

Point Polaris

(Forestway Shopping Centre Redevelopment)

Waste Management Plan

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1 Introduction

This Waste Management Plan (WMP) has been prepared on behalf of Point Polaris to accompany a Development Application for the Forestway Shopping Centre Redevelopment.

The Plan has been developed with consideration of Northern Beaches Council and other Authority's requirements. It is intended to inform the design of the waste services by identifying the estimated waste profile for the development and providing the total area required by the recommended equipment and systems.

This Plan, which includes waste estimates and related management requirements, has been developed in accordance with the Warringah DCP 2011 (*specifically Section C9 Waste Management*).

The project involves the redevelopment of the shopping centre and essentially consists of development of Level 1 retail level comprising restaurants, gymnasium, allied health, offices, child care and associated infrastructure and parking.

Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements.

To assist building management in achieving effective waste and recycling management, this waste management plan has three key objectives:

- i. **to minimise the environmental impacts of the operations of the development** – this will be achieved by ensuring maximum diversion of waste from landfill; correct containerisation and transport of materials; correct segregation of materials into appropriate management streams; awareness among tenants of waste avoidance practices.
- ii. **to minimise the impact of the management of waste within the development on local residents** – this will be achieved by ensuring waste is managed so as to avoid odour and litter and collected during suitable times.
- iii. **to ensure waste is managed so as to reduce the amount landfilled and to minimise the overall quantity generated** – this will be achieved by implementing systems that assist tenants to segregate appropriate materials that can be recycled; displaying signage in all tenant areas to remind and encourage avoidance and recycling to staff; and through associated signage in the all areas to reinforce these messages.

In doing so this Plan has also been written in accordance with the City of Sydney's *Policy for Waste Minimisation in New Developments* and The NSW Environment Protection Authority's *Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities*.

2 Waste Generation and Management Systems

2.1 Waste Streams

Based on the development profile, the following waste streams would be expected:

- Cardboard recycling;
- Paper recycling;
- Comingled (container) recycling;
- Polystyrene recycling;
- Food organics recycling;
- Soft plastic recycling;
- General waste;
- Kitchen supplies reuse or take-back system e.g. milk crates;
- Cooking oil;
- E-waste recycling;
- Toner cartridge recycling; and
- Fluorescent light tube recycling.

2.2 Waste Generation Estimates

Based on averages for quantity of waste generated and composition as determined by industry data (ie., data/information provided by WACS' waste audits conducted in a broad range of sectors) as well as consideration of the waste generation rates as detailed in the City of Sydney "Policy for Waste Minimisation in New Developments, 2005", it is estimated that the development will generate a total of 8,150 kilograms or 7,160 litres of waste and recyclables per day (this is for the additional retail and other tenants, but excludes Woolworths).

2.3 Management System Retail/Commercial Development (excluding Supermarkets)

Currently the Centre is serviced by the following bins and collection schedules:

- General Waste – 23.0 m³ compactor collected twice per week
- Cardboard Recycling – 23.0 m³ compactor collected fortnightly
- Commingled Recycling – 660 litre bins collected twice per week

For other wastes, these are managed by the depositing of them in the loading dock area and contractors are engaged to collect on an "as needed" basis.

Except for Woolworths, all waste and recycling bins are located at the Aldi loading dock (Aldi has their own system).

2.4 Woolworths and Aldi

Woolworths and Aldi currently manage their own waste/recycling systems as they have National contracts with service providers, and as such will incorporate any additional volumes of materials into their existing systems.

3 Waste Management Systems

The following summarises the recommended waste and recycling systems that will be implemented within the Centre. These recommendations are based on Council's requirements and systems implemented for similar developments (ie., types of tenants).

3.1 Retail/Commercial

The retail/commercial tenancies will be designed so as to allow effective segregation of recyclables. These tenancies will (depending on the types of wastes/recyclables generated) be provided with sufficient smaller bins to allow for effective segregation of wastes/recyclables. This will include:

- Paper and Cardboard recycling
- Comingled recycling
- Organics
- General waste

These bins will be transported to the waste room located on the Aldi loading dock by tenant staff for collection by the appointed contractor.

Retail and commercial waste and recycling collection services will be provided by a commercial waste contractor. Utilising a commercial waste contractor affords the retail/commercial sites greater flexibility regarding collection schedules and the appropriate collection frequencies will be determined in consultation with the waste contractor once appointed – however once operational, collection schedules may need to be adjusted accordingly depending on actual waste generation.

The contractor truck will service the bins from the loading dock.

A used cooking oil facility will be located in the waste area. Should any of the commercial tenancy generate this material, it will be kept separate and sent to a recycling facility. Measures will be taken to ensure safe transportation to the waste room and safe storage. Any spillages will be cleaned immediately.

In addition, tenants will be provided with ad hoc recycling systems such as e-waste; batteries; mobile phones etc. Systems for these streams will be located within the waste storage area or be available upon request from building management.

Signage will be a crucial element of the waste management system. Appendix B contains examples of signage. These are the type of signs that should be used throughout the tenancies and waste storage area(s).

3.2 Supermarkets

The management of wastes will be the responsibility of the supermarket operators (Woolworths and Aldi).

Supermarket staff will be responsible for the correct segregation, consolidation of waste and recyclables and when required ensuring bales and bins are located in the required position for collection by the appointed contractor.

3.3 Organics

Organic waste will be deposited directly into 120 litre MGB at the “point of generation”. These MGB will then be transported to the waste area at the Aldi loading dock. This is to avoid odour generation.

3.4 Summary of management process

The following summarises the management system for the wastes and recyclables for the tenants.

Retail/commercial waste systems

Stream	System	Comment
Cardboard recycling	240L MGBs	Tenants separate paper/cardboard materials to deposit directly into bins. Tenant staff to transfer bins from waste storage room to the loading dock for collection.
Food organics	120L MGBs	Tenants separate food waste materials in BOH/kitchen areas and then deposit material directly into 120L MGBs. Alternatively, a high organics generator such as a café may prefer to use a 120L MGB in their BOH area and then take it to the loading dock when full. Tenant staff to transfer bins to the loading dock for collection.
Comingled Recycling	240L MGBs	Tenants separate comingled materials in BOH area and then deposit directly into 240L MGBs. Tenant staff to transfer bins to the loading dock for collection and then return empty bins for use.
Oil Recycling	TBA	Tenants transfer used cooking to loading dock as required. Specialty oil contractor collects as determined.
General Waste	240L MGBs	Tenants separate general waste in BOH areas and then deposit directly into 240L MGBs. Tenant staff to transfer bins to the loading dock for collection and then return empty bins for use.

3.5 Waste Storage Areas

In keeping with best practice sustainability programs, all waste areas and waste and recycling bins will be clearly differentiated through appropriate signage and colour coding to Australia Standards to reflect the materials contained.

There will be a need to ensure that there is sufficient space to allow for bin movement. As a general rule, it is recommended that an additional 30% of the estimated footprint for bins be allocated to this and this has been factored into the waste storage area space calculations.

All waste storage rooms will be locked and keys only available to authorised personnel (eg., cleaners, contractors, commercial tenants etc.).

The waste and recycling bins will be colour coded and clearly signed. Each stream will be located in a designated area. This will assist in easy identification of correct bins by those with authorised access.

Photographs 1 & 2 - Examples of waste room colour coding



The waste room will contain the following to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed with a two pack epoxy;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed 100mm up, this is to eliminate build-up of dirt;
- a water facility with hose cock must be provided for washing the bins;
- any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board;

- tap height of 1.6m;
- storm water access preventatives (grate);
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- optional automatic odour and pest control system installed to eliminate all pest types and assist with odour reduction – this process generally takes place at building handover – building management make the decision to install;
- all personnel doors are hinged and self-closing;
- waste collection area must hold all bins – bin movements should be with ease of access;
- conform to the Building Code of Australia, Australian Standards and local laws; and
- childproofing and public/operator safety shall be assessed and ensured.

Occupational Health and Safety issues such as slippery floors in waste rooms and the weight of the waste and recycling receptacles will need to be monitored. Cleaners will monitor the bin storage area and all spills will be attended to immediately by cleaners.

4 Waste Stream Acceptance Criteria

4.1 Acceptance Criteria

General Waste:

General waste bins will be 240L MGB's. The lids and signage should be colour-coded red. The general waste stream does not include hazardous material (such as batteries, fluorescent light tubes, light bulbs and/or toner cartridges), recyclable material or electronic equipment such as computers, TVs and mobile phones.

Comingled (Mixed Recycling):

The comingled recycling system will be 240L MGB's and should accept all recyclable plastic containers, aluminium containers, glass bottles and steel cans in. Comingled recycling bin lids and signage should be colour-coded yellow.

Paper/cardboard Recycling:

All paper and cardboard (excluding waxed cardboard) will be deposited into 240L MGB's which have a blue bin lid and signage.

4.2 Bin Requirements

Containers located within the development for waste and recycling should be consistent. The following table outlines the colour coding that has been developed by Standards Australia.

Australia waste/recycling container colour coding

Waste Stream	Bin Body Colour	Lid Colour
Paper Recycling	Blue	Blue
Cardboard Recycling	Green	Blue
Food Organics	Burgundy	Burgundy
Commingled Recycling	Green	Yellow
Used Cooking Oil Recycling	NA	NA
General Waste	Green	Red

Appendix A contains illustrations of bins (and other waste management equipment), that could be used within the various tenancies and retail/commercial areas. The pictures provide examples of the different options for equipment such as MGB, tugs for transporting bins, trolley unit and a wheelie-safe trolley.

5 Tenant Education

All commercial tenants will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Appropriate signage and updated information will also be provided.

Essentially commercial tenants will be responsible for transporting waste/recyclables to the waste storage area and decant into the appropriate bins located in this area.

All waste receptacles will be appropriately signed and additional room signage is usually provided from most waste contractors during implementation of the waste contract. Examples of signage are included in Appendix B.

It is recommended that all signs should;

- Clearly identify the waste/recycling stream;
- Use correct waste/recycling stream colour coding;
- Identify what can and cannot be disposed of in the receptacle; and
- Include highly visual elements to accommodate for individuals with inadequate English literacy.
- As part of the tenant induction process, a waste and recycling toolkit will be provided. This toolkit will include the details of each of the systems in place; acceptance criteria for each stream and how each stream is managed. A visual communication aid such as short video will also be provided to enable tenants to educate their employees.

On a regular basis waste and recycling performance reports will be reported back to tenants so that they are aware of their performance and areas for improvement. An active waste monitoring program will be employed. The waste and cleaning contracts will ensure that contractors actively participate in the waste reduction program for the site and meet monthly to identify performance and new opportunities for diversion and avoidance.

6 Ongoing Management

Having suitable systems in place is only one element of an effective waste management system. Compliance by all stakeholders is essential.

Cleaners are a key element in the effectiveness of the systems in place. Prior to acceptance of the cleaning contract, the contractor will be required to demonstrate how the management of waste and recycling will be carried out so as to ensure that segregated materials are placed in the correct systems. This process will be agreed and a training program implemented by the cleaning contractor to ensure full understanding by all cleaners. Monitoring of the system will be carried out by the cleaning supervisor and site management throughout the term of the contract.

In addition, cleaners will be required to feed back to site management any non-compliance issues they observe during their cleaning activities. This may include contamination of recycling; non-participation in the recycling system, or missing or damaged bins. In this way issues can be promptly dealt with by management.

Waste and recycling contractors will be required to report actual volumes collected by stream so that site management can monitor performance and feed this back to stakeholders.

It is highly recommended that a basic reporting program be set up at the site which would include bin tally sheets that detail the number of bins collected and how full they are at the time of collection, in addition to communication procedures to allow waste contractors to provide feedback regarding contamination and leakage.

All tenants and staff should be educated and made aware of any changes to the existing waste systems.

If a public place recycling system was implemented it would need to be accompanied by clear signage and colour coding to help differentiate the systems. It is likely that staff would also be required to inform the public about the systems and to guide their waste disposal practices. Additionally, notices and information sheets could be placed on public notice boards informing the public of the changes at the centre.

7 Public Place Recycling

With public open spaces, consideration needs to be taken regarding public place recycling (PPR). General waste and recycling facilities will be provided in public realm areas throughout the precinct. The final number of bins will be determined in consultation with North Sydney Council and tenants.

Simple, colour-coded and consistent representation of common recycling and waste streams makes it easier for people to know how and what to recycle - whether at work, school or a public event. Introducing a public recycling system has environmental, social and financial benefits including:

- Responding to community expectations to 'Do the Right Thing'.
- Reducing the amount of waste sent to landfill and recovering valuable resources to be made into new products.
- Financial benefits over time as materials are diverted from landfill and into recycling.
- Improving the competitive edge of the centre in the eyes of shoppers and tenants.
- Contributing to triple bottom line reporting.

It is important that general waste and recycling bins are always located together in order to make recycling as accessible as general waste disposal. Recycling bins should never be located on their own in isolation from a general waste bin as patrons are likely to contaminate the recycling bin with general waste if there is no other option to dispose their general waste.

The implementation of organics recycling bins is not recommended in public places due to the high levels of contamination commonly observed in such systems.

All bins should be clearly signed and appropriately colour-coded to ensure the streams are readily identifiable. Signage for PPR should be:

- Colour-coded: red for general waste and yellow for recycling
- Large and easily viewed from all angles: this may mean that signs are placed on all sides of the bin or above the bin.
- Simple: don't use jargon (words such as PET, comingled, HDPE and even the recycling triangle can be confusing as this symbol can appear on a number of items that are not necessarily recyclable.
- Unambiguous and uses visual imagery

All public domain waste and recycling bins will be managed and collected by the appointed waste contractor as part of their existing waste and recycling operations.

Appendix A – Waste Management Equipment

The following diagrams illustrate colours and sizes of different bins that could be used within the development.

Figure 1 – MGB bin



Figure 2 – MGB bin



Figure 3 – Indicative size of MGB



Figure 4 – General waste compactor



Figures 5 and 6 – Cardboard balers





EF 100VX



The EF100VX is a low height baler making it easy to transport and install with no on site assembly required. It is a low noise baler with a fast cycle time and front loading ropes. EF100VX baler produces bales of cardboard up to 90kg. It can be used to bale a range of materials including plastic film, shredded paper and cardboard.

Figure 7 – Oil collection unit



Tenants drain oil from the fryer into the Oil Kaddy transporter then wheel the transporter to the main oil unit in the dock, connect the hose and run the cycle – thus avoiding the need for lifting oil containers and reducing the chance of spills and slips.

Figures 8, 9, 10 and 11 – Bin movers and tugs





Appendix B – Example Signage



