

APPENDIX M

Waste Management Plan

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Ettalong Beach
218-220 Memorial Avenue & 47-50 The Esplanade
Ettalong Beach Town Centre

Development Application

January 2010

WASTE MANAGEMENT PLAN

JANUARY 2010

MIXED USE RESIDENTIAL DEVELOPMENT

218-220 Memorial Avenue & 47-50 The Esplanade
Ettalong Beach Town Centre

PREPARED FOR TESROL ETTALONG PTY. LIMITED.
FOR SUBMISSION TO GOSFORD CITY COUNCIL

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1.0 INTRODUCTION

The waste management plan to follow pertains to the Ettalong Beach Site Development located at the intersection of Memorial Avenue and The Esplanade, Ettalong Beach. The new development will consist of a mixed-use multi-storey residential building.

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

Residential Apartments:	A multi-storey residential building over six(6) levels. There are a total of 45 apartments within the development.
Retail Tenancies:	Retail Tenancies on the Ground Level with a total net lettable area of 515 m2 (Stage 1)

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 room numbers as advised by our client and shown on architectural drawings. Calculations have been made using typical waste generation calculation tables from Development Control Plan – No. 106 “Controls for Site Waste Management” as published by Gosford City Council.

All recommendations for waste facilities and equipment will be in compliance with Gosford City Council garbage handling recommendations. Design and construction of the garbage handling areas are to meet all council, BCA, Australian Standards and statutory requirements.

2.0 GENERATED WASTE VOLUMES

This assessment of waste volumes is an estimate only and will be influenced by the developments management and occupant's attitude to waste disposal and recycling.

We have based our calculations on maximum occupancy rates using typical waste generation calculation tables from Development Control Plan – No. 106 “Controls for Site Waste Management” as published by Gosford City Council. Provision has been made for maximum storage and collection requirements. Figures could be affected however, by Apartment Occupancy rates.

2.1 Residential Apartments

Using waste generation rates from Development Control Plan – No. 106 “Controls for Site Waste Management” as published by Gosford City Council, the general waste generated by the residential section of the development can be calculated as follows:

General Waste:

Location	Qty Apt's	General Waste Generation Rate		General Waste Generated	
Lift 1	26	120	L/apt/w	3120	L/week
Lift 2	19	120	L/apt/w	2280	L/week
TOTAL	45			5400	L/week

Using waste generation rates from Development Control Plan – No. 106 “Controls for Site Waste Management” as published by Gosford City Council, the recyclable waste generated by the residential section of the development can be calculated as follows:

Recyclable Waste:

Location	Qty Apt's	Recyclable Waste Generation Rate		Recyclable Waste Generated	
Lift 1	26	60	L/apt/w	1560	L/week
Lift 2	19	60	L/apt/w	1140	L/week
TOTAL	45			2700	L/week

2.2 Retail

Using waste generation rates from Development Control Plan – No. 106 “Controls for Site Waste Management” as published by Gosford City Council, the total general waste generated by the retail section of the development can be calculated as follows:

Retail – General Waste:

Location	Area, m2	Waste Generation Rate	Total Waste Generated
Retail 1	29	L/100m2/day	
Retail 2	107		
Retail 3	137		
Retail 4	112		
Retail 5	48		
Retail 6	49		
Retail 7	33		
TOTAL	515	80	412

Using waste generation rates from Development Control Plan – No. 106 “Controls for Site Waste Management” as published by Gosford City Council, the total recyclable waste generated by the retail section of the development can be calculated as follows:

Retail – Recyclable Waste:

Location	Area, m2	Waste Generation Rate	Total Waste Generated
Retail 1	29	L/100m2/day	
Retail 2	107		
Retail 3	137		
Retail 4	112		
Retail 5	48		
Retail 6	49		
Retail 7	33		
TOTAL	515	80	412

3.0 WASTE MANAGEMENT RECOMMENDATIONS

3.1 General Waste

Residential

The main residential building will be serviced via two (2) centrally located garbage chutes for the handling of general waste. Every resident will have access to the chute at each residential level. The garbage chute will discharge into a 1100L bulk-bin waste container as supplied by Council.

Sufficient bins will be provided, so that there will always be at least two empty bins still available on collection day. This is sufficient for approximately one day's operation and close monitoring of this will need to be carried out by the waste caretaker appointed by building management.

Retail

It is recommended that the retail tenancies be responsible for their own in-house storage of general waste material. Each afternoon or evening or as appropriate, the staff from the tenancies will transport the waste to the appropriate general and waste containers and place the waste in the containers provided for collection purposes. These containers will be conveniently located for ease of access. The retail garbage room is located on Ground Level.

As the majority of the general waste from the retail tenancies will most likely be perishable, it is advisable that the waste be stored in plastic garbage bags and sealed before placing in the collection containers located on the site. Due to the nature of the waste being produced and the smells it will emit, it is recommended that collection of this waste be performed on a daily basis to reduce the chances of these smells occurring.

3.2 Recycled Waste

Residential

The recycled waste will be collected on each residential floor at each garbage chute intake point via the use of colour-coded receptacles as adopted by the "Australia and New Zealand Environment and Conservation Council" (ANZECC). These receptacles will then be serviced by an appointed Waste Caretaker who will sort the recyclable waste and empty into the larger collection containers located in the dedicated recycling room at Ground Level. It is recommended that two (2) off 55L recycling crates be provided at each garbage chute intake point. All residential waste will be stored in the dedicated residential recycling room prior to collection, located adjacent to the truck loading service area. It is recommended that recycling waste be stored in 1100L bulk-bin waste containers.

The requirements for storage of Recycled waste will be described in **Section 4.0 Waste Equipment Recommendations**.

Retail

Storage in house of recyclable glass/plastic and paper/cardboard should be provided.

Alternatively all recyclable material can be stored together and sorted into the appropriate containers in the waste areas. Either way separation of the glass/plastic and paper/cardboard will have to be carried out by the tenants. It is expected that the majority of recyclable waste generated by these tenants will most likely be paper recyclable products such as cardboard boxes. It is recommended that some of the containers provided be for paper recycling products.

3.3 External Collection of Waste

Residential

Residential waste will be collected by Gosford City Council collection vehicles. Prior to collection, the appointed waste caretaker for the development will transport the appropriate residential waste bins to the truck loading area adjacent to the laneway access to the building. The council vehicle will collect all waste from the truck loading area that will be provided with a head clearance of 4.5 metres to meet Council requirements. The waste caretaker will then be required to return the garbage bins to the appropriate residential garbage rooms.

Gosford Council will provide a weekly collection service for both general & recyclable waste.

Retail

Retail & commercial waste will be collected by a nominated private waste contractor. The appointed waste caretaker will transport the appropriate waste containers from the retail garbage room on Ground Level to the loading dock, prior to collection. The nominated private waste contractor will utilise the street kerb adjacent the entry to the loading dock for collecting all retail waste.

It is recommended, that to reduce the chance of smells being generated, that retail general waste be collected on a daily cycle.

3.4 Waste Caretaker

It is strongly recommended that a full time caretaker be employed to manage the garbage system of this development. Furthermore, 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:

- Servicing the residential garbage compactor including replacing full general waste containers on the compactor with empty ones on a daily cycle or as appropriate.
- Servicing the apartment intake garbage rooms for recycled waste.
- Generally maintaining and cleaning the garbage rooms, associated chutes and receptacles. (Recommended at least once per week)
- Organizing, 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 deodorized (recommended at least once per week).
- Sorting recycled waste into appropriate receptacles.
- Organizing 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 all landscaping management.

4.0 WASTE EQUIPMENT RECOMMENDATIONS

All 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 or similar The garbage chute will service all residential levels and will transport the waste directly to the garbage compactor.
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Qty Required	Two (2) for the Residential Tower Building
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Containers	Based on the previously calculated “general waste generated”, it is recommended that at least one (1) council pick-up occurs per week. Therefore, the waste generation per collection (max. 7 days) and associated 1100L bulk-bin container requirements are as advised by Council:
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Qty Required	Three (3) for Lift 1 Garbage Room Three (3) for Lift 2 Garbage Room
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Recycled Waste

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

Recycled Waste Collection Receptacles	As adopted by the “Australia and New Zealand Environment and Conservation Council” (ANZECC) colour-coded receptacles are required. For collection purposes the primary recycling materials are as follows:
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- Co-mingled Recycling Service

Based on the previously calculated “recyclable waste generated”, it is recommended that at least one (1) council pick-up occurs per week. Therefore, the waste generation per collection (max. 7 days) and associated 1100L bulk-bin container requirements are as advised by Council:

Qty Required	Two (2) for Lift 1 Garbage Room Two (2) for Lift 2 Garbage Room
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4.2 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 “waste generated”, the 240L plastic wheeled bin requirements are, based on a two day collection cycle:
Qty Required	Seven (7) per collection
	N.B. The exact mix of general & recyclable waste containers will be determined by the respective tenants and the nominated private waste contractor.

5.0 GARBAGE ROOMS & GARBAGE AREAS

Space has been allocated for garbage rooms for each section of the development.

Each residential core will be serviced by dedicated garbage room. Each residential core will be serviced by a garbage chute for the transportation of general waste. Floor plans of the garbage rooms are included on the DA drawings submitted with this application. The residential garbage rooms are located on Ground Level. Gosford City Council will collect all residential waste on a weekly basis.

There is a dedicated retail garbage room located on Ground Level for the storage of all retail waste. A nominated private waste contractor will collect all retail waste daily.

Collection of all waste will occur from the truck loading bay located off the laneway.

A clearance height of 4.5 metres has been provided which is sufficient to service all waste requirements. Council will provide 1100L bulk-bin waste containers, which will be rear-loaded into Council's collection vehicle within the 4.5 metre head clearance.

Construction of both the garbage area and garbage room is to meet all requirements set out in Gosford City Council's Development Control Plan – No. 106 "Controls for Site Waste Management", BCA and Australian Standards.