# Wallacia Golf Course

# Waste Management Plan

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# 1 Introduction

This Waste Management Plan (WMP) has been prepared on behalf of the Catholic Metropolitan Cemeteries Trust to accompany a Development Application for Wallacia Golf Course, located at 13 Park Rd, Wallacia NSW.

The Plan has been developed with consideration of Penrith City Council's 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/systems.

In doing so this Plan, which includes waste estimates and related management requirements, has been developed in accordance with the *Penrith Development Control Plan 2014*.

The Plan relates to the ongoing operation of development, which involves the construction of memorial and funeral service facilities, as well as park management facilities and food premises. The key components of the new development include the ongoing management of the following buildings:

- Chapel and crematorium
- Administration
- Workshop
- Function rooms

**Figure 1 – Site Masterplan**


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 commercial areas to reinforce these messages.

# 2 Waste Generation

## 2.1 Waste Streams

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

- General waste;
- Commingled recycling

Note: while green waste will be generated onsite it will be mulched and reused.

## 2.2 Waste Generation Estimates

Based on averages for quantity of waste generated and composition as determined by industry data (i.e. 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 Penrith City Council's *Penrith Development Control Plan 2014, C5: Waste Management*, It is estimated that the entire development will generate a total of **20,728 litres** of waste and recyclables per week.

The following tables summarise the expected quantities of waste and recyclables generated for the development in terms of weight and volume per week.

**Table 1 – Waste/recycling generation**

| | L/week |
|---|---|
| General Waste | 16,383 |
| Commingled Recyclables | 4,345 |
| **Total** | **20,728** |

**Table 2 – Waste/recycling generation (by building)**

| Building | General Waste L/week | Commingled Recycling L/week |
|---|---|---|
| Chapel | 560 | 175 |
| Admin | 235 | 235 |
| Function Rooms | 15,252 | 3,851 |
| Workshop | 336 | 84 |

| | | |
|---|---|---|
| **Total** | **16, 383** | **4, 345** |

Note: The weights and volumes are based on correct segregation of waste and recyclables.

# 3 Waste Management Systems and Spatial Requirements

## 3.1 Waste Systems and Bin Requirements

The following tables show the recommended systems required to manage the estimated waste profile as detailed in the above tables for the development. The systems refer to the outside waste storage bins onsite, rather than the internal bins that may be used within the development.

**Table 3 – Function Rooms Waste System**

| Waste Stream | Bin Size | No. of bins | Clearance (frequency/ week) | Capacity (Weekly) | Estimated Volume/Week | Footprint per bin (m2) | Total Footprint |
|---|---|---|---|---|---|---|---|
| General waste | 3000 | 2 | 3 | 18,000 | 15,252 | 2.72 | 5.44 |
| Recycling | 1500 | 1 | 3 | 4,500 | 3,851 | 1.7 | 1.7 |
| **TOTAL** | | **3** | | **22,500** | **19,103** | | **7.14** |

**Table 4 – Chapel, Administration and Workshop Waste System**

| Waste Stream | Bin Size | No. of bins | Clearance (frequency/ week) | Capacity (Weekly) | Estimated Volume/Week | Footprint per bin (m2) | Total Footprint |
|---|---|---|---|---|---|---|---|
| General waste | 660 | 2 | 1 | 1,320 | 1,131 | 1.16 | 2.32 |
| Recycling | 660 | 1 | 1 | 660 | 494 | 1.16 | 1.16 |
| **TOTAL** | | **3** | | **1,980** | **1,625** | | **3.48** |

Note that once in operation collection frequencies may need to be changed to better reflect the generation of waste and recyclables onsite.

## 3.2 Waste Storage

The following diagrams illustrate the outside location of waste bins. These outside bin storage areas have been selected to maximise pickup efficiency and the effective management of each building's waste. They refer to the aforementioned waste systems, rather than the internal bins that will be utilised within the development.

**Diagram 1 – Function Rooms Bin Storage Area**

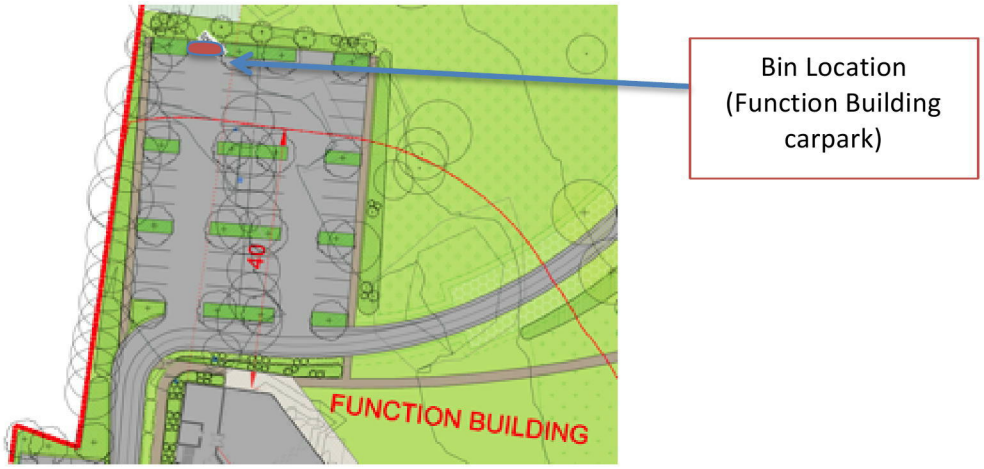
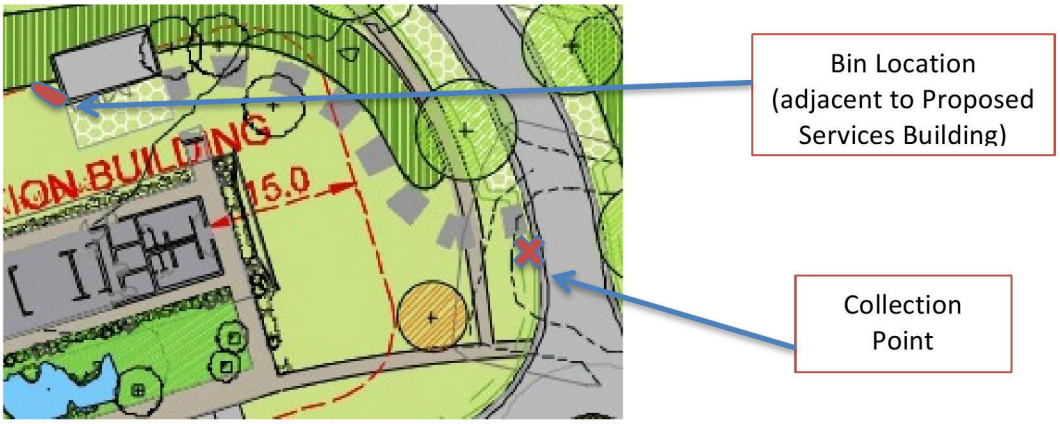



**Diagram 2 – Chapel, Administration and Workshop Bin Storage Area**




The waste areas will be accessed by cemetery, cleaning and grounds staff where they will dispose of wastes/recyclables into the designated bins provided.

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 tenants and cleaners.

## 3.3 Storage Design

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

Each stream will be located in a designated area. This will assist in easy identification of correct bins by cleaners and staff.

# 4 Waste Management Systems

The following summarises the recommended waste and recycling systems that will be implemented. These recommendations are based on Penrith City Council requirements and systems implemented for similar developments (ie., types of tenants and residential areas).

## 4.1 Systems

All cemetery, cleaning and grounds staff will be briefed on the proper use of waste management systems. Staff will be encouraged to maximise the separation of general waste and mixed recyclables to aid the proper disposal of all materials.

Cleaners, grounds staff and cemetery management will monitor recycling streams as it is imperative that they remain free of contamination to ensure compliance with Penrith City Council and Suez – which will be the waste contractor utilised for the collection and depositing of waste and recyclables.

Waste/recyclables will be transported from internal bins to the larger bins located in the outside waste areas on a daily basis by cemetery staff. This process will take place for each individual building located onsite. Due to the small amounts of waste and recyclables produced by the Chapel, Administration and Workshop buildings, a central outside bin storage area has been selected. While the Function Room has been designated with its own outside bin storage area to account for its larger waste generation and greater proximity from the other buildings.

Prior to collection grounds staff will move the Chapel, Administration and Workshop building bins to the designate collection point. Once collected by Suez, it will be the responsibility of grounds staff to return bins to their outside bin storage area.

Function room bins will not be required to be moved by grounds staff.

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 each tenancy or in common areas 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 commercial tenancies and waste storage area(s).

## 4.2 Summary of management process

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

**Table 5 – Overview of management process**

| Stream | System | Comment |
|---|---|---|
| Commingled | 1.5m$^3$ bins and | Cleaning, grounds and cemetery staff separate commingled |

| Stream | System | Comment |
|---|---|---|
| Recycling | 660L MGBs | materials and deposit directly into bins and MGBs, located within the two outside bin storage areas |
| General Waste | $3m^3$ bins and 660L MGBs | Cleaning, grounds and cemetery staff separate general waste and deposit directly into the MGBs, located outside each building |

## 4.3 Disposal of Wastes/Recyclables

The following summarises the disposal pathway for the wastes and recyclables generated once the development is operational.

### Table 6 – Waste Management Systems

| Type of material | Destination |
|---|---|
| Commingled recycling | Transported by Suez to a recycling facility |
| General waste | Transported by Suez to a landfill disposal facility |

# 5 Waste Stream Acceptance Criteria

## 5.1 Acceptance Criteria

**General Waste:**

General waste bins will be 3m$^3$ bins and 660L 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 in 1.5m$^3$ bins and 660L MGB's and should accept all recyclable plastic containers, aluminium containers, glass bottles and steel cans, paper and cardboard. Comingled recycling bin lids and signage should be colour-coded yellow.

## 5.2 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.

**Table 7: Standards 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 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.

# 6 Tenant Education

All staff 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, as well as receiving feedback on issues such as contamination of the recycling stream or leakage of the recyclables into the general waste. The building management will be responsibly for carrying out these tasks.

All waste receptacles will be appropriately signed. 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 staff 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 quarterly basis waste and recycling performance reports will be reported back to staff so that they are aware of their performance and areas for improvement. An active waste monitoring program will be employed.

# 7 Other Systems

In addition to the diversion system that will be implemented, other waste diversion and minimisation practices may also be implemented. The following provide an example of these types of systems:

**Fluorescent Light Tubes**

A fluorescent light tube recycling stream may be required depending on the contractual arrangements for replacing light tubes. Recycling of used fluorescent light tubes could be a contractual requirement of the electrician responsible for servicing the lights. Alternatively if lights are services using in-house staff a fluorescent light tube recycling receptacle should be located in the recycling area.

**Toner Cartridges**

A toner cartridge recycling bin/box should be placed in key printing areas to capture used cartridges. These can be recycled on an as-needed basis.

**E-Waste**

Electronic equipment should be recycled on an as-needed basis.

**Mobile Phones**

Mobile phones can be collected in secure receptacles at centralised collection points. Alternatively, boxes containing postage satchels can be placed in centralised areas for use as needed.

# 8 Ongoing Management

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

Cleaners and grounds staff will be adequately trained and educated on the management of waste and recycling so as to ensure that segregated materials are placed in the correct systems. While site management will carry out monitoring of the system on a regular basis.

In addition, cleaners and grounds staff will be required to feed back to site management any non-compliance issues they observe during their cleaning activities and garbage collection service. 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.

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 with Suez Spring Farm Resource Recover Park to monitor actual volumes collected by stream.

All 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.

# 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**

### Figures 4, 5, 6 and 7 – Bin movers and tugs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# Appendix B – Example Signage