings at Macquarie Park. These two buildings, referred to as Midtown C4 Market and Midtown C4 Social, are part of the development planned for the Ivanhoe Estate. Midtown C4 Market is a 24 storey development expected to have 268 residential apartments and four three-storey townhouses, Midtown C4 Social is a 17 storey development expected to have 216 residential apartments.

The development is located at the corner of Herring Road and Epping Road, see Figure 1 below. The approval authority is the City of Ryde (Council).

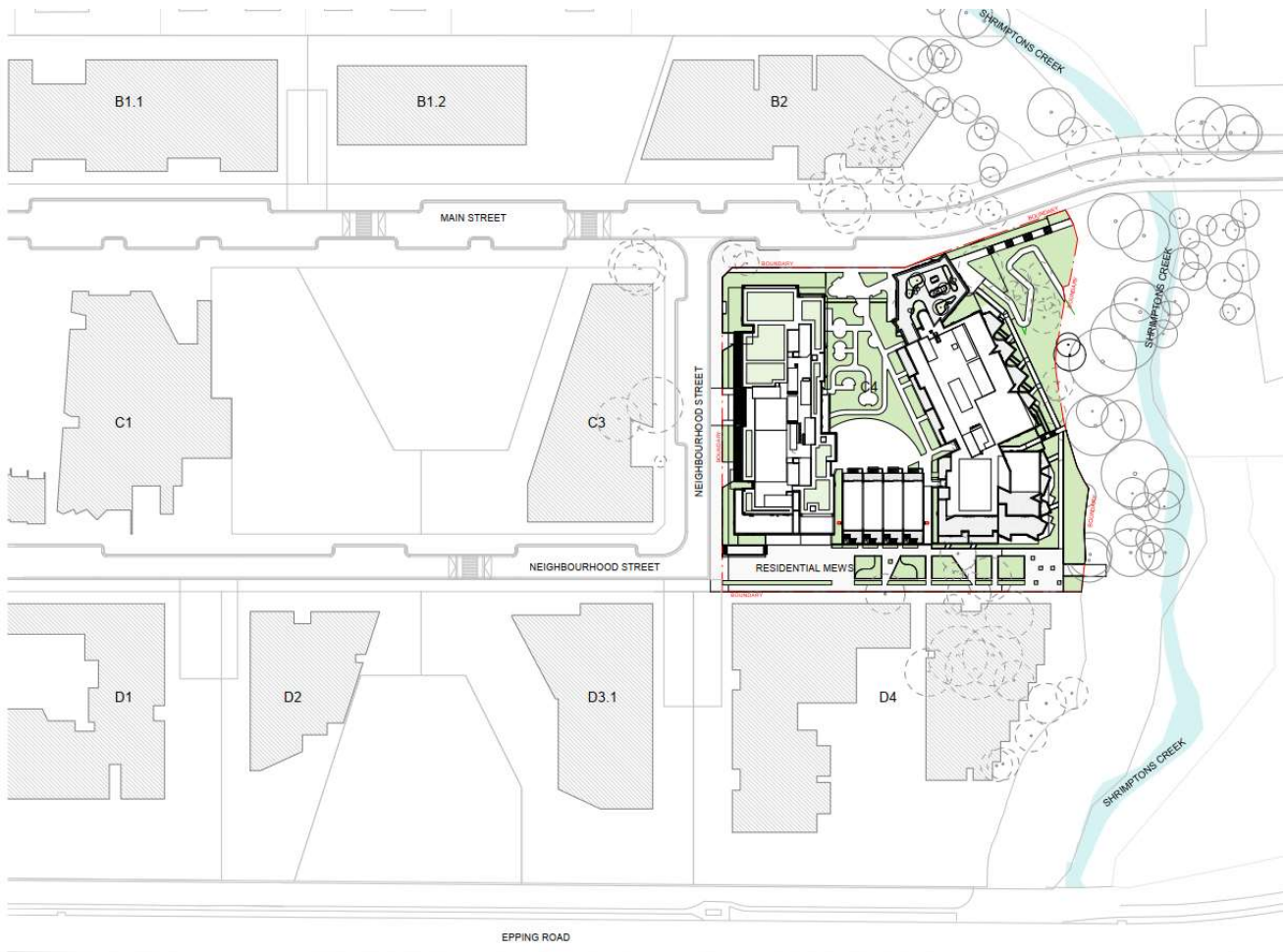


Figure 1 - Ivanhoe Estate Development

1.2 Objective

The objective of this Waste Management Plan (WMP) is to identify all potential wastes likely to be generated at the development site during the operational phases of the development, including a description of how waste would be stored, handled and collected in accordance with Council requirements.

2 City of Ryde Requirements

2.1 Ryde DCP

Part 7.2 of The City of Ryde Development Control Plan 2014 (DCP) sets out a number of specifications for waste management in new developments.

Part 4.5 of the DCP also deals with the Macquarie Park Corridor. Section 6.3.3 of the previous 2010 DCP referred to waste management and the current DCP also references Section 6.3¹ as dealing with waste management however, there is no Section 6.3 in the 2014 document.

However, the Ivanhoe Masterplan design guidelines supersede the Ryde DCP and some waste specifications in the DCP do not apply.

The specifications relevant to this development are summarised below.

2.2 All developments

Developments must provide space on-site for the sorting and storage of waste in containers suitable for collection.

The size of storage areas and number of storage containers required must be sufficient to handle and store the waste likely to be generated and stored on the premises between collections. The space is to be calculated using information in Schedule 1 Indicative Bins.

Additional space must be provided for the storage of bulky wastes where appropriate.

Allowance must be made for the storage of green waste where relevant.

All applications must be accompanied by a site waste minimisation and management plan and the location and design details of waste storage facilities on the site. These must be clearly illustrated on the plans and should include floor plan, elevations and cross section drawings of the room, and details on materials and finishes.

Drawings must clearly indicate the location of and provision for storage and collection of waste and recyclables during demolition, construction and ongoing operation.

Waste and recycling storage areas must be located in positions that:

- provide easy, direct and convenient access for the users

¹ Section 8.3 paragraph (b) under Controls Commercial says 'Rubbish and recycling areas must be provided in accordance with Section 6.3 Waste Management'

- permit easy transfer of bins to the collection point if relocation of bins is required
- permit easy, direct and convenient access for collection service providers
- do not intrude on car parking, landscaping, access and turning areas
- do not reduce amenity, that is, minimises the potential for noise, odour and other amenity and environmental impacts on residents and other occupants
- maximise protection of trees and significant vegetation.

A collection point for waste and recyclables is to be identified on the plans. The collection point must be conveniently located for users and services purposes and sited so that waste collection vehicles do not impede the access to the site or car parking facilities when servicing the bins.

The path for wheeling bins between the waste and recycling storage area and the vehicle collection point must be free of steps and kerbs and be of a gradient of less than 14:1. The waste storage area must be as close as practicable to the collection point.

Access driveways and service areas for waste collection vehicles must be designed in accordance with AS 2890.2-2002 Parking Facilities – Part 2: Off-street commercial vehicle facilities.

2.3 Multi Dwelling Housing developments (3 or more dwellings) and Residential Flat Buildings (up to 3 storeys)

This section of the DCP applies to low rise and low-medium scale residential developments. Villas and townhouses are specifically mentioned.

Individual bin storage is proposed for smaller scale developments such as villas and townhouses of up to six dwellings. Space should be provided in each courtyard area for storing Council's garbage, recycling and green waste bins. Paved access should be provided to the courtyard area from outside the building to enable the householder to wheel the bins to the kerbside for servicing. The maximum distance from the bin storage to the street should not be more than 75 metres.

2.4 Residential flat buildings of four storeys or more

In addition to the controls applying to all developments, outlined in Section 2.2 above, the following apply:

- Space must be provided inside each dwelling for two days' worth of garbage and recyclables
- A waste and recycling storage room, or rooms, must be provided for the storage of garbage, recyclable and green waste, with capacity to store the number of bins required by Council. The space is to be calculated using the Schedule 1 Indicative Bins Sizes and Schedule 2 Standard Waste and Recycling Bins for Residential Developments
- All waste and recycling storage rooms must be designed and constructed in accordance with Schedule 4: S4.2 Waste and Recycling Storage Rooms.
- Consideration must be given to the transport of waste and recycling from floors to the central waste and recycling storage area, using for example, lifts, or chutes

- Where garbage chutes are proposed, service rooms or compartments for accessing the chute must be provided on each residential floor. Under the Ivanhoe Masterplan guidelines however, there is no requirement for service rooms on each residential floor.

Under the masterplan guidelines there is no requirement for service rooms on each residential floor. The Market building includes a service room with chutes on each residential floor, however the Social building includes chutes accessed directly from the communal corridor.

- All chutes and service rooms or compartments must be designed and constructed in accordance with Appendix C Waste Management Equipment Specifications of the Ivanhoe Masterplan
- For developments of 30 or more dwellings, a separate room or undercover caged area of a minimum 5 m² must be provided for bulky waste. This should be located next to waste storage areas.
- Waste storage areas are to be designed to accommodate bins which can be managed by all types of domestic waste collection vehicles
- Adequate access must be provided for the users, waste collection staff and collection vehicles
- Where collection vehicles are required to drive into a property, access must allow vehicles to enter and exit the property in a forward direction with minimal need for reversing and to be operated with adequate clearances
- The driveway and basement manoeuvring space pavement strength, spatial design, access width and clearances must be suitable for the collection vehicle
- Appendix C Collection Vehicles and Appendix D Vehicle access/Turning Circles under the Better Practice Guide for Waste Management in Multi-Unit Dwellings, DECC 2008 are to be used as a guide.

3 Residential Waste and Recycling

3.1 Bins

The Ivanhoe Masterplan specifies that this development will have 1100 L bins for garbage and 660 L bins for recyclables. The capacity allowance is as follows:

- Garbage - 1 x 1100 L bin per 25 units (44 L per unit)
- Recyclables - 1 x 660 L bin per 15 units (44 L per unit).

Council will supply all these bins. No compaction of either stream is allowed.

Green waste bins are not proposed for this development. Additional space must also be provided for the storage of bulky waste. The size of this space is not specified other than it must be more than 5 m² for developments of 30 or more units.

3.2 Waste quantities, bin numbers and waste storage space

The Market Building consists of a ground level and 23 upper levels. The Social Building consists of one lower ground level and 16 upper levels. Taking into account the assumptions in Section 3.2.1 below and specifications detailed in Section 2 above, the number of bins of different capacities that would be required and the amount of waste storage space required are shown in Table 1 below.

Table 1 Bin numbers and space requirements

Building	Number of Units	Number of 1100 L Garbage Bins	Collection Frequency per Week	Space Required	Number of 660 L Recycling Bins	Collection Frequency per Week	Space Required	Total Space Required including Space for Manoeuvring	Space allowed in Bin Room
C4 Social North	118	2	3	3.4 m ²	4	2	4.2 m ²	12.1 m ²	17.8 m ²
C4 Social South	98	2	3	3.4 m ²	4	2	4.2 m ²	12.1 m ²	14.5 m ²
C4 Market	268	4	3	6.7 m ²	9	2	9.4 m ²	24.2 m ²	25.0 m ²
Townhouses	4	240 L bins for garbage and recycling provided to each property							
Total	488	8			17			48.4 m²	57.3 m²

The four terraces have storage space for two 240 L bins at the front of each property. As the townhouses have no gardens, no green waste bin is proposed.

3.2.1 Assumptions

The area required for waste storage takes into account Council's waste generation rates for high rise residential dwellings, bin sizes and numbers, collection frequency, and additional space for the easy and safe movement of bins.

Neither garbage nor recyclables can be compacted.

3.3 Waste storage area sizes and locations

Two residential waste storage areas are located on Basement 1 in Social Building under two pairs of chutes that run through each wing of the building, the north and the south (Figure 2). One residential waste storage area is located on Basement 2 in Market Building under one pair of chutes that runs through the building (Figure 3).

The space allowed in all the bin rooms is adequate.

In addition to these storage areas, a bin collection room is located on Basement 1 adjacent to the heavy vehicle turntable (Figure 2). This room has an area of 72 m² which is adequate to hold all bins that need to be stored there for collection.

3.4 Bulky Waste

Council requires a minimum of 5 m² for bulky waste in developments of 30 units or more. Each building therefore should have at least 5 m² of space for bulky waste.

A residential bulky waste room is located on Basement 1 for Social Building residents (Figure 2). This has an area of 35 m², which is more than seven times the area required by Council for this building.

A residential bulky waste area is allocated in the bin room on Basement 2 for Market Building residents (Figure 3). This has an area of 6 m² for bulky waste, which is more than the area required by Council for this building.

All bulky waste will be brought to the main collection room on Basement 1 for collection. This room has an area of 73 m², of which 48 m² has been allowed for bulky waste.

The Basement 1 waste storage areas are shown in Figure 2.



This floor plan shows the layout of the Market Waste Room and its immediate surroundings. The Market Waste Room is a large rectangular space measuring 25 m². Adjacent to it is a smaller Market Bulky Waste Room measuring 6 m². A staircase is located between these two rooms. To the right of the Market Waste Room is a Garbage ch... (likely chamber) and an Elec Comms Cupboard. A Fire Hydrant (FHR) is located to the left of the staircase. The plan also shows various corridors, walls, and structural elements. A yellow arrow points from the text 'Garbage ch...' to the corresponding area in the plan.

Figure 3 – Market waste storage area on Basement 2

3.5 Design requirements

3.5.1 Waste storage areas

- All passageways must be at least 1 metre wide.

- The floor of the bin storage area must be concrete and finished to a smooth even surface and coved at the intersections with the walls.
- The floor must be graded to a floor waste connected to the sewerage system. The floor waste must be fitted with an in-floor dry basket arrestor approved by Sydney Water Corporation.
- A tap with a hose connection must be provided in or adjacent to the waste and recycling storage area.
- The walls of the waste and recycling storage room must be constructed of brickwork, concrete block work or similar solid material with the internal wall surfaces cement rendered to a smooth even surface.
- The ceiling of the waste and recycling storage room must be constructed of a rigid smooth faced non-absorbent material. The ceiling must be of a minimum height that enables access for cleaning and enables the lids of bins to be fully opened.
- The internal walls and ceiling of the waste and recycling storage room must be painted with a light coloured washable paint.
- The waste and recycling storage room must be provided with a close fitting self-closing door that is openable from inside the room without the use of a key.
- The doors of the waste and recycling storage room must be finished with a smooth faced impervious material that is capable of being easily cleaned.
- The waste and recycling storage room must be provided with permanent natural ventilation direct to the outside air or a system of mechanical exhaust ventilation.
- The waste and recycling storage room must be provided with artificial lighting controllable by switches outside and inside the room. Sensor lights may be used.
- Clear signage must be displayed in the waste and recycling storage room describing how to use the waste facilities correctly.

3.5.2 Garbage chutes

The Ivanhoe Masterplan allows dual chutes for garbage and recyclables. Each residential level will feature service rooms with two chute access doors installed, one for garbage and one for recyclables. The chutes will discharge into the bins detailed in Section 3.1 above. Two spare bins will also be positioned in the chute rooms on the basements levels to be used when full bins are removed from under the chutes.

The service rooms and the chutes will comply with the requirements stated in the DCP.

3.6 Management and Collection

Residents will deposit their garbage and recycling in the chutes accessed through the service rooms on each floor. These will empty into bins in the waste storage rooms on Basement 1 in Social and Basement 2 in Market. Cleaners or building management staff will exchange the bins at the base of the chutes as required when they are full.

Before each collection day, cleaners, or building management staff, will transfer the bins from the bin storage rooms on Basement 1 and Basement 2 to the Bin Collection Room on Basement 1, adjacent to the heavy vehicle turntable. Transfer of the bins will be undertaken by towing them in a small train behind a tow tug through the carpark and up the car park ramps as required.

Waste streams will be collected by Council. Council's collection vehicle will enter the site in a forward direction, onto the loading dock turntable. Once in the correct position the bins will be emptied into the vehicle. The vehicle will exit the site in a forward direction. The empty bins will then be returned to the waste storage rooms on Basements 1 and 2.

The same process will be followed for residential bulky waste by cleaners or building management staff. Bulky waste from the Social Building will be transferred in a trailer towed by a tow tug to the Bin Collection Room from where it will be collected. Bulky waste from the Market Building will be deposited by residents in the Bin Collection Room and stored there for collection. Bulky waste will be collected from the Bin Collection Room at times when garbage and recycling bins are not stored there for collection.

Bulky waste will be collected by Council from the loading dock. Building management will contact Council when bulky waste is ready for collection. Building management may arrange a regular collection schedule with Council.

Residents in the terraces will place their bins on the kerb of the internal road from where collection vehicles will empty them.

4 Cleaning, Maintenance and Security

Regular cleaning of waste and recycling storage areas will be undertaken by cleaners or building management staff. Building management staff will erect and maintain suitable signage in the waste storage areas. All waste storage areas will be secured and access only available to authorised staff and contractors.

ASIA PACIFIC OFFICES

BRISBANE

Level 2, 15 Astor Terrace
Spring Hill QLD 4000
Australia
T: +61 7 3858 4800
F: +61 7 3858 4801

CANBERRA

GPO 410
Canberra ACT 2600
Australia
T: +61 2 6287 0800
F: +61 2 9427 8200

DARWIN

Unit 5, 21 Parap Road
Parap NT 0820
Australia
T: +61 8 8998 0100
F: +61 8 9370 0101

GOLD COAST

Level 2, 194 Varsity Parade
Varsity Lakes QLD 4227
Australia
M: +61 438 763 516

MACKAY

21 River Street
Mackay QLD 4740
Australia
T: +61 7 3181 3300

MELBOURNE

Level 11, 176 Wellington Parade
East Melbourne VIC 3002
Australia
T: +61 3 9249 9400
F: +61 3 9249 9499

NEWCASTLE

10 Kings Road
New Lambton NSW 2305
Australia
T: +61 2 4037 3200
F: +61 2 4037 3201

PERTH

Ground Floor, 503 Murray Street
Perth WA 6000
Australia
T: +61 8 9422 5900
F: +61 8 9422 5901

SYDNEY

Tenancy 202 Submarine School
Sub Base Platypus
120 High Street
North Sydney NSW 2060
Australia
T: +61 2 9427 8100
F: +61 2 9427 8200

TOWNSVILLE

12 Cannan Street
South Townsville QLD 4810
Australia
T: +61 7 4722 8000
F: +61 7 4722 8001

WOLLONGONG

Level 1, The Central Building
UoW Innovation Campus
North Wollongong NSW 2500
Australia
T: +61 404 939 922

AUCKLAND

68 Beach Road
Auckland 1010
New Zealand
T: 0800 757 695

NELSON

6/A Cambridge Street
Richmond, Nelson 7020
New Zealand
T: +64 274 898 628