



# Operational Waste Management Plan

Proposed Samuel Gilbert Public School Redevelopment

At Ridgescrop Dr, Castle Hill

On behalf of J. Hutchinson Pty Ltd



## About TTM

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T: (02) 9418 3033

F: (02) 9418 3112

E: [ttmnsw@ttmgroup.com.au](mailto:ttmnsw@ttmgroup.com.au)



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## GLOSSARY OF TERMS

In this waste management plan unless the subject matter otherwise indicates, a term or abbreviation has the following meaning:

TERM	DEFINITION
Bin Storage Area	An enclosed area designated for storing on-site refuse bins within the property.
Bulk Bin	A galvanized or steel bin receptacle that is greater than 360L in capacity generally ranging from 1.0m <sup>3</sup> to 4.50m <sup>3</sup> used for the storage of refuse that is used for on-site refuse collection.
Bulk MGB	A plastic (polypropylene) receptacle that is greater than 360L in capacity generally ranging from 0.66m <sup>3</sup> to 1.10m <sup>3</sup> used for the storage of refuse.
Collection Point	The identified position where refuse bins are stored for collection and emptying. The collection point can also be the bin storage area for bulk bins.
Composter	A container/machine used for composting specific food scraps and/or organic materials.
Green Waste	All vegetated organic material such as small branches, leaves and grass clippings, tree and shrub pruning, plants and flowers.
L	Litre(s) related to refuse volumes
Liquid Waste	Non-hazardous liquid waste generated by commercial premises that should be connected to sewer or collected for treatment and disposal by a liquid waste contractor (including grease trap waste).
m <sup>2</sup>	Square Metre(s) related to refuse areas
Mobile Garbage Bins (MGB)	Plastic (polypropylene) bin or bins used for the temporary storage of refuse that is up to 360L in capacity and may be used in kerbside refuse collection or on-site collection.
Putrescible Waste	The component of the waste stream liable to become putrid and usually breaks down in a landfill to create landfill gases and leachate. Typically applies to food, animal and organic products.
Recycling	All material suitable for re-manufacture or re-use eg glass bottles and jars – PET, HDPE and PVC plastics, aluminum aerosol and steel cans and lids, milk and juice cartons, soft drink, milk and shampoo containers, paper, cardboard, junk mail, newspapers and magazines.
Refuse	Material generated and discarded from residential and commercial buildings including general waste, recyclables, green waste and bulky items.
Refuse Bin	A receptacle (MGB (wheelie), bulk MGB or bulk bin) used for the storage of refuse.
Refuse Collection Vehicle (RCV)	A vehicle that is specifically designed for collecting and emptying refuse bins and refuse compactors.
Refuse Storage Area	An area identified for storing on-site mobile garbage bins or bulk bins within the property.
Regulated Waste	Waste prescribed under legislation as regulated waste.
Steely Bin	660L bulk bin made of galvanized steel

TERM	DEFINITION
Waste	Refuse material with the exclusion of recycling, green waste, hazardous waste special waste, liquid waste and restricted solid waste.
Waste (General Waste)	Generally material free of any actual or apparent contamination (pathological/infectious, radioactive and/ or hazardous chemical). Reporting use is for material considered to be free of food waste.
<b>Collection Vehicles</b>	
Rear-loading RCV	A truck specially designed to collect municipal solid waste and recycling, typically 240L wheelie bins to 1100L bulk bins from rear loading mechanism and haul the collected waste to a solid waste treatment facility.
Front-loading RCV	A truck specially designed to collect municipal solid waste and recycling, typically 1500L-4000L bulk bins from a front-loading mechanism and haul the collected waste to a solid waste treatment facility.

# 1. Introduction

## 1.1. Background

TTM Consulting has been engaged by J. Hutchinson Pty Ltd to prepare an operational management plan to support the proposed school (Samuel Gilbert Public School) redevelopment at Ridgecrop Dr, Castle Hill.

It is understood that an SSD application has been lodged and received development consent. This operational WMP has been updated in accordance with the development consent (condition D30).

## 1.2. Condition D30

This demolition and construction waste management plan has been updated to include Condition D30 of the development consent executed on 15 February 2020, with the application reference SSD 9274. The following condition is outlined below:

*Prior to the commencement of operation, the Applicants must prepare a Waste Management Plan for the development and submit it to the Certifying Authority. The Waste management plan must:*

- *Detail the type of quantity of waste to be generated during operation of the development*

A summary of the quantities of anticipated refuse generation is shown in Section 2.1 and Appendix A.

A separate demolition and construction WMP has been provided to outline the type of quantity of waste to be generated during operation of the development.

- *Describe the handling, storage and disposal of all waste streams generated on site, consistent with the Protection of the Environment Operations Act 1997, Protection of the Environment Operations (Waste) Regulation 2014, and the Waste Classification Guideline (department of Environment, Climate Change and Water, 2009)*

Handling, storage and disposal of all waste streams generated on site is described in Sections 2 and 3, in:

- *Detail the materials to be reused or recycled, either on or off site.*

A separate demolition and construction WMP has been provided to outline the materials to be reused or recycled, either on or off site.

- *Include the Management and Mitigation Measures included in the section 7 of the EIS, Section 5 of the RtS and Appendix Z*

Mitigation measures are to be in accordance with Section 7 of the EIS, Section 5 of the RtS and Appendix Z.

### 1.3. Scope

The assessment and associated recommendations include:

- Identification of refuse streams produced within the development,
- Estimated volumes generated,
- Appropriate segregation methods for each refuse stream,
- Internal systems and equipment requirements,
- Refuse storage, collection and loading facilities design,
- Refuse collection vehicle (RCV) access and manoeuvrability,
- Operational and safety requirements,
- Pollution prevention, and
- Waste minimisation.

The report takes into consideration the associated workplace health and safety issues and cost implications of waste management processes and equipment to ensure safe and cost-effective solutions are in place for long term property management. Recommendations also ensure that noise and odour nuisances are mitigated and visual amenity is maintained and does not adversely affect the surrounding properties.

The recommendations for refuse collection relate to the operational phase of the development only and do not include additional requirements during or after demolition or construction phases, which requires its own separate plan.

Information contained within the report is based on local government authority requirements related to the The Hills Shire and the associated waste services department. The recommendations provided are designed to comply with:

- Council's DCP – Appendix A Waste Management Plan, and
- Better Practice Guide for Waste Management and Recycling in Commercial and Industrial Facilities.

### 1.4. Site Location

The site is located on the corner of Ridgescrop Drive and Gilbert Road, as shown in Figure 1.1. The site has road frontages to Gilbert Road and Ridgescrop Drive, with the latter utilised for service vehicle access. The site is currently operating as an educational facility.

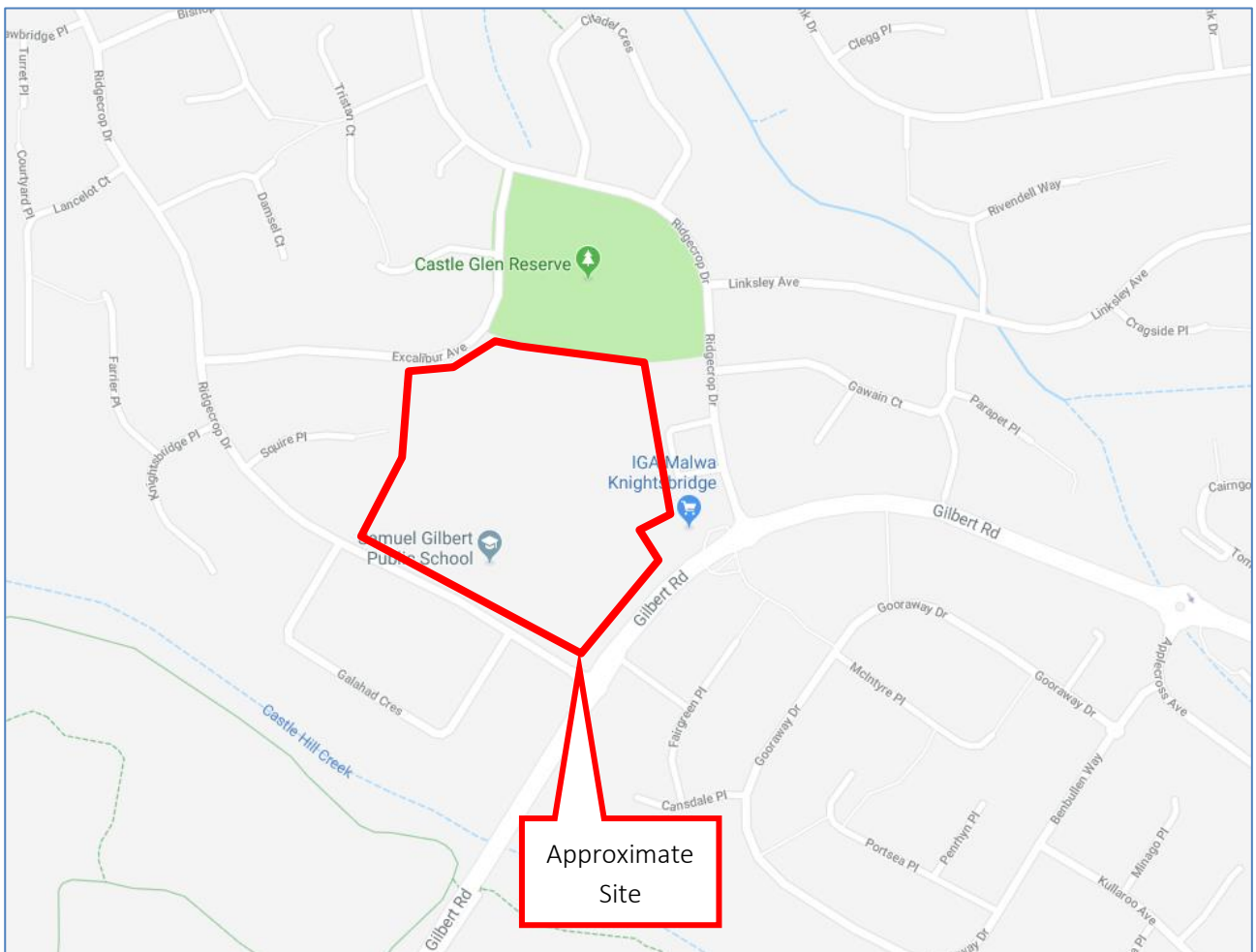


Figure 1.1: Site location





Figure 1.2: Site location

## 1.5. Development Summary

The development consists of an existing educational facility (school) including administration, classrooms, library and canteen areas.

The development proposal consists of removing 12 demountable buildings from an existing school, to provide 25 new teaching spaces totalling 43 permanent spaces, including a new hall, administration and home bases and canteen catering for 1000 students.

The total GFA for the new buildings is 3974.2m<sup>2</sup> GFA, with 679.7m<sup>2</sup> GFA for the refurbishment buildings.

The construction of the new buildings mainly consists of glazing and metal deck roofing.

## 1.6. Existing Refuse Arrangements

TTM has obtained the existing waste collection arrangements for site and are as follows:

Table 1.1: Existing Refuse Arrangements

Item	Arrangement
Existing Staff and Student numbers	<ul style="list-style-type: none"> <li>45 staff</li> <li>780 students</li> </ul>
Proposed Staff and Student numbers	<ul style="list-style-type: none"> <li>58 staff</li> <li>1,000 students</li> </ul>
Existing Waste Collection Area	Refer to Appendix B
Existing Waste Generation (Bin Numbers and Collections)	<ul style="list-style-type: none"> <li>1x 3,000L bulk bin – general waste – weekly collection</li> <li>1x 1,500L bulk bin – general waste – weekly collection</li> <li>1x 3,000L bulk bin – commingled recycling – fortnightly collection</li> </ul>
RCV	Front-lift collection

Detailed calculations and equipment requirements are based on the unit schedules and associated waste generation rates as outlined in the detailed information in Appendix A. Site drawings can be found in Appendix B.

## 2. Refuse Management

The site waste streams may consist of the following:

Table 2.1: Generated Waste Streams

Frequently Generated Waste Streams	
General waste	<b>General waste</b> should be collected in a dedicated receptacle within the allotted space and bagged or wrapped prior to disposal. Operationally, general waste should be bagged and weigh approximately 3kg or less and not exceed the dimensions of the waste receptacles.
Recycling (glass, aluminium and steel cans/tins/lids, paper/cardboard, semi rigid plastics)	<b>Recycling</b> should be collected in a dedicated receptacle to ensure separation from the waste material and must not be bagged. Where applicable, other materials such as cardboard and plastics should be separated.
Organic waste	An alternate refuse disposal method, such as composting for organic waste, may be considered to reduce the total amount of general waste produced. Composting should be arranged with the waste caretaker / cleaner and further information can be found in Appendix C.
Green waste	<b>Green waste</b> is typically removed by a designated maintenance contractor.
Infrequently Generated Waste Streams	
Hard waste / bulky goods	The development has several storage spaces on the ground floor for utilisation of storage and collection of <b>hard waste/ bulky goods</b> . Unless otherwise instructed by council, charitable organisations may be contacted by the waste caretaker/ cleaner as a mode for collections.
Hazardous waste (paints, batteries and cartridges) and E-waste	The waste caretaker / groundsman will assist in the coordination of disposal of <b>specialised / hazardous waste and e-waste</b> such as recycling of electronic, liquid waste and paint/chemicals where required, due to safety and environmental reasons. The waste caretaker should be directed to Council's website for more details for appropriate waste and disposal.

### 2.1. Refuse Disposal, Transfer and Storage Process

Each classroom/office will be supplied with adequate space for storage of at least one full day accumulation of refuse. Typically, schools utilise up to 60L bin receptacles within the classrooms. These waste and recycling bins are placed within close proximity to classroom doors, desk areas, eating and washrooms. Several larger 120L bins (seventeen in total) are also placed around the playground and school areas, as shown in Appendix B.

On completion of each day, or as required during the day, the caretaker / cleaners will transfer the waste and recycling from each room and playground area and decant into the appropriate bins in the refuse area (see Appendix B).

## 3. Refuse Collections

### 3.1. Refuse Vehicle Access and Loading

The site will have vehicle access to the site via Ridgescrop Drive. All refuse will be collected onsite by the existing private contractor, REMONDIS. There will be no changes to existing service accesses and arrangements as a result of these additions.

### 3.2. Collections

The collection area is contained within the ground floor refuse room located in the car park. The refuse area will be in close proximity to the vehicle parked position.

Refuse bin quantities have been based on collection cycles of two days per week for waste and one day per fortnight for recycling.

## 4. Recommended Operational Requirements

### 4.1. On-going Management

All refuse equipment movements are to be managed by caretaker or cleaners at all times. The caretaker/cleaner duties include, but are not limited to the following:

- Organising, exchanging, maintaining and cleaning the refuse bins and associated refuse areas (frequency will depend on waste generation and will be determined based upon site operation),
- Transporting and decanting of bins as required,
- Organising both garbage and recycled waste pick-ups as required,
- Organising and coordinating bulky goods collections,
- Ensuring site safety for residents, children, visitors, staff and contractors,
- Abiding by all relevant OH&S legislation, regulations, and guidelines,
- Assessing any manual handling risks and preparing a manual handling control plan for waste and bin transfers,
- Providing to staff/contractors' equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities, and
- Continual monitoring of equipment uses and scheduling to ensure best operational outcomes.

*Note: As waste volumes may vary according to the development occupants' attitudes to waste disposal and recycling, bin numbers and sizes may need to be altered to suit the operation of the site.*

### 4.2. Waste Minimisation

#### 4.2.1. Education

On-going education and signage is important to ensure people continue to use the facilities as originally intended. Leasing arrangements should contain direction on expectations and waste management services.

#### 4.2.2. Monitoring and Review

Regular monitoring and inspections of waste and related equipment and facilities from the development should be conducted by building management/designated staff for maintenance and sustainability, including but not limited to bin volumes, refuse storage areas and stormwater management.

Waste minimisation requires regular reviewing to ensure operational sustainability of refuse volumes and equipment and economic feasibility. It is recommended that refuse weights and movements are recorded and reviewed. An external review is usually conducted 12 to 18 months after the implementation of the plan.



### 4.2.3. Signage

All receptacles and bins should have adequate signage and labelling, which is clear and easy to read. Standard signage should be provided in and around waste collection and storage areas (See Appendix D).

### 4.3. Safety

Note that transferring refuse bins is considered a hazardous manual task and therefore contractors must ensure a full risk assessment of equipment, surfaces and related gradients is complete. The contractor must provide procedural documentation to appropriate personnel prior to delivery of equipment and occupancy of the development.

### 4.4. Operational Equipment Summary

Equipment required or suitable for use as part of the operational phase of the development is outlined in Table 4.1 below. It should be noted that all collection receptacles and bins should be branded with the appropriate stickers and the use of the Mobius loop or similar identifying recycling equipment.

Table 4.1: Operations Equipment

Component	Description	Quantity	Notes
School	Recycling Bin	1	3,000L bulk bins
	Waste Bins	1	See Appendix C
	Waste Bins	1	1,500L bulk bins
	Recycle Bin	1	See Appendix C
	Green Waste	Subject to operational requirements	
	Organics- Receptacles for use in centralised composting / worm farm or electronic composting bins.	Supplied as and if required	

## Appendix A     Detailed Information

## Refuse Calculations

The generation rates used for the calculation are based on a conservative estimate of the current waste generation provided. It has been assumed that the existing bins are at full capacity during servicing.

Waste and recycling volumes indicated do not include compaction.

Table A.1: Commercial Generation Rates

Type	Waste	Recycling
Existing	5.5 Litres / staff & student / week	1.9 Litres / staff & student / week

Table A.2: Refuse Calculations

Description	Population	Generated Waste (L/week)	Generated Recycling (L/week)
Proposed	1,058	5819	2010
<b>Total</b>	1,058	<b>5819</b>	<b>2010</b>
Refuse per day	-	<b>1164</b>	<b>402</b>
Refuse per collection	-	<b>5819</b>	<b>4020 (per fortnight)</b>
Collections and Equipment	Bin Size (L)	3000L x twice a week and 1500L x once a week	1 x 3000L and 1 x 1500L
	Collections per Week	<b>1-2</b>	<b>1 (per fortnight)</b>
	No Bins Required	<b>2 (1 x 3000L and 1 x 1500L)</b>	<b>One of each</b>



## Appendix B    Site Plans

Site Plan to be inserted



## Appendix C    Systems and Specifications

## Collection Bins

Bin Type	Height	Depth	Width
80 Litre Bin	870mm	530mm	450mm
120 Litre Bin	940mm	560mm	485mm
140 Litre Bin	930mm	615mm	535mm
240 Litre Bin	1080mm	735mm	580mm
660 Litre Bin	1180mm	770mm	1360mm
1100 Litre Bin	1460mm	1230mm	1370mm
1500 Litre Bin	1220mm	1050mm	2040mm
3000 Litre Bin	1450mm	1842mm	1995mm

## Appendix D   Refuse Signage

## Refuse Signage Resource

Signs for garbage, recycling and organics bins should comply with the standard signs promoted by the DECC.

Standard wall posters and bin lid stickers are available for download and printing from the Local Government section of the DECC website [www.environment.nsw.gov.au](http://www.environment.nsw.gov.au), in black and white and appropriate coloured versions where applicable.

Example wall posters



Example bin lid stickers



## Example Public Place Signage





### Example Safety Signage

Safety Signs are required for refuse discharge and storage rooms / areas and must comply with Australian standards “AS 1319 Safety signs for the occupational environment”. Additional state or local government requirements may also apply. Following are examples of typical signs used around a waste storage area. It should be noted however that an assessment must be completed by a qualified fire and safety consultant, prior to occupancy, to determine the correct signage to be used.

### Fire Management



### Refuse Area Management

Do not overfill bin



Lid must be closed

