

**Roseville College (SWELL Centre),  
27-29 Bancroft Avenue Roseville**

**Operational  
Waste Management Plan**

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# 1 Introduction

This Operational Waste Management Report has been prepared on behalf of EPM Project Pty Ltd to accompany a Development Application for the Roseville College (SWELL Centre), located at 27-29 Bancroft Avenue Roseville Development.

In summary, the development involves:

- Rooftop hardcourts to replace 2 x existing multi-purpose sports courts to be demolished
- Gymnasium
- Indoor swimming pool & amenities
- Additional learning spaces
- Additional car parking

The current student population is 970. However, it is proposed to have this increase to 1,250 students by 2030.

The Plan has been developed with consideration of Ku-ring-gai 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 Ku-ring-gai Council's *Development Control Plan 2016* and specifically *Part 23.7 Waste Management and 23R.7/9/9* (in relation to waste management plans).

In addition to the above, the requirements for Green Star Design & As-Built v1.3 (Performance Pathway 8), have been considered to ensure that the waste management system meets these requirements.

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. The waste management plan has three key objectives:

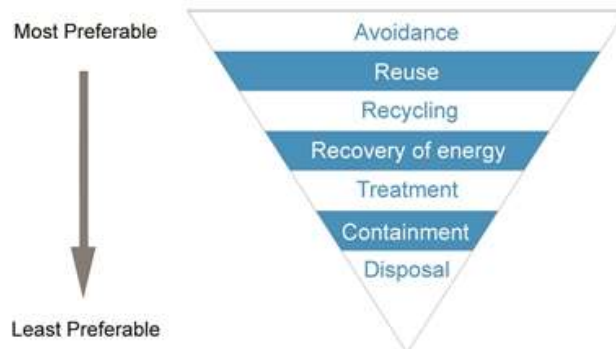
1. **Ensure waste is managed to reduce the amount of waste and recyclables to land fill** by assisting staff to segregate appropriate materials that can be recycled; displaying signage to remind and encourage recycling practices; and through placement of recycling and waste bins to reinforce these messages.
2. **Recover, reuse and recycle** generated waste wherever possible.
3. **Compliance** with all relevant legislation, codes and policies.

Management strategies reflect current best-practice requirements, and relevant Sections of the *Protection of the Environment Operations Act 1997* and the NSW Environment Protection Authority *Waste Classification Guidelines, Part 1: Classifying Waste*, as well as consideration of industry best practice for this type of development.

Other legislation and policies referred to for the development of this Waste Management Plan included:

- Protection of the Environment Operations (Waste) Regulation 2014
- Waste Avoidance and Resource Recovery Act 2007
- Waste Avoidance and Resource Recovery Strategy 2014-2021

The waste hierarchy (illustrated over the page), will be used as a guiding principle for this developments operational waste management:



### **Avoid and Reduce**

Minimise the production of waste materials by:

- Assessing and taking into consideration the resultant waste from different purchasing and operational options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials

### **Reuse**

Ensure that where ever possible, materials are reused either on site or offsite.

- Identify all waste products that can be reused
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

### **Recycling**

Identify all recyclable waste products to be generated on site.

- Provide systems for separating and consolidation of recyclables
- Provide clear signage to ensure recyclable materials are separated

### **Disposal**

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with regulatory requirements
- Implement regular collection of bins

Qualification and experiences of the auditor (Dr Trevor Thornton), who prepared this report is contained in Appendix B.

## 2 Waste Management

### 2.1 Waste Streams

Based on the development profile, the following are the waste streams that would be expected on a regular basis:

- Comingled recycling (eg., cardboard/paper, glass and plastic containers);
- General waste; and
- Garden waste.

General waste and recyclables are consolidated into the one bin provided by the appointed contractor– this is to ensure that the system is economically viable. Other wastes may be generated, but these would be irregular in terms of when generated and as such the quantities not able to be estimated.

All garden waste will be managed by the appointed gardener. There will be a requirement that this waste be either used on site, or disposed of at a composting facility. Disposal to landfill will not be a permitted option.

### 2.2 Waste Generation Estimates

Calculations for the types and quantities of waste that will be generated have been based on current waste generation for the College and comparisons with similar size schools as determined by audits conducted by Waste Audit.

It is estimated that the development will generate a total of approximately **1.2 m<sup>3</sup>** of waste/recyclables per day. Note that this is not all increased volumes as it is essentially the number of students/staff that determine the volume of wastes and recyclables generated.

Currently there is an average of 15 x 240 litre mobile garbage bins collected each of the five servicing days.

To manage the volumes, the College has a number of 240 litre mobile garbage bins that are used for both general waste and comingled recycling and paper/cardboard recycling. These are collected by the contractor and sorted at their Materials Recovery Facility.

There will be seasonality – in that wastes/recyclables will be reduced significantly during non-teaching periods (with other issues such as comingled recyclables generated more in the warmer times, than the cooler ones). In addition, at the end of terms (and particularly end of year, there will be increases in waste and recyclables generated due to “clean-ups”.

## 2.3 Waste Management Servicing

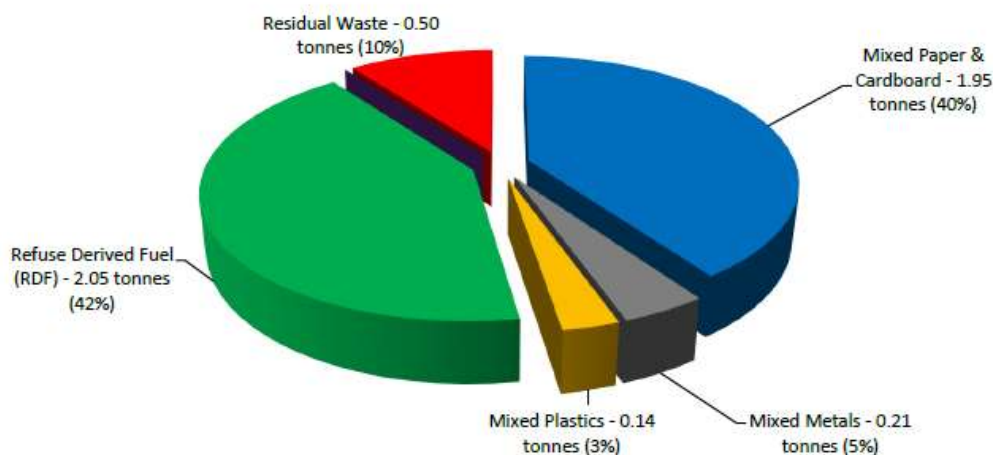
A private contractor (Doyle Brothers), is used for the collection of wastes and recyclables.

This is a five times per week service for general waste and commingled recycling (240 litre mobile garbage bins).

However, additional services can be arranged as required.

The 6.0 m<sup>3</sup> skip bin (used for a variety of general wastes such as maintenance materials), is serviced by Sydney Transwaste Industries approximately once per month.

Doyle Brothers provides Roseville College with monthly reports that detail generation rates and management aspects for the various streams managed by them. An example of the data is illustrated below (from the November 2021 report).



This shows a landfill diversion rate of 90%.

## 2.4 Operational Procedures

The following summarises the recommended waste and recycling systems that will be implemented.

- Bins for waste and recyclables are located around the College grounds for use by staff and students.
- Relevant rooms within the classrooms, office area and other areas are provided with small (15 litre) bins for wastes/recyclables in each room.
- MGB for waste and recyclables are located around the College grounds for use by staff and students and in the driveway of 31 Bancroft Avenue (for servicing by the contractor).



- All MGB and bins are managed by College staff.
- All waste and recyclables are transported to the collection area from their locations on College grounds by cleaning staff or students.
- All waste/recycling service vehicles arrive and depart the site outside of the peak hours to minimise disruption to the local road network as well as to ensure safety for staff and students.
- All waste and recycling 240 litre MGB are serviced from Bancroft Avenue and Recreation Avenue for the skip bin. All MGB are transported to the collection area from their locations on the College grounds by College cleaning staff and then emptied by the contractor. This occurs in the evening when staff/students are not on campus.
- 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. Each stream will be located in a designated area. This will assist in easy identification of correct bins by those with authorised access.
- It will be the responsibility of College staff to ensure that waste areas remain clean.
- The following illustrates the collection location:



Staff and students will be provided with information on the proper use of the waste management system and all will be encouraged to maximise the separation of general waste and mixed recyclables to aid the proper disposal of all materials.

Signage will be a crucial element of the waste management system. Appendix A contains examples of signage. These are the type of signs that should be used

throughout the buildings. Other signs can be accessed from the NSW EPA website at: <http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm>.

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.

## 2.5 Education

Staff and students will be advised as to correct segregation by information conveyed via newsletters, signage and staff advising students, regarding the waste management systems including how to use the system, which items are appropriate for each stream and collection regimes.

## 2.6 Container Deposit Scheme

The NSW container deposit scheme, Return and Earn, commenced across NSW on 1 December 2017. Under Return and Earn, most empty 150-millilitre to 3-litre drink containers will be eligible for a 10-cent refund when presented to an approved NSW collection point. Container materials that may be eligible for a refund include

- PET
- HDPE
- glass
- aluminium
- steel
- liquid paperboard

This initiative by the NSW Government can be viewed as an opportunity for the College to collect eligible containers and the transport them to a collection point in order to obtain the refund. College staff and students could also deposit eligible containers from other sources as a means of fund raising.

The following NSW Government website provides details and the College can find collection locations (<https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/return-and-earn>).

## 2.7 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 development.

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, the College 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.
- 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 cleaners as part of their existing waste and recycling operations.

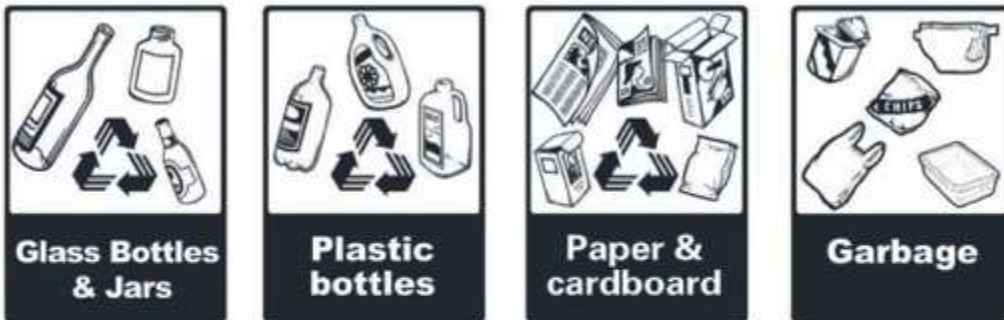
The following are some examples of public place recycling bins that could be used within the College precinct. Contacting providers of these type of bins will enable the development to obtain bins that are “fit for purpose” as well as integrating into the College design.



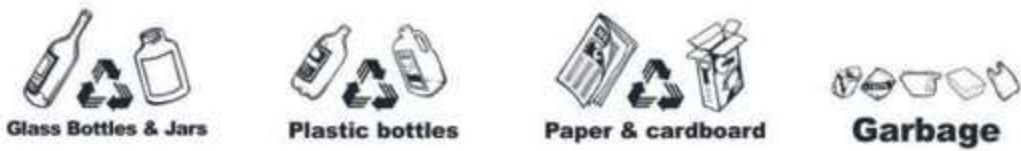
## Appendix A – Example Signage



Example wall posters



Example bin lid stickers



## Appendix B – Auditor Qualifications

This report has been prepared by Dr Trevor Thornton. Dr Thornton has over 30 years' experience in conducting waste audits and preparing waste management plans for a variety of commercial and industrial organisations/sectors.

B.Ed. (1983 - Victoria College)

M.Env. Sci. (1993 - Monash University)

Doctor of Technology (2007 - Deakin University)

Environmental Auditors Course - May 1995 (Standards Australia).

Life Cycle Assessment Course – October 1999 (RMIT)

### Qualification Statement:

**1. Knowledge** – Trevor has been working in the waste management industry for over 30 years developing and implementing waste management strategies for a broad range of sectors. In addition, Trevor is a lecturer in Hazardous Materials Management at Deakin University. His experience is often called upon by State governments for advice on aspects of waste management.

**2. Industry Experience** – Trevor has been working in the waste management industry for over 30 years. Examples of projects are listed below.

**3. Professional Activity** – Trevor is currently working with Sustainability Victoria as a Waste Management Consultant. In the past, he has liaised with State/Local Governments on various waste related projects and often providing feedback on protocols or best practice waste models.

**4. Reputation** – Trevor is well known within the waste industry for his knowledge on waste management matters – both Nationally and Internationally. He is often sought after by the media for expert comment on waste management issues. He also sits on the State Governments' Plastic Pollution Reference Group.

**5. Professional Association** – Trevor is a member of the Waste Management and Resource Recovery Association. As a consultant to business and government, and as a lecturer in Hazardous Materials Management, Trevor is required to keep abreast of industry trends and developments.

**6. Communication Skills** – As a lecturer and many years' experience in running waste management training courses, Trevor regularly delivers knowledge and information to industry professionals in an engaging and effective manner.

**7. Legislative Understanding** – As a consultant Trevor needs to be well aware of all relevant legislation. Trevor also Chairs a Standards Australia Committee on waste management.

### Indicative Projects:

The following provides a selection of the waste audits, waste management plans and/or Green Star reports conducted by Dr Trevor Thornton – these are projects where he has been lead auditor, substantially if not wholly written the report and/or waste management plan. Please note that this list is not exhaustive as some client details remain confidential.

- Lennox Waste Solutions (2021)
- Casmar Constructions (2021)
- Outlook (2021)
- Rafferty the Wrecker (2021)
- City of Geelong (2020)
- Phenom Group (2020)
- Victoria Cross Station (2020)
- 44 Martin Place (2020)
- Brickworks (2020)
- Bens Waste (2019)
- Corangamite Council (2019)
- Botanicca Development (2019)
- Greensborough Shopping Centre (2019)
- Mercy Health (2019)
- Alfred Health (2019)
- Midland Group (2019)
- Delta (2019)
- Rydell (2019)
- Golden Plains Council (2018)
- Ballarat City Council (2018)
- Delta Group (2018)
- PB Construction (2017)
- Perfect Contracting (2017)
- Bin Master (2017)
- Places Victoria (2017)
- Startrack (2017)