

**J D MACDONALD**

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# **WASTE MANAGEMENT PLAN**

**APRIL 2011**

## **LINDFIELD RETAIL & RESIDENTIAL**

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**PREPARED FOR ANKA PROPERTY GROUP  
FOR SUBMISSION TO DEPARTMENT OF PLANNING**



**JD MACDONALD  
WASTE MANAGEMENT CONSULTANTS**

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## 1.0 INTRODUCTION

The waste management plan to follow pertains to the mixed-use development located at 23-37 Lindfield Ave, Lindfield. This waste management plan is an operational waste management plan and will address the operational phases of the development. A Construction Waste Management Plan will need to be prepared by the contractor engaged for the construction stage of the development.

The plan outlines measures to achieve the following purposes:

- Avoid the generation of unnecessary waste;
- Minimising the quantities of wastes generated ending up as landfill;
- Recovering, reusing and recycling waste generated on site where possible;
- Compliance with any codes and policies that may apply to the development.

For the purpose of this report the proposed development will consist of two (2) primary sections as follows:

- **Residential** – 91 residential apartments on Levels 2 to 7 of the two residential towers.
- **Retail Tenancies**- Retail space located on Ground floor & Level one with a total nett lettable area of approximately 3,298m<sup>2</sup>.

Each section of this development has been examined individually within this report; however, the waste management process must be effectively coordinated between all sections for the system to work.

All figures and calculations are based on building areas and room numbers as shown on architectural drawings. Calculations have been made using waste generation rates devised from industry guidelines and using calculations listed within Ku-ring-gai Councils “Town Centre Development Control Plan,” “Better Practice Guide for Waste Management in Multi- Unit Dwellings 2007” Adapted from Waverley Council Code for the Storage and Handling of Waste. All recommendations for waste facilities and equipment will be in compliance with Australian Standards, BCA and Ku-ring-gai Municipal Council.

## 2.0 GENERATED WASTE VOLUMES

This assessment of waste volumes is an estimate only and will be influenced by the development's management and occupant's attitude to waste disposal and recycling. We have based our calculations on a seven- (7) day operating week. Figures could be affected however, by apartment occupancy rates.

### 2.1 Residential

Using waste generation rates listed in Ku-ring-gai Municipal Council's "Town Centre Development Control Plan for Waste Management", the general waste generated by the residential section of the development can be calculated as follows:

<b>General Waste</b>			
Building	Units	Waste Generation Rate per Unit	Waste Generation
		<i>L/unit/collection</i>	<i>L/per week</i>
Residential	91	80	7,280
<b>Total</b>	<b>91</b>		<b>7,280</b>

Council provides a co-mingled recyclable waste collection service. Using waste generation rates listed in Ku-ring-gai Municipal Council's "Town Centre Development Control Plan for Waste Management", the recyclable waste generated by the residential section of the development can be calculated as follows:

<b>Recyclable Waste</b>			
Building	Units	Waste Generation Rate per Unit	Waste Generation
		<i>L/unit/collection</i>	<i>L/per week</i>
Residential	91	40	3640
<b>Total</b>	<b>91</b>		<b>3640</b>

## 2.2 Green Grocer/Supermarket/Medical/Retail

Using standard industry waste generation rates, the total waste generated by the retail section of the development can be calculated as follows:

We have based our calculations on a six (6) day operating week. Figures could be affected however, by changes in retail usage at a later date.

### General Waste:

General Waste					
Location	Waste Generation Rate	Floor Area	Waste Generation	Collection Frequency	Waste Generation
<i>Reference</i>	<i>L / 100sq.m / day</i>	<i>sq.m</i>	<i>L / day</i>	<i>Days</i>	<i>L / collection</i>
Retail Space	100	1322	1322	1	1322
Green Grocer	240	312	749	1	749
Supermarket	240	1371	3290	1	3290
Medical	10	293	29	1	29

### Recycling waste:

Recyclable Waste					
Location	Waste Generation Rate	Floor Area	Waste Generation	Collection Frequency	Waste Generation
<i>Reference</i>	<i>L / 100sq.m / day</i>	<i>sq.m</i>	<i>L / day</i>	<i>days</i>	<i>L / collection</i>
Retail Space	50	1322	661	1	661
Green Grocer	120	312	374	1	374
Supermarket	240	1371	3290	1	3290
Medical	20	293	57	1	57

## **3.0 WASTE MANAGEMENT RECOMMENDATIONS**

### **3.1 General Waste**

#### **Residential**

Both the residential buildings will be serviced via two (2) garbage chutes per building located alongside the lift shafts for the handling of general waste. The garbage chute will discharge directly in to awaiting towable 1000ltr plastic mobile garbage bins. The bins will be located within the dedicated garbage rooms on Basement 1.

All residential bins will be stored in the dedicated residential garbage rooms for the residential buildings located on Basement 1.

Each resident will be provided with a waste cupboard space within their apartment for the storage of general waste until it is disposed of.

#### **Green Grocer/Supermarket/Medical/Retail**

It is recommended that each retail tenant be responsible for their own in house storage of general waste. At the end of the day, staff from the tenancies will transport the waste to the retail garbage storage area located on Ground Floor and place it in the collection containers provided for general waste.

### **3.2 Recyclable Waste**

#### **Residential**

The recycled waste will be stored via the use of 240L colour-coded receptacles as adopted by the “Australia and New Zealand Environment and Conservation Council” (ANZECC). The proposed method of waste handling for tenants is that they will have facilities for the storage and sorting of a day’s waste in house. Two (2) 50L recycling crates will be provided in a cupboard per chute intake point for the storage of recyclable material. As these crates become full, the appointed waste caretaker will empty the crates into the 240L mobile garbage bins stored within the residential garbage rooms at Basement 1.

Each resident will be provided with a waste cupboard space within their apartment for the storage of recyclable waste until it is disposed of.

### **Green Grocer/Supermarket/Medical/Retail**

It is recommended that each retail tenant be responsible for their own in house storage of recycling waste. At the end of the day, staff from the tenancies will transport the waste to the retail garbage / recyclables storage area located on Ground Floor and place it in the collection containers provided for recycling waste.

It is expected that the majority of recyclable waste generated by these tenants will most likely be paper recyclable products such as cardboard boxes and paper products. All retail recycling will be stored in the retail garbage / recyclables room located on Ground Floor.

### **3.3 External Collection of Waste**

#### **Residential**

Residential waste will be collected by Ku-ring-gai Council collection vehicles. The collection process will occur with the collection vehicle utilising the loading dock area accessed off Havilah Lane. The collection vehicle will be parked within the loading dock throughout the collection procedure with all bins collected directly from the holding area in the loading dock.

Ku-ring-gai Council will provide a weekly collection service for general waste and recyclable waste.

#### **Green Grocer/Supermarket/Medical/Retail**

Green Grocer/Supermarket/Medical/Retail waste will be collected by a nominated private waste contractor. The collection process will occur with the collection vehicle utilising the loading dock area accessed off Havilah Lane located on Upper Ground. The collection vehicle will be parked within the loading dock throughout the collection procedure with all bins collected directly from there respective garbage / recyclables storage area.

It is recommended that all commercial waste be collected on a daily collection basis. However, this should be closely monitored and the collection frequency varied to suit the needs of the various tenants.

### 3.4 Waste Caretaker

It is strongly recommended that a waste caretaker be employed to manage the garbage system of this development. Further more, it is also strongly recommended that a part time care taker be employed to manage the system in the full time caretakers absence, i.e. on weekends and Public Holidays when the waste generation is expected to peak.

The caretaker's duties would include the following:

- ◆ Generally maintaining and cleaning the garbage rooms. (Recommended at least once per week)
- ◆ Organising, maintaining and cleaning the general and recycled waste holding areas. Due to the nature of the waste it is recommended that in addition to cleaning, the garbage rooms be deodorised (**recommended at least once per week**).
- ◆ Sorting recycled waste into appropriate receptacles.
- ◆ Organising for both Garbage and Recycled Waste pick-ups as required.
- ◆ Transporting appropriate waste containers between garbage rooms and collection areas to coincide with collection cycles and vice versa.
- ◆ Assisting with the emptying of bins during collection.

### 3.5 Organic Waste

It is recommended that all organic waste be handled and managed by the personnel responsible for maintaining landscaped areas.

## 4.0 WASTE EQUIPMENT RECOMMENDATIONS

The following waste equipment and quantity recommendations have been made based on expected waste generation quantities.

### 4.1 Residential

#### General Waste

Based on the previously stated waste generation our recommendations for waste handling equipment are as follows:

*Garbage Chute* – 510mm diameter specifications to meet council requirements, as supplied by J D MacDonald.

The garbage chute will service all residential levels and will transport the waste directly to the awaiting 1000 ltr plastic mobile garbage bins.

***Qty Required – four (4) two for each Residential Apartment building.***

*1000 Containers* – Ku-ring-gai Council provides a weekly collection service for residential general waste. Utilising the previously calculated residential waste generated for the residential section, the waste per collection and appropriate ***1000ltr containers*** requirements are:

*Residential Apartments:*

General Waste	7,440L/ week
Collections/Week	1
Compaction	N/A
<b>Loose Waste</b>	7,280 L
<b>No. of 1000L Bins</b>	<b>8</b>

***Note: This is the total number of bins per collection for all chutes.***

It is suggested that an extra one bin be purchased per chute to allow uninterrupted operation of the chute during collection times.

***Qty Required –Twelve (12) total***

### **Recycled Waste**

Based on the previously stated recycled waste generation our recommendations for waste handling equipment are as follows:

*Collection Containers* - As adopted by the "Australia and New Zealand Environment and Conservation Council" (ANZECC) colour-coded receptacles are required.

Ku-ring-gai Council generally provides a weekly collection service for residential recyclable waste. In this instance it may be best to arrange twice weekly collections. Therefore, utilising the previously calculated residential waste generated for the residential section, the following **240L Mobile Garbage Bins** are required per building:

*Residential Apartments:*

***Qty Required – Sixteen (16) 240L bins***

***Note: This would be halved if multiple collections can occur.***

## **4.2 Green Grocer/Supermarket/Medical/Retail**

### **General & Recyclable Waste**

Based on the previously stated waste generation, our recommendations for waste handling equipment are as follows:

**Collection Containers** – Based on the previously calculated retail waste generated the **1000L plastic wheeled bin** requirements are, based on a two-day collection cycle:

***Qty Required – Six (6) per week, 2.6 per collection for***

***General Waste***

***Five (5) per week, 1.3 per collection for***

***Recyclable Waste***

## 5.0 GARBAGE ROOMS & GARBAGE AREAS

Space has been allocated for garbage rooms for the residential development. Floor plans of the garbage rooms are included on the DA drawings submitted with this application. The residential garbage rooms are located on Basement 1. Ku-ring-gai Council will collect general waste on a weekly basis and recyclable waste on a weekly basis. Collection will occur from the storage area located in the loading bay accessed off Havilah Lane on Ground Floor. Please refer to DA architectural layouts for location of garbage rooms.

There is a dedicated Green Grocer/Supermarket/Medical/Retail garbage area on Ground Floor in the loading dock area. A nominated private waste contractor will collect all Green Grocer/Supermarket/Medical/Retail waste on a two-day collection cycle. Collection will occur from the storage area located in to the loading bay accessed off Havilah Lane on Ground Floor. Please refer to DA architectural layouts for location of garbage rooms.

Construction of both the garbage areas and garbage rooms is to meet all requirements set out in Ku-ring-gai City Council Codes, BCA and Australian Standards.

It is recommended that the waste management system be monitored in the initial stages to ensure that sufficient bins have been provided to handle the waste generated. The bin numbers above are only an approximate and the number of bins provided and collection frequency will need to be monitored and adjusted to suit the needs of the individual tenants. Also, the bin size above is only a recommendation. Tenants may nominate an appropriate bin size to suit their needs.