The MACK GROUP

WASTE MANAGEMENT PLAN (WMP)

FOR OPERATIONAL WASTE

GENERAL WASTE AND RECYCLABLE WASTE
DA SUBMISSION

Proposed Mixed Use Development
23–37 Lindfield Avenue
Lindfield
(Ku-ring-gai Local Government)

Waste Management Plan prepared for:

Anka Property Group
Level 3, 179 New South Head Road
Edgecliff 2027

Waste Plan prepared by:

The Mack Group
Waste Management Consultants
2 Short St.
Leichhardt 2040 NSW
Tel: 9550 0566
Fax: 9569 9372

The MACK GROUP

WASTE MANAGEMENT PLAN

MIXED USE DEVELOPMENT
Lindfield Avenue, Lindfield

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The MA CK GROUP

WASTE MANAGEMENT PLAN FOR DA

MIXED USE DEVELOPMENT
23-37 Lindfield Avenue, Lindfield

1.0 EXECUTIVE SUMMARY

The site sits between Lindfield Avenue to the southwest and Havilah Lane to the northeast. The project is a mixed development consisting of a podium with two basement levels, a lower ground and a ground floor. Above the podium there are two residential buildings. The proposal comprises 112 units split between the two buildings. One building consists of 7 storeys and the other is 8 storeys. There is also approximately 2340 sqm GFA (1934 NLA) of retail space on the ground floor, split into various size tenancies, including a small supermarket.

In line with the type of development being proposed, being a mix of residential and retail, there will be two separate waste management systems in place. It is proposed that Council waste collection contractors will collect the residential waste and private waste collection contractors will service the retail component.

Two centralized residential waste stores will be located on basement 1 and two centralized residential waste stores will be located on the lower ground floor. Access to the lower ground floor is from Havilah Lane. The Council waste truck will collect all residential bins via the shared zone. It will be able to enter and exit in a forward direction. The bins in the basement 1 central stores will be taken by the caretaker to the two temporary bin collection areas prior to collection. A bin wash space and an on site communal composting area will be provided for the residential component, as will a store for bulky household items.

On-floor waste bin staging stores will be located on each residential floor and will house the general waste chute and interim waste bins for comingled and paper waste. Each building will have two staging stores per floor. Recyclable waste from the staging stores will be taken to the central residential recyclable waste stores by the caretakers.

Retail waste will be collected in waste stores located within each tenancy and moved to the two central retail waste stores on the lower ground floor by each tenant, to await collection.

This report has been prepared based on Ku-ring-gai Municipal Council's Development Control Plan No.40, dated May 1998. This document provides the requirements for waste handling facilities for the DA submission.

Key objectives of the DCP are:

- To encourage building design and construction techniques that minimize waste generation
- To implement the principles of the waste hierarchy of avoiding, reusing and recycling building and construction materials, household generated waste and commercial waste.
- To minimize the environmental impacts of waste
- To promote the principles of ecologically sustainable development
- To meet Council's responsibilities in relation to the Northern Sydney Regional Waste Plan
- To assist in achieving the Federal and State Government waste minimization targets

The basic requirements for waste handling facilities are as follows:

- To be of adequate size
- Integrated with building design and site landscaping.
- Suitably screened from public areas.
- With appropriate access for collection.
- Assurance that OH&S requirements for waste contractors are met.

All waste stores will be fitted out to meet Building Code of Australia and Council requirements.
This report describes the waste management system proposed for the project, including:

- Estimates of waste quantity
- Waste space allocation & equipment
- Management of waste
- Waste segregation and minimization procedures
- Access

2.0 ACCESS

Residential waste

The Council waste truck will utilize the shared zone located at the lower ground floor level and accessed from Havilah Lane. There are two central bin stores on this level, located near the dock space. The path of travel from the bin stores to the shared zone is level.

The bins from the two bin stores in basement 1 will be moved by the caretaker to the temporary bin collection area adjacent to the mailroom and substation. As there is a ramp between the stores and the Lane, an electric tow will be provided for the caretaker to use to move the bins.

Retail waste

The loading area on the lower ground floor level will be utilized by waste trucks collecting the retail waste. The two central bin stores for retail waste are located adjacent to the dock space. The bins will be collected by private contractors. The path of travel from the holding area to the truck area is level.

3.0 SCHEDULE OF USES

Residential Apartments	- Building A	66 units
Residential Apartments	- Building B	46 units
Other Uses - NLA	- Retail	1934 sqm

4.0 WASTE GENERATION SCHEDULE & ESTIMATE OF WASTE VOLUMES

The waste volumes have been estimated using the rates given by Ku-Ring-Gai Municipal Council. A summary of the estimated volumes has been tabulated below.

Residential
Estimate of Waste Volume/ Week

01. Assumptions

On-floor waste bin staging stores will be located on each residential floor and will house the general waste chute and interim waste bins for comingled and paper waste. Each building will have two staging stores per floor. Recyclable waste from the staging stores will be taken to the central residential recyclable waste stores by the caretakers.

- General waste = 240 L per 2x units, collected weekly
- Comingled waste = 240 L per 4x units, collected weekly
- Paper waste = 240 L per 4x units, collected weekly
- Green waste is collected by separate arrangement, can be by Council, or others
- Proposed bin size = 660 L = 850 x 1370 x 1250 mm high
- Entries to chutes are located in the staging stores on each floor
- In staging areas, recyclable waste will be held in small bins, 2x per area. These will be cleared by the caretaker on a regular basis.
- Additional area provided in store for "bulky items" waste

02. Building A

General waste generated per week

Chute A1 = 34 units @ 240 L/ 2x units =	17 bins @ 240L =	6.2 bins @ 660L
Chute A2 = 32 units @ 240 L/ 2x units =	16 bins @ 240L=	5.8 bins @ 660L

Comingled waste generated per week

34 units @ 240 L/ 4x units =	8.5 bins @ 240L =	3 bins @ 660L
32 units @ 240 L/ 4x units =	8.5 bins @ 240L =	3 bins @ 660L

Paper waste generated per week

34 units @ 240 L/ 4x units =	8.5 bins @ 240L =	3 bins @ 660L
32 units @ 240 L/ 4x units =	8.5 bins @ 240L =	3 bins @ 660L

03. Building B

General waste generated per week

Chute B1 = 23 units @ 240 L/ 2x units =	11.5 bins = 4.2 @ 660L bins
Chute B2 = 23 units @ 240 L/ 2x units =	11.5 bins = 4.2 @ 660L bins

Comingled waste generated per week

23 units @ 240 L/ 4x units =	8.5 bins = 3 @ 660L bins
23 units @ 240 L/ 4x units =	8.5 bins = 3 @ 660L bins

Paper waste generated per week

23 units @ 240 L/ 4x units =	8.5 bins = 3 @ 660L bins
23 units @ 240 L/ 4x units =	8.5 bins = 3 @ 660L bins

Retail - Estimate of Waste Volume/ Week

01. Retail - Assumptions

- Residential waste and retail waste will be kept separate
- Retail general waste and recyclable waste will be kept in separate sections
- Retail week = 7 days
- Collection will be 6 times per week
- Where more than 50 litres of waste meat/ seafood/ poultry is generated, daily collection will be required. Alternatively refrigerated holding space will be required. To be provided by the relevant tenant.
- Council does not provide collection for non-residential uses.
- This report is part of the development application process. The final sizing of waste stores and frequency of waste collection will be made once final tenancy agreements are in place and tenancy types are determined.

02. Table 1

Retail – Estimate of Waste Volume

Area	Size sqm	Rate L per 100 sqm	Total L per day	Total L per week
Supermarket				
General	1147	240	2752.8	19270
Recyclable	1147	240	2752.8	19270
Butcher, Bakery, Deli-Café				
General	249	80	199.2	1395
Recyclable	249	50	124.5	872

Liquor, Pharmacy, Newsagent, Travel Agent, Bank, Office				
General	538	50	269	1883
Recyclable	538	50	269	1883

5.0 ESTIMATE OF REQUIRED STORAGE SPACES IN MAIN WASTE STORES

The long term aim of the waste management strategy is to provide an ongoing and coordinated waste management service that satisfies mandatory authority requirements and is adaptable to changing operational needs.

Council, working with Center Management, will be responsible for providing a residential waste removal service. The caretaker will be responsible for moving the bins to the central waste stores and for cleaning all the waste handling areas.

Private waste collection contractors, working with Center Management, will be responsible for providing a commercial waste removal service. The caretaker will be responsible for moving the bins to the central waste stores and for cleaning all the waste handling areas.

Due to the various types of waste originating from the development, it is proposed to manage the waste collection as follows:

Size of Main Waste Stores/ Residential

Lower Ground

01. Store A1
General waste = say, 6 bins
Comingled waste = 3 bins
Paper waste = 3 bins
Total store size = 12 bins

02. Store A2
General waste = say, 6 bins
Comingled waste = 3 bins
Paper waste = 3 bins
Total store size = 12 bins

Basement 1

01. Store B1
General waste = say, 4 bins
Comingled waste = 3 bins
Paper waste = 3 bins
Total store size = 10 bins

02. Store B2
General waste = say, 4 bins
Comingled waste = 3 bins
Paper waste = 3 bins
Total store size = 10 bins

Space is to be provided inside the central waste store for a bin wash area.

A bulky items store has been provided on Basement 1

Size of Main Waste Stores/ Retail

Supermarket

Assume 660L bins
General waste = 19270L/ week = 5 bins (6 pick ups/ week)
Recyclable waste = 19270L/ week = 5 bins (6 pickups/ week)

Other retail

Assume 240L bins
General waste = 3278L/ week = 3 bins (6 pick ups/ week)
Recyclable waste = 2755/ week = 2 bins (6 pick ups/ week)

Note:
The above calculations need to be coordinated with the final tenancy guidelines.

Space is to be provided inside the central waste store for a bin wash area.

6.0 MANAGEMENT OF INTERNAL WASTE REMOVAL

Residential Waste

Residential recyclable waste will be initially collected in bins in the staging stores on each floor. From there it will be taken down via the lifts to the main residential waste stores, by the caretaker. General waste from the residential component will be dropped down the on-floor chutes and into bins, by each resident. Bins will be moved to the central holding areas, located on the lower ground floor and basement 1, by the caretaker. Accessible access for tenants and a bin wash area have been provided. The caretaker will have an electric tow for moving the bins from basement 1 to the collection area.

Retail Waste

The retail waste will be collected in bins located within each tenancy. The tenants will be responsible for the location and sizing of these bins and suitable store areas. The tenants will move the bins to the central retail waste stores. Accessible access for tenants and a bin wash area have been provided.

7.0 WASTE REMOVAL AND VEHICLE MANOEUVRING

Residential Waste

The Council residential waste collection vehicle will park in the dedicated space on the lower ground floor level and Council contractors will take the bins from the adjacent waste store to the vehicle for emptying. Bins on the lower ground floor level waste stores will be collected on this level. Bins on Basement 1 will be taken to the temporary bin collection point by the caretaker and collected from there by Council. Accessible access for collection contractors has been provided. Trucks will be able to enter end exit in a forward direction.

Retail Waste

The retail waste collection vehicle will park in the dedicated space on the lower ground floor level and the private contractors will take the bins from the adjacent waste store to the vehicle for emptying. Accessible access for the collection contractors has been provided. Trucks will be able to enter and exit in a forward direction.

8.0 WASTE SEGREGATION AND MINIMISATION

The waste strategy for the development will be continually evaluated by Center Management, to improve the service provided and to achieve the NSW Government's residential and retail waste reduction targets, through improved recycling methods and aiming to minimize waste.

Centre Management will arrange for an Environmental Management System addressing residential and retail waste collection and recycling procedures. This will include expectations and achievable objectives for sorting and separating waste.

Residential

General waste

Waste will be dropped down the chute to a bin. The caretaker will check and swap bins as required.

Recyclable waste

Each resident will be responsible for separating recyclable waste from non-recyclable waste. Recycling bins for nominated waste categories will be provided at the residential waste staging store rooms for:

- Paper and cardboard
- Glass/ plastics/ aluminium cans/ metal

The caretaker will move the bins to the main waste stores

Retail

General Waste

Each tenant will be responsible for holding their waste within their tenancy in suitable bins, located in nominated spaces, until ready for collection. The tenants will be responsible for moving the bins to the main waste store.

Recyclable Waste

Each tenant will be required to segregate their waste into recycling bins as follows:

- Paper and cardboard
- Glass/ plastics/ aluminium cans/ metal

The tenants will move the bins to the central waste store

Hazardous Waste

Should any of the tenancies produce hazardous waste (eg. chemist shop), it will be treated as follows:

- A colour coded plastic bag will be used to hold all hazardous waste.
- A rigid impenetrable container will be used to transport this waste.
- The container will have a securely fixed lid with a child proof catch.
- The container will be clearly marked with the words "contaminated waste"
- The name of the collection company and the date of collection will be recorded and kept by the cleaning contractor.

Where food waste is produced, the tenants will be responsible for either providing refrigerated storage or arranging for a daily collection service.

9.0 WASTE STORES REQUIREMENTS

Bin storage areas and the main waste stores will be designed line with Council and DCP 40 requirements.

Floor finish
To be sealed concrete slab, graded and drained to meet Sydney Water Guidelines.
The floors must be a washable, non-slip, smooth, even surface, coved at wall joints, finished in a light colour.

Wall finish
The walls must be a solid, impervious material, cement rendered to a smooth washable surface, finished in a light colour.

Ceiling finish
Must be finishes in a rigid smooth, non-absorbent material, capable of being easily cleaned., finished in alight colour

Drainage
Stores are the graded and drained to sewer and grease trap

Doors
Must be tight fitting to prevent the entry of vermin

Ventilation
All the waste stores must be ventilated by either natural ventilation (5 litres/ sqm) or be mechanically ventilated. The ventilation system will comply with AS 1668 Parts 1 & 2 and Council's ventilation guidelines.

Lighting
Waste stores must be suitably lit with artificial lighting.

Safety
All equipment must have safe operation procedures in place. Appropriate safety signage must be provided

Bin washing
Provide a trapped gully and hot and cold water mixer tap in each central waste store

Grease Traps
A grease trap maybe required and the hydraulic consultant will to coordinate this with Sydney Water. Refer to Sydney Water Guidelines for requirements

Composting
An area (an unpaved earth surface) will be nominated, accessible to all residents, on which a composting facility could be provided. This will be ultimately subject to consideration by the residents, via the Body Corporate.

Path of travel – from bin holding area to truck
- No steps or kerbs
- Maximum transfer distance = 50 metres
- Maximum gradient = 1:14

Waste stores in Food Premises/ tenancies will also need to comply with AS 4674-2004.

APPENDIX A

- Plan showing Main Waste Stores – Basement 1
- Plan showing Main Waste Stores – Lower Ground
- Typical waste bins
- Typical waste collection vehicles
- Typical chutes

Note:
All calculations have been based on the architectural drawings and area schedules as follows:

Basement 2 Plan	CA 2924 ADAZ 1000 A
Basement 1 Plan	CA 2924 ADAZ 1001 A
Lower Ground Plan	CA 2924 ADAZ 1002 A
Ground Plan	CA 2924 ADAZ 1003 A
Level 1 Plan	CA 2924 ADAZ 1004 A
Level 2 Plan	CA 2924 ADAZ 1005 A
Level 3 Plan	CA 2924 ADAZ 1006 A
Level 4 Plan	CA 2924 ADAZ 1007 A
Level 5 Plan	CA 2924 ADAZ 1008 A
Level 6 Plan	CA 2924 ADAZ 1009 A
Level 7 Plan	CA 2924 ADAZ 1010 A

TYPICAL WASTE BIN

660 Litre Container

Material

- **Polymer components:**
- Injection moulded from specially designed HDPE
- Resistant to decay, frost, heat and chemicals
- Special UV-stabilisation provides excellent ageing characteristics
- **Corrosion resistant steel components:**
- Wheel forks, wheel bearings, swivel brackets and screws from corrosion resistant steel – no maintenance necessary
- **Noise reduction:**
- Wheel assemblies with solid rubber tyres
- **Long service life:**
- High quality materials
- Most advanced manufacturing processes
- Withstands exposure to high mechanical stress levels
- **Recycling:**
- All container parts are recyclable

Advantages

- Easy handling through the use of ergonomic handles
- Versatile, with a comprehensive accessories range
- Optional, easy to use lid within a lid
- Complies fully with EN or RAL quality requirements
- User-friendly handles on all sides
- User friendly handles at the rear of the container
- Safe, easy handling, even with heavy loads
- Various wheel assembly configurations for different applications
- Water drainage plug as standard (except for medical waste containers)
- Compatible with identification and weighing systems
- Suitable for all DIN lifting equipment

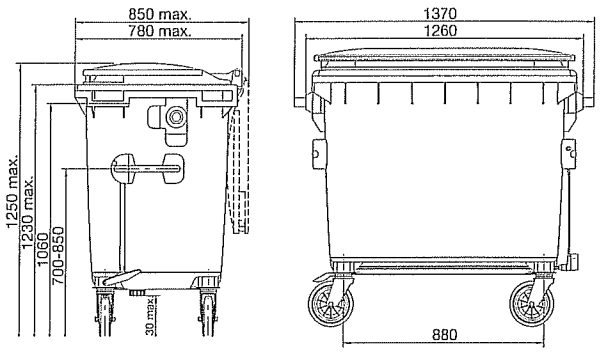
Accessories

- For accessories and special design variations such as lid apertures, locks, towing brackets and fork lift sleeves, please refer to the separate accessories sheet for 4-wheeled containers

Dimensions – Weights – Standards

Nominal volume:	660 litres
Net weight:	approx 43 kg
Max load:	264 kg
Permitted total weight:	310 kg

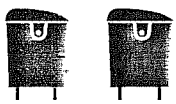
Measurements to be used as a guide only – variations will occur



All dimensions according to EN 840

Colours

- Standard colours: green, blue, yellow
- Special colours are available on request (in batch quantities only)
- All additives are cadmium free and environmentally friendly



Imprints and markings

- Manufacturer, year of manufacture, material
- Nominal volume, max permitted total weight
- EN 840, RAL markings
- Individual markings with imprints, screen printing, hot-foil printing or adhesive labels available on request (in batch quantities only)

SULO

Sulo MGB Australia Pty Ltd
123 Wisemans Ferry Road
Somersby NSW 2250
AUSTRALIA
Telephone:+ 61 (0) 2 - 4348 8188
Facsimile: + 61 (0) 2 - 4348 8128
Internet: www.sulo.com.au
E-mail: info@sulo.com.au

Sulo – Queensland office
11 Argon Street
Sumner Park QLD 4074
AUSTRALIA
Telephone:+ 61 (0) 7 - 3271 9800
Facsimile: + 61 (0) 7 - 3271 9813

Sulo – Victorian office
6 Capital Link Drive
Campbellfield VIC 3061
AUSTRALIA
Telephone:+ 61 (0) 3 - 9357 7320
Facsimile: + 61 (0) 3 - 9357 7340

10-2003/ Subject to technical amendments.

TYPICAL WASTE COLLECTION VEHICLE - PRIVATE

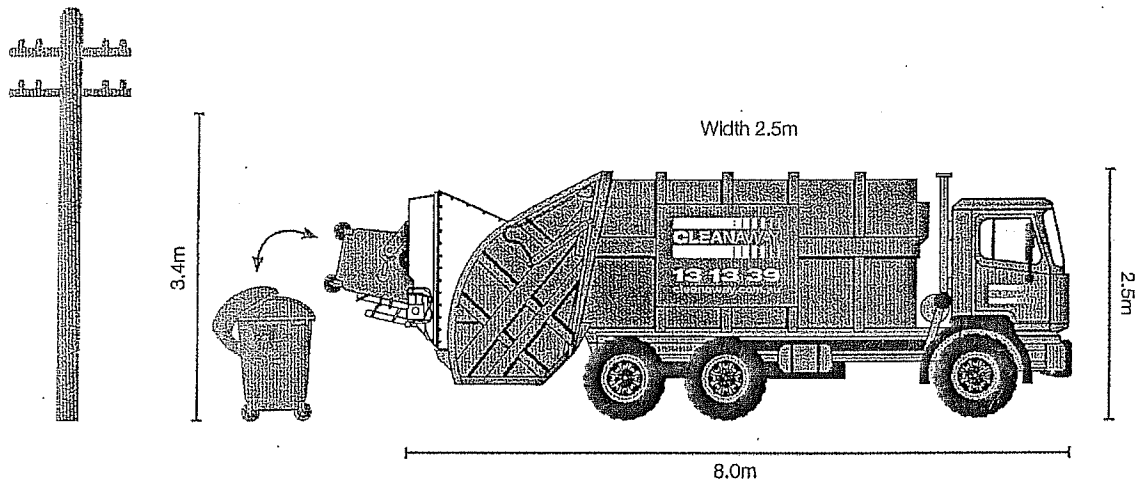
Container Measurements

Capacity	Width (m)	Depth (m)	Height (m)
120 litre	0.48	0.86	0.925
240 litre	0.58	1.0	1.08
660 litre	1.14	0.64	1.22
1,100 litre	1.28	1.21	1.46

Vehicle Specifications and Bin Safety

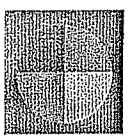
Consider the following dimensions to ensure the Rear Lift system is the right one for you:

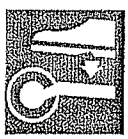
Vehicle clearance (height)..... 2.5 metres
Vehicle clearance (width)..... 2.5 metres
Vehicle clearance (length)..... 8.0 metres
Vehicle height in operation..... 3.4 metres
Vehicle turning circle..... 17.7 metres



Options


Bin Washing Service


Colour-coded for recycling


Foot Brakes*


Lid Lock

*Standard on 660 and 1,110 Litre bins

TYPICAL GARBAGE CHUTE

GARBAGE CHUTES

Materials
Chutes are available in either 1.6mm Zincalume, Stainless Steel and Galvabond.

Intakes
Intake is via Stainless Steel, hydraulic, bottom-hinged, hand-operated doors. Doors can feature a two hour fire rating if required. Non-fire rated doors are also available. Locks are optional for fire rated doors.

Discharge
An open end with a normally open A-Type door.

Roof Vent
Either full diameter or 150mm diameter vents may be used, depending on local requirements.

Accessories
Include a 20mm flushing spray head and 15mm sprinkler head above the top intake. Additional 15mm sprinkler heads may be fitted.

Construction
The chute is fully factory assembled. All joints except those required to separate sections for shipment and installation are welded or lockseamed tight. Intake doors are bolted in place on throats formed in the chute tube. All sections flash into the sections below, with no bolts, clips or other projections to obstruct the flow of material. Pre-positioned support frames assure proper intake levels and the chute has expansion joints between all support points. Discharge hoppers and offsets (where required) are reinforced and separately supported in the impact area.

Installation
The chute should be assembled in place and aligned and anchored as required. **Plumbers** - run water supplies to the flushing and sprinkler heads. **Electricians** - run conduit and wiring to electrical equipment such as interlocks or heat detectors (where fitted). **Bricklayers/carpenters** - erect walls around the chute after all other work is completed. Set intake door frames square and flush with the finished wall face as the walls are erected.

LINEN CHUTES

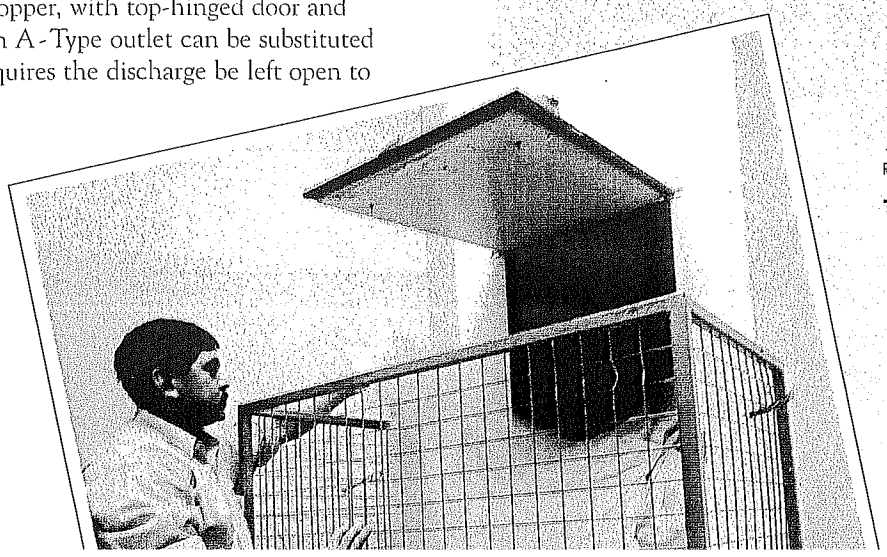
Materials
As with garbage chutes, linen chutes are available in 1.6mm Zincalume, Stainless Steel and Galvabond.

Intakes
Intake is via Stainless Steel, hydraulic, hand-operated, side-hinged doors. They feature two hour fire rating and cylinder locks.

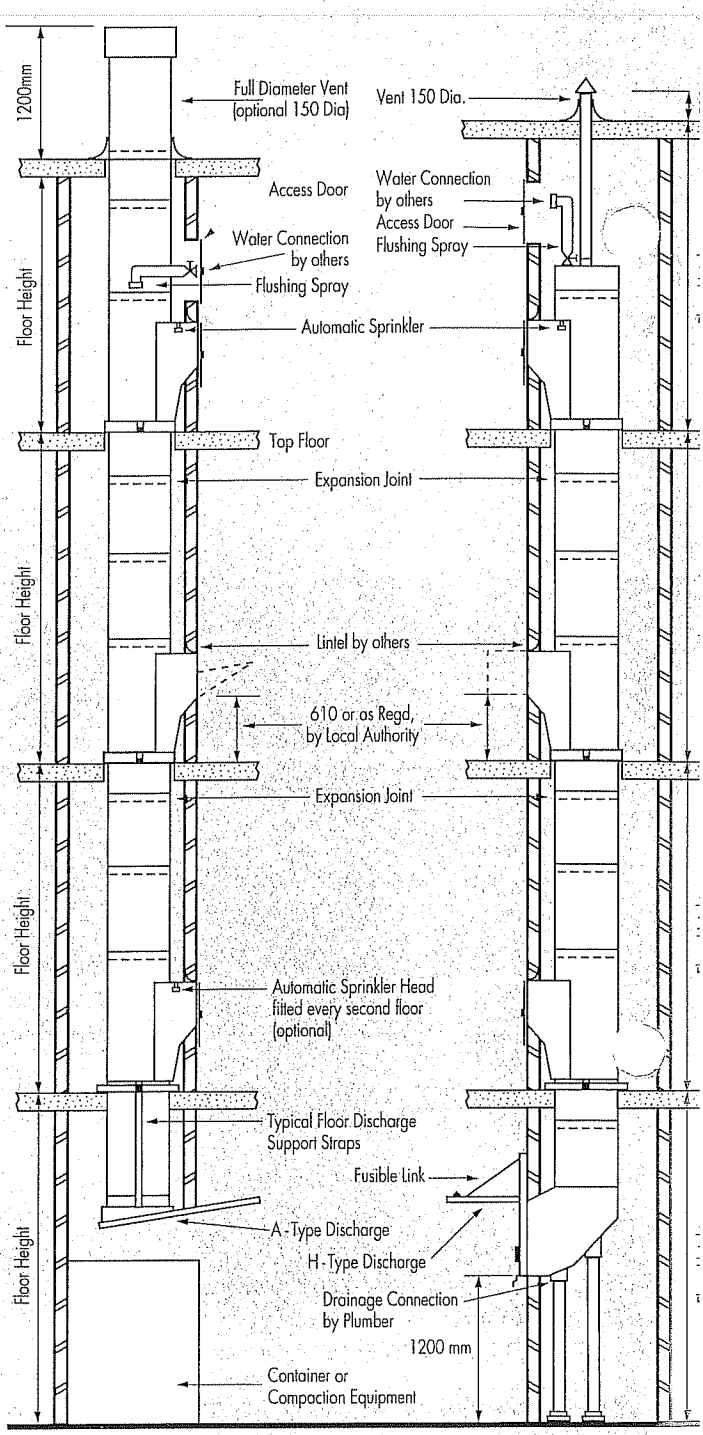
Discharge
An H-Type storage hopper, with top-hinged door and reinforced bottom. An A-Type outlet can be substituted where heavy usage requires the discharge be left open to prevent build up.

Roof Vent
A 150mm diameter vent made from the chute material or PVC.

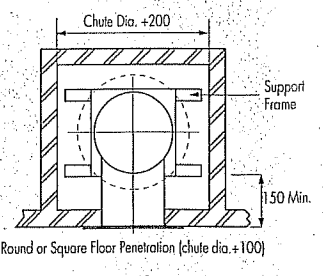
Accessories, Construction and Installation - see garbage chute specifications.



Photographic locations courtesy Hotel Sofitel/Novotel.



Garbage Chute **Linen Chute**



Typical Intake Detail

COLOR FILL LEGEND

AMENITY	GARBAGE	MECH. RISER	RESIDENT(A)	SERVICE ZONE
CIRCULATION	HORIZONTAL TRANSPORTATION	PARKING	RESIDENT(B)	TANKS
ELECTRICAL RISER	HYD/FIRE RISER	PUBLIC AREA	RETAIL	VERTICAL TRANSPORTATION

1 / 1001 **BASEMENT 1**
SCALE 1 : 200

Parking Schedule By Levels	
Parking Type	Level
BASEMENT 2	
Resident Parking Spaces: 2600x5400	BASEMENT 2
56	
Resident Parking Spaces: 2600x5400 (Accessible)	BASEMENT 2
5	
BASEMENT 2: 61	
BASEMENT 1	
Resident Parking Spaces(Visitor): 2600x5400	BASEMENT 1
18	
Resident Parking Spaces(Visitor): 2600x5400 (Accessible)	BASEMENT 1
1	
Resident Parking Spaces: 2600x5400	BASEMENT 1
40	
BASEMENT 1: 59	
LOWER GROUND	
Retail Parking Spaces: 2600x5400	LOWER GROUND
40	
Retail Parking Spaces: 2600x5400 (Accessible)	LOWER GROUND
2	
LOWER GROUND: 42	
Grand total: 162	

Parking Space Schedule	
Parking Spaces	Count
Resident Parking Spaces	101
101 (B1 / B2)	
Resident Parking Spaces(Visitor)	19
19 (B1 / B2)	
Retail Parking Spaces	42
42 (Lower Ground)	
Grand total: 162	

SECTION 75W SUBMISSION

Notes
All dimensions and setouts to be verified prior to commencement, omissions or discrepancies to be notified to the architect.

Quality Assurance System

Authorised By: **Date:**

Rev	DESCRIPTION	By	Date
A	ISSUED FOR SECTION 75W SUBMISSION	MQ	20/11/2012

Builder

Client
ANKA (CIVIC CENTER) PTY LTD
LEVEL 3
179-191 NEW SOUTH HEAD RD
EDGECLIFF, SYDNEY NSW 2027
Ph: +61 2 9302 3000
Fax: +61 2 9302 3030

ANKA

Structural Engineer
AECOM
Level 21, 420 George St, Sydney NSW 2000
Ph: 02 8934 0000 Fax: 02 8934 0001

Mechanical Engineer
WOOD & GRIEVE ENGINEERS
Level3, 454 - 456 Pacific Highway,
St. Leonards, NSW 2000
Ph: 02 8484 7000 Fax: 02 8484 7100

Electrical Engineer
WOOD & GRIEVE ENGINEERS
Level3, 454 - 456 Pacific Highway,
St. Leonards, NSW 2000
Ph: 02 8484 7000 Fax: 02 8484 7100

Hydraulic Engineer
INSYNC SERVICES
Suite 8, Level 2, 56 Church Ave.
Mascot, NSW 2015
Ph: 02 9669 4311 Fax: 02 9669 4322

Landscape Architect
ASPECT Studios
Studio 61 – Level 6, 61 Marlborough St
Surry Hills, NSW 2010
Ph: 02 9699 7182 Fax: 02 9699 7192

KEY

Scale 1 : 200 @A1

cronepartners
Cronepartners
level 2, 364 kent street,
sydney, nsw 2000, australia
Ph: +61 2 8295 5300
Fax:+61 2 8295 5301

Project
LINDFIELD MIXED-USE DEVELOPMENT
23-37 LINDFIELD AVE & 11 HAVILAH LA
LINDFIELD NSW 2070

Drawn: MQ **Checked:** VD **Date: 20/11/2012**

Drawing Title
BASEMENT 1 PLAN

SECTION 75W SUBMISSION

Project no.	Drawing Phase.	Drawing No.	Rev
CA 2924	ADAZ	1001	A

Plot Date: 29/11/2012 12:07:48 PM

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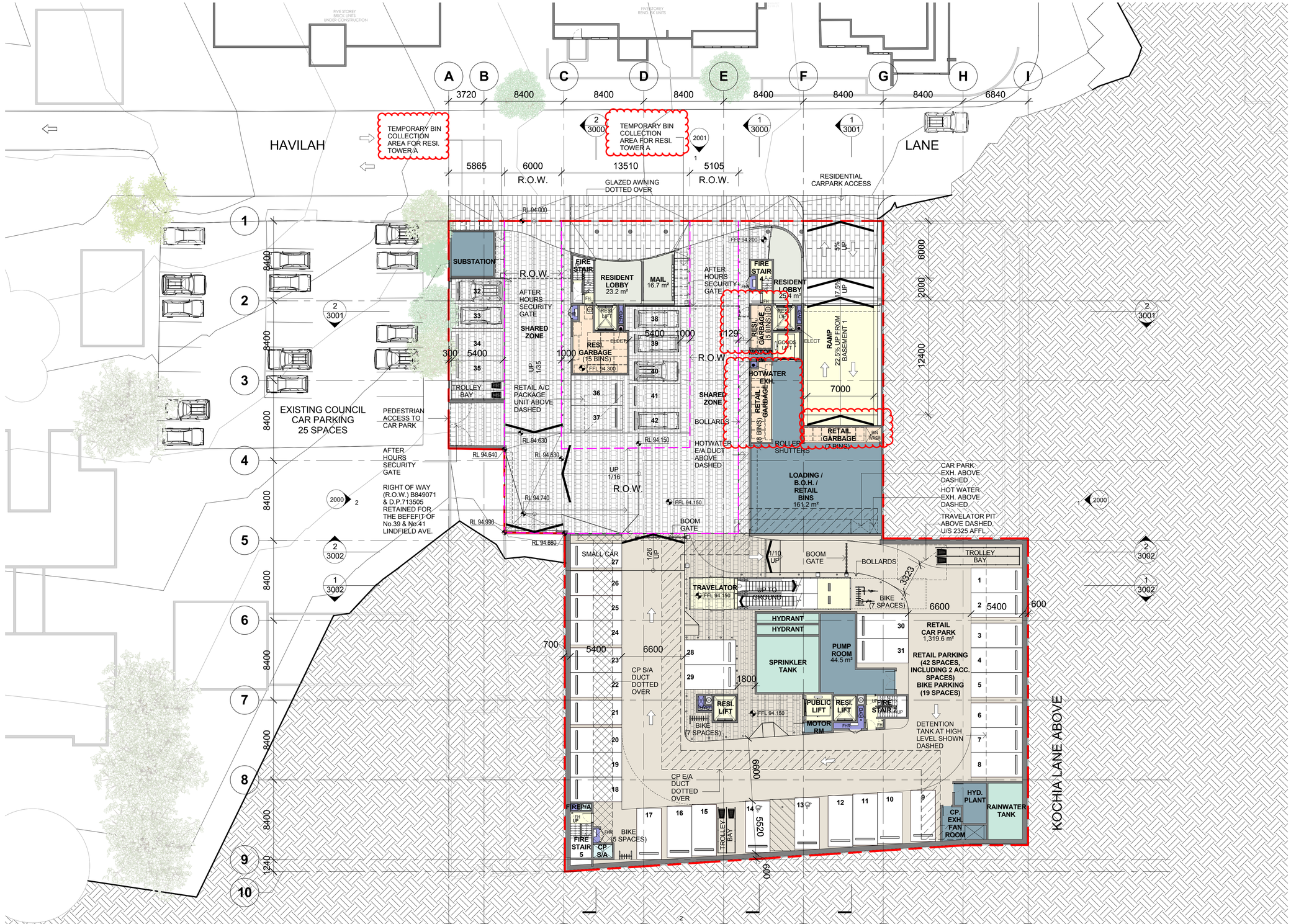

COLOR FILL LEGEND

- AMENITY
- CIRCULATION
- ELECTRICAL RISER
- GARBAGE
- HORIZONTAL TRANSPORTATION
- HYD/FIRE RISER
- MECH. RISER
- PARKING
- PUBLIC AREA
- RESIDENT(A)
- RESIDENT(B)
- RETAIL
- SERVICE ZONE
- TANKS
- VERTICAL TRANSPORTATION

Parking Space Schedule	
Parking Spaces	Count
Resident Parking Spaces	101
101 (B1 / B2)	
Resident Parking Spaces(Visitor)	19
19 (B1 / B2)	
Retail Parking Spaces	42
42 (Lower Ground)	
Grand total: 162	

SECTION 75W SUBMISSION

1 / 1002 **LOWER GROUND**
SCALE 1 : 200

Notes
All dimensions and setouts to be verified prior to commencement, omissions or discrepancies to be notified to the architect.

Copyright

Quality Assurance System

Authorised By: **Date:**

Rev	DESCRIPTION	By	Date
A	ISSUED FOR SECTION 75W SUBMISSION	MQ	20/11/2012

Builder

Client
ANKA (CIVIC CENTER) PTY LTD
LEVEL 3
179-191 NEW SOUTH HEAD RD
EDGECLIFF, SYDNEY NSW 2027
Ph: +61 2 9302 3000
Fax: +61 2 9302 3030

ANKA

Structural Engineer
AECOM
Level 21, 420 George St, Sydney NSW 2000
Ph: 02 8934 0000 Fax: 02 8934 0001

Mechanical Engineer
WOOD & GRIEVE ENGINEERS
Level3, 454 - 456 Pacific Highway, St. Leonards, NSW 2000
Ph: 02 8484 7000 Fax: 02 8484 7100

Electrical Engineer
WOOD & GRIEVE ENGINEERS
Level3, 454 - 456 Pacific Highway, St. Leonards, NSW 2000
Ph: 02 8484 7000 Fax: 02 8484 7100

Hydraulic Engineer
INSYNC SERVICES
Suite 8, Level 2, 56 Church Ave, Mascot, NSW 2015
Ph: 02 9669 4311 Fax: 02 9669 4322

Landscape Architect
ASPECT Studios
Studio 61 – Level 6, 61 Marlborough St Surry Hills, NSW 2010
Ph: 02 9699 7182 Fax: 02 9699 7192

KEY

Scale 1 : 200 @A1

cronepartners
Cronepartners
level 2, 364 kent street,
sydney, nsw 2000, australia
Ph: +61 2 8295 5300
Fax:+61 2 8295 5301

Project
LINDFIELD MIXED-USE DEVELOPMENT
23-37 LINDFIELD AVE & 11 HAVILAH LA
LINDFIELD NSW 2070

Drawn: MQ **Checked:** VD **Date: 20/11/2012**

Drawing Title
LOWER GROUND FLOOR PLAN

SECTION 75W SUBMISSION

CA 2924	ADAZ	1002	A
Project no.	Drawing Phase.	Drawing No.	Rev

Plot Date: 29/11/2012 12:10:45 PM

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