OPERATIONAL WASTE MANAGEMENT PLAN

ST PATRICKS COLLEGE

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DISCLAIMER
This report is based on information provided by BVN. To that extent this report relies on the accuracy of the information provided to the consultant, this report is not a substitute for legal advice on the relevant environmental related legislation, which applies to businesses, contractors or other bodies. Accordingly, EcCell Environmental will not be liable for any loss or damage that may arise out of this project. The purpose of this report is to document a Waste Management Plan as part of a development application and is supplied with the following conditions: • Drawings and information supplied by the project architect • The figures presented in the report are an estimate only. The actual amount of waste generated will be dependent on the occupancy rate of the building/s and waste generation intensity as well as the building managements approach to waste management. • The building manager will make adjustments as required based on actual waste volumes (if waste is greater than estimated) and increase the number of bins and collections accordingly.

DOCUMENT CONTROL					
Rev.	DATE	COMMENT	AUTHOR	REVIEW	APPROVED BY
Draft	19/12/2019	Issue Draft	Jo Drummond	Simon Lunn	Patrick Nolan
Draft V2	18/01/2020	Issue Draft 2	Jo Drummond	Simon Lunn	Patrick Nolan

1 INTRODUCTION

This Operational Waste Management Plan (OWMP) has been prepared on behalf of St Patricks College. The purpose of this OWMP is to address aspects of waste management for the proposed development to accompany the Strathfield Council Development Application (the DA).

The plan details management requirements for waste and recycling material generated from the ongoing use of the new development in accordance with the Strathfield Consolidated Development Control Plan 2005 Part H *Waste Minimisation and Management Plan* (Strathfield DCP, 2005) and the NSW Environment Protection Authority "Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities" waste generation rates.

1.1 PROJECT SUMMARY

St Patrick's College Campus is located in the Strathfield local government area (LGA), which is located approximately 15km west of Sydney CBD. St Patrick's College sits within an education precinct consisting of the College building and its grounds, the Australian Catholic University (ACU) Campus, and Marie Bashir Public School.

The campus is physically separated by Edgar Street (but which is owned by SPC) and is surrounded on three sides by predominantly low-density housing. The subject site is generally bound by the Australian Catholic University (ACU) Campus to the south, Fraser Street to the west, Shortland Avenue to the North and Frances Street to the east.

The College are designing a new Science and Learning Building (STEMM) located at the centre of the campus, and adjacent to the pedestrianised publicly accessible Edgar Street. The proposed STEMM Building involves the following;

- Demolition of the existing tennis courts located at the centre of the campus;
- Construction of a new four storey science & learning building consisting of:
    - Food tech classrooms;
    - Canteen and café;
    - College dining area, including outdoor dining area;
    - Science learning spaces, including labs;
    - Flexible community and learning spaces;
    - Flexible general learning areas;
    - Two (2) x rooftop tennis courts; and
    - Re-instatement of two (2) x Ground level tennis courts.
    - Re-instatement of covered tiered seating area overlooking sports oval
- Associated basement car park (with 59 spaces), accessed via Fraser Street; and
- New civic space associated with the College, located to the east of the new building.
- Minor alterations to the adjoining forecourt and internal space within the adjoining Coghlan building to the east in order to provide an appropriate interface and connection with this newly created space and STEMM building.

1.2 OBJECTIVES

The OWMP objectives are as follows:

1. Advise the appropriate waste storage, source separation and collection facilities required for the development to maximise recovery of recyclables
2. Ensure waste management facilities are safely and easily accessible to occupants and service providers
3. Ensure waste management facilities are appropriately sized for storage of the expected waste
4. Minimise adverse impacts to health, environmental and safety associated with handling and disposal of waste and recycled material
5. Discourage illegal dumping and prevent large quantities of waste piling up by describing appropriate onsite storage and removal services

2 LEGISLATIVE REQUIREMENTS AND GUIDELINES

2.1 LEGISLATION & REGULATIONS:

This OWMP has been prepared in accordance with legislation relevant to waste management at the site including:

The Environmental Protection Act 1970

Environmental Planning and Assessment Act 1979

- *Environmental Planning and Assessment Regulation 2000*

Protection of the Environment Operations Act 1997

- *Protection of the Environment Operations (General) Regulation 2009*
- *Protection of the Environment Operations (Waste) Regulation 2014*

Waste Avoidance and Resource Recovery Act 2001

State Significant Development (SSD) Conditions

2.2 GUIDELINES

Guidance documents and policies considered in the preparation of this OWMP including:

NSW Environment Protection Authority (EPA) Waste Classification Guidelines 2014

NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012

NSW EPA's Waste Avoidance and Resource Recovery (WARR) Strategy 2014-21

Australian Government National Waste Policy - Less Waste More Resources 2018

2.3 STATE SIGNIFICANT DEVELOPMENT APPLICATION

The purpose of this OWMP is to meet the requirements of the State Significant Development Application (SSDA) conditions of consent, particularly Condition 4 and Condition 20 as listed in Table 1.

Table 1 - Condition of Approval (CoA) 4 and 20

CoA Reference Page in OWMP	CoA Detail
Section 3 Waste Classification	Identify, quantity and classify waste streams to be generated during operation of the school.
Section 4 Waste Management	Describe measures to be implemented to manage, reuse, and recycle and safely dispose of the waste
Section 5 Waste Storage & Access Requirements Appendix A & B	Identify servicing arrangements including but not limited to waste management loading zones.

3 WASTE CLASSIFICATION

3.1 WASTE TYPES

The NSW EPA Waste Classification Guidelines (NSW EPA, 2014a) groups wastes with similar risks to the environment and human health, as defined in the Protection of the Environment Operations Act 1997. The primary waste streams expected to be generated from the added facility at St Patricks College are summarised in Table 2.

Table 2 - Potential Waste Types and Classifications

Waste Type	EPA Classification	Waste Management
Paper (excludes paper towels, toilet paper & tissues)	General solid waste (non-putrescible)	Co-mingled recycling. Container Deposit System
Cardboard (excludes waxed cardboard)	General solid waste (non-putrescible)	
Metals (aluminium cans, foil, steel cans etc)	General solid waste (non-putrescible)	
Glass (bottles and containers)	General solid waste (non-putrescible)	
Plastics (recyclables)	General solid waste (non-putrescible)	
Non-recyclable Plastics (Dirty/contaminated plastic, Plastic bags & film, clingwrap)	General solid waste (non-putrescible)	General Waste Onsite Compost
General refuse dry waste	General solid waste (non-putrescible)	
Food scraps / organics material	General solid waste (putrescible)	
Lead-acid or nickel-cadmium batteries, e-waste, hazardous chemicals used in the science lab	Potentially hazardous waste	Specific recycling

Waste from the STEMM building will be separated into three streams as follows:

Co-mingled recyclables A mixture or blend of recyclable materials including paper, cardboard, glass bottles and jars, steel cans and aerosols, aluminium packaging and plastic containers.

Garbage Waste All non-recyclable non-hazardous and non-problem waste that fits inside the nominated bin, commonly termed 'garbage' and includes food waste.

Problem waste Materials that cannot easily be managed by regular waste and recycling services and is often hazardous in nature. Includes paints, chemicals, batteries, e-waste, light bulbs, gas bottles and cooking oils.

3.2 ESTIMATE OF QUANTITIES

The generation rates directed by Part H of Strathfield Council Development Control Plan 2005 *Waste Minimisation and Management Plan* (Strathfield DCP, 2005) have been adopted to form the basis of the following operational waste estimates. The following guidance documents have also been referenced as per this direction:

- NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012 (NSW EPA, 2012)

To derive indicative quantities of waste, the following assumptions have been applied:

- The school attendance rate = 38 weeks for students and 39 for staff;
- Waste collection frequency is:
  - 5 days per week for General Waste,
  - 1 day per week for Recycling.
- Canteen/dining room and food tech facilities are operating 5 Days a week;
- "Floor area" relates to the sum of each area of each floor of the STEMM building measured from the internal face of the external walls, as well as any external dining areas.

Appendices

Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities

Table 16 Estimated commercial and retail waste generation rates

Type of premises	Average L per 100 m² per day		Maximum L per 100 m² per day		Number of businesses surveyed
	Waste	Recycling	Waste	Recycling	
Backpackers accommodation, boarding house, guest house	30	10	35	15	2
Showrooms	10	25	22	100	5
Butcher	185	100	200	145	2
Delicatessen	30	0	30	0	1
Fish shop	250	85	250	85	1
Greengrocer	310	410	310	410	1
Hairdresser	40	40	62	55	4
Restaurants	190	190	460	490	7
Supermarket with fresh food	30	0	30	0	1
Supermarket without fresh food	140	75	140	72	1
Takeaway	175	685	175	690	1
Hotels, bars, pubs	80	35	300	85	4
Licensed club	25	20	35	27	4
Motel (with public restaurant)	20	0	20	0	1
Motel (without public restaurant)	25	0	25	0	1
Offices	8	6	16	12	2
Primary education	7	0	7	0	1
Tertiary education	25	3	40	7	3

Figure 1 - NSW EPA's Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities 2012 (NSW EPA, 2012)

Table 3 - Waste Generation Rates from (NSW EPA, 2012)

Premisis Type	Waste Guideline Equivelent	Material Type	Guideline Value per 100m2 per day	Days counted	Guideline Value per 100m2 per week
Canteen	Takeaway	Waste	175	5	875
		Recycling	685	5	3425
Food Tech Room	Restaurants	Waste	190	5	950
		Recycling	190	5	950
Tertiary schooling	Tertiary education	Waste	25	5	125
		Recycling	3	5	15

Table 4 - Waste Estimate Per Day Bins Required

Premises Type	Area (sqm)	Generated Garbage (L/Day)	Generated Recycling (L/Day)	Size of Bin Used (L)	# Bins Required
Canteen	67	117.25	458.95	240 (0.43m2)	3
Food Tech Room / Dining Area	304	577.6	577.6	240 (0.43m2)	6
Tertiary schooling	2189	547.25	65.67	60 (0.20m2)	12

Table 5 - Extra Bin Requirements in the waste transfer station

# Garbage Bins Required (1100L)	# Recycling Bins Required (1100L)	Area Reqd. Estimate (including circulation space x2)	Existing Area Used as Bin Storage	Total Available Area
2	6	21.28	13.72	108

4 WASTE MANAGEMENT

4.1 SEGREGATING WASTE

Waste will be segregated into two separate streams in the food tech and canteen area :

- Co-mingled Recycling – 240L Recycling Bins
- General Waste – 240L General Waste Bins

Tertiary Schooling

- Co-mingled Recycling – 60L Recycling Bins
- General Waste – 60L General Waste Bins

- Problem waste – Stored separately in the waste storage space and collections arranged as required

Several strategies can be used to avoid mistakes when separating waste and recyclables and make sure bins and equipment are used correctly. These include:

- Educational information provided to all student's, visitors staff in correct waste separation and collection procedures
- Using clear signage with consistent design and colours on waste collection bins
- Ensure bins and signage using colour coding according to AS4123.7-2006 Mobile Waste Containers – Part 7: colours, markings and designation requirements
- Ensuring all waste can be easily, safely and correctly segregated at the point of generation.

4.2 WASTE STORAGE SYSTEMS

It is anticipated that the separate 60 & 240 Litre bins will be placed in dedicated areas in the canteen, dining room and food tech rooms. When full these bins will be taken to the Waterford House waste transfer station and tipped into 1100 L mobile garbage bins (MGBs) ready for collection. All waste is to be sorted and stored on each level and not within a public place. Bins will be kept clean and in good condition and any damaged, lidless, wheel-less, split or incomplete bins will be repaired or disposed of after being replaced.

Small quantities of hazardous wastes may be generated (e.g. light bulbs, E-waste, batteries, oil, chemicals or paint). Separate containers for the safe storage of these wastes in the waste storage areas shall be provided where applicable, prior to removal offsite by an appropriately licensed contractor for recycling or disposal at a licensed facility.

An on-site composting system is in place for organic waste which is then used on the gardens an Enviro Bank System will be considered for recycling bottles and cans.

4.3 WASTE MOVEMENT

In general, waste movement from generation to collection, will undertake the following path for the waste and recycling from the STEMM building:

Figure 2 - STEMM Building Waste Pathway

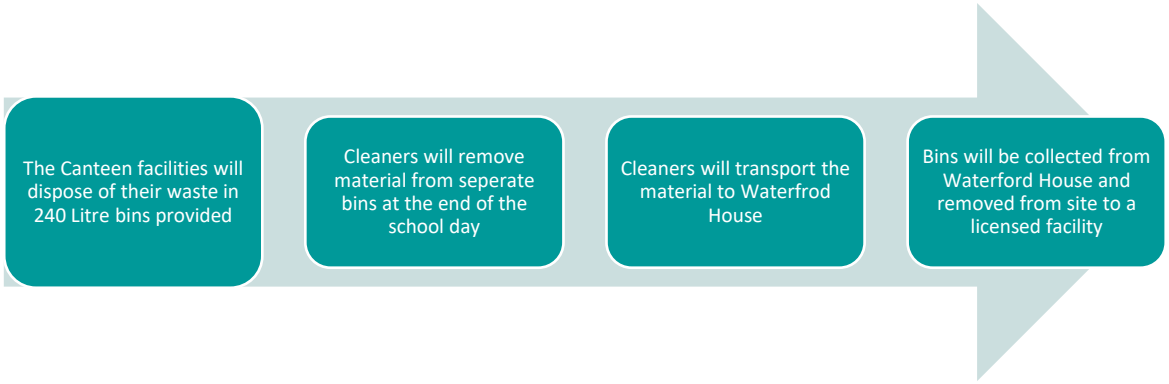


Figure 3 - Canteen Waste Pathway

It is also relevant that:

- Waste is to be collected by an appropriate waste transporter and taken to a licensed facility;
- The path from the STEMM building to Waterford House will be level for an easy transfer of waste and recycling;
- A bin tug will may be used where moving regular bins over long distances (Appendix C for an example)
- Appropriate personal protective equipment (PPE) will be provided for all people handling waste or bins.

4.4 WASTE REDUCTION

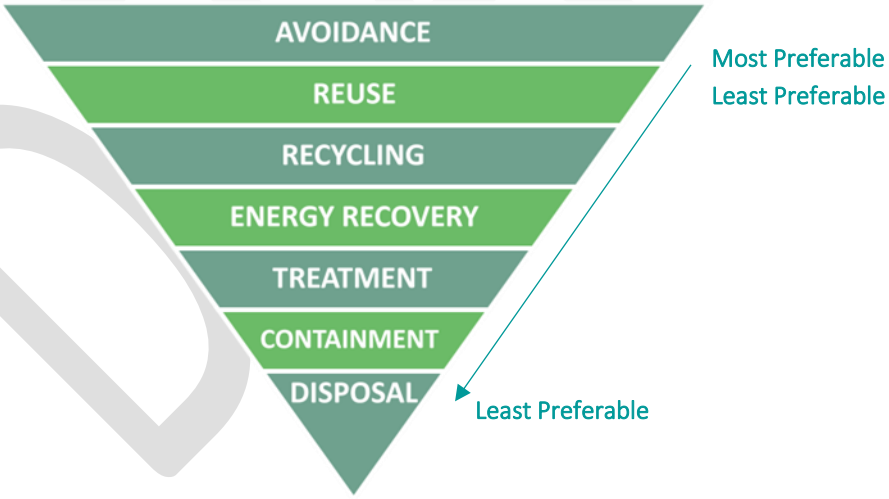


Figure 4 - Order of the Waste Hierarchy

St Patricks College will endeavour to adopt the following waste management practices in accordance with the Waste Avoidance and Resource Recovery Act 2001 (NSW EPA, 2014).

AVOID / REDUCE

- Reduce general waste at the source, determine changes in returnable delivery systems including packaging and purchasing.
- Require suppliers to use stackable/ returnable/reusable boxes instead of disposable cardboard boxes.

- Plastic free or 'nude food' lunch day
- Encourage BYO for the following items: water bottles, containers, straws, reusable utensil sets, washable hand towel, carry bag and coffee cups.
- Focus on minimising waste (i.e. excess packaging, take-back, post use collection).

REUSE

- Set up a reuse area for excess materials and promote the contribution and reuse of excess food.
- Donate old (useable) computer/electrical equipment, furniture and fittings to staff, charities, or sell at auction.
- Implement the Enviro Bank program for bottles and cans.

RECYCLE

- Introduce recycling systems for major waste streams generated onsite including:
- Paper and cardboard
- Bottles and cans
- Packaging and plastics
- Modify or refresh signage on recycling bins or in recycling areas to promote correct recycling practice.
- Provide regular information and education to staff on appropriate usage and recycling bins.

5 WASTE BINS

Bins will be placed around the new STEMM building to collect general waste and recycling including areas in the canteen, food tech rooms and tertiary schooling. The bins will be sized to accommodate all applicable waste streams. Bins will be cleared daily by the cleaners and taken to Waterford House. Daily collection of this waste and weekly collection of recycling will be provided by Doyles Brothers Waste Service .

An indicative waste pathway diagram is presented for the following:

- the location and configuration of 240 L bins on the ground level of the STEMM building (Appendix A);
- how bins are to be transferred from the STEMM building to the waste transfer station and subsequent collection by vehicles (Appendix B).

5.1 WASTE TRANSFER AREA

The basic requirements for waste transfer area are as follows:

- To be of adequate size
- Integrated with building design and site landscaping.
- Assurance that OH&S requirements for staff and waste contractors are met.
- Hold all the bins generated daily and allow enough room to clean and safely manoeuvre bins.
- Located a maximum of 9m from the collection point and have a minimum of 1m central isle between rows of bins.

General waste and recycling collection facilities will be located in a position that is convenient for both users and waste collectors and:

- has easy, direct and convenient access for students, cleaners and other users of the facility
- has easy transfer of bins to the collection point
- has easy, direct and convenient access for collection service providers
- is secure and provide protection against potential vandalism.

To maintain hygiene:

- prevent vermin from accessing waste collection area,
- assign responsibility for keeping bins and collection points clean
- do not allow bins to sit open for extended periods of time
- keep waste collection areas free of clutter and dumped rubbish

6 WASTE COLLECTION

All generated waste and recycling will be collected by Doyle Brothers a private waste contractor to an agreed schedule for collection. Waste Bins will be collected at a nominated loading area accessed off the ground level entry from the Waterford House (location) an adjoining property which is located at 22 Merley Road Strathfield, NSW.

Cleaners will be nominated as being responsible for transferring the bins to the collection point and back. For the tertiary schooling waste this will involve removing material from 60 L bins and decant to a 240L bin which will then be decanted to a 1100 L bin at Waterford House. For the Canteen and Food tech waste the 240L bins will be transported as they are when full.

6.1 VEHICLE MOVEMENTS

Waste collection vehicles will collect in such a manner as to minimize risk of damage to the roadway, building or other services. Waste collection vehicles will not obstruct access to adjacent premises, roadways or parking bays. In addition, waste collection will be carried out with due care for public safety including other vehicles and passers-by.

6.2 COLLECTION HOURS

Collection of waste and recycling will only occur at an agreed upon and reasonable time (e.g. somewhere between 8am and 6pm) on collection days to minimize noise disturbance to the nearby residents.

6.3 CONTRACTORS

A contract with a licensed waste contractor for the removal of all waste, will be arranged prior to an occupation certificate or commencement of use (earlier of the two). The contract will also include provisions for the collection of Hazardous Waste.

Upon engagement, written evidence of a valid and current contract with a licensed collector for waste and recycling collection will be provided to St Patricks College administration. The contract will include details on the method, timing and disposal of waste. Commercial waste service collections and waste storage arrangements will be conducted in accordance with the Council's Waste Policy.

6.4 WASTE CONTRACT

The compliance requirements for waste contractors under contract to St Patricks College include a requirement to:

- Meet the conditions of State and Local Government regulations on client and contractor compliance
- Have the related licences and weighbridge calibration obligations at the facilities the waste contractor uses for recycling, reprocessing and landfill facilities.
- Adhere to any additional specific contract conditions established between St Patricks College and the waste contractor, including but not limited to:
    - The docketing; when collecting loaded bins of waste or recycling from St Patricks College i.e., data to include; size of bin, type of load, time and date of collection and licensed facility where material is taken to .
    - The pick-up or collection of loads and the associated weighbridge dockets are to be included in monthly reporting and monthly invoice.
    - Hazardous chemicals may need to be collected from the STEMM building and a disposal docket verifying that the hazardous waste has gone to a facility that can accept it must be provided with the invoice.

7 ONGOING MANAGEMENT

This OWMP forms the basis of operational waste management on site for the development. It is living document which will be reviewed and revised to provide increased accuracy of waste generation estimates and to ensure appropriate onsite waste management in accordance with current and future waste management regulations. Compliance by the administrative manager, staff, cleaning contractors and waste collection contractor is essential to ensure the efficacy of the system.

7.1 ROLES & RESPONSIBILITIES

Table 6 - Roles and Responsibilities

Personnel	Responsibility / Activity	Monitoring
Facility Manager	Issue and execute contracts to Waste Contractor and Cleaning Contract; and Provide educational material to students and staff Arrange student, staff and cleaner training in order to maximise effectiveness of waste management. Monitor the number of bins required as waste volumes may change according to the increase of student numbers, usage and occupants' attitudes to waste disposal Ensure site safety for students, visitors, staff and contractors	Monitor contract and cleaners for compliance to the Waste Management Plan.
Students / Staff / Cleaners	Responsible for keeping waste segregated into different streams as generated by retail and residential use; and Responsible for moving materials to the waste storage area; Organising, maintaining and cleaning the waste bins	Report contamination in co-mingled bins.
Waste Contractors	Acknowledge and comply with waste collection targets; Abide by all relevant OH&S legislation, regulations, and guidelines	Quantify the amount and types of waste, report and address contamination through regular monitoring/bin inspections and agreed upon waste reports. Qualify location of waste and recycling disposal to a licensed facility.

7.2 EDUCATION AND SIGNAGE

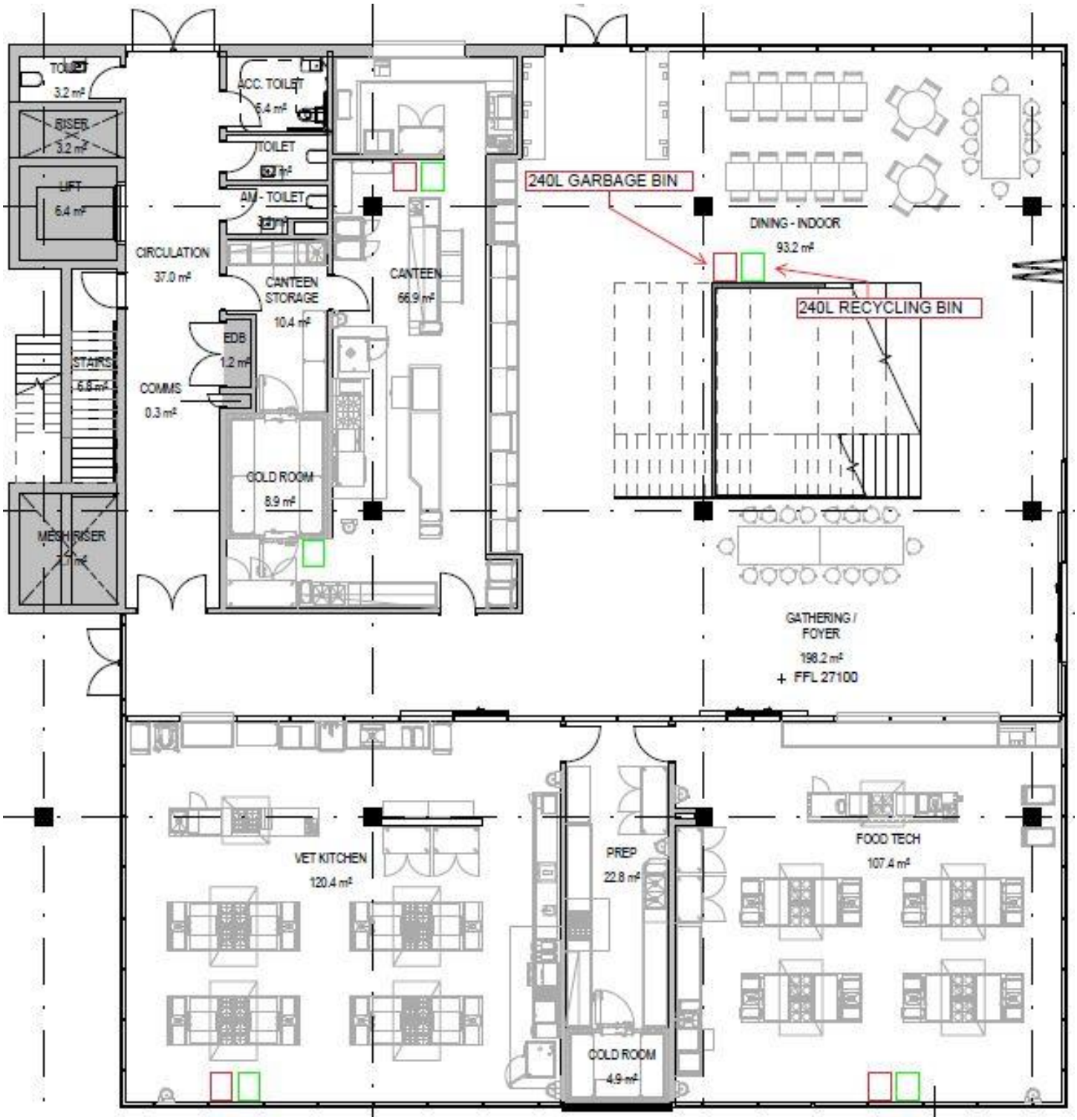
Educational material encouraging correct separation of garbage and recycling items will be provided to students and staff to ensure correct use of the waste management system implemented at the school. It is recommended that information is provided in multiple languages to support correct practises and minimise contamination in the collection MGB.

Signage will be provided in all waste disposal, storage and collection areas demonstrating how to use the waste management system, including what materials are acceptable in each bin. All waste streams will be stored in clearly labelled, colour coded bins as appropriate to ensure that waste streams are not inadvertently mixed. Signage will be prepared and located on site in accordance with the Australian Standard (AS 1319) for safety signs, and the NSW EPA and Australian Standard for recycling signage. Examples of signage are shown in Appendix D.

7.3 REPORTING

It is recommended that facility management ensure that all waste service providers submit monthly reports on all equipment movements and weights of any waste and recycling products removed from the development and evidence that the material has been taken to a licensed facility that can accept the material. Regular reviews of servicing should take place to ensure operational and economic best practise and to assist with sustainability reporting.

APPENDIX A – PROPOSED LOCATION OF 240 L BINS ON THE GROUND LEVEL OF THE STEMM BUILDING



APPENDIX B – WASTE FLOW PATHWAY FROM THE STEMM BUILDING TO THE WASTE TRANSFER STATION

APPENDIX C – EXAMPLE OF TYPICAL BIN MOVER

Typical applications:

Move trolleys, waste bin trailers and 660litre/1100 litre bins up and down a ramp incline. Ideal for Apartment Buildings (to move waste bins located at a basement level to road level).

Quiet, smooth operation with zero emissions and simple to use, no driver's licence required

Features:

Up to 1 Tonne on a ramp surface (depending on ballast and incline)

Anti rollback system on slopes

Footprint: 1548L x 795W x 1104H (handle in the drive position)

Pin Hitch is standard however alternate hitching options may be available to suit your specific application (e.g./tow ball)

Safety Features:

Intuitive paddle lever control

Stops and repels the unit if activated when reversing.

Site assessment recommended to assess ramp incline steepness

Reference:

https://www.elephantsfoot.com.au/

https://www.medicalsearch.com.au/battery-electric-wheelie-bin-movers-240-660-and-1100-litre-bins/p/113192

APPENDIX D – EXAMPLES OF APPROPRIATE WASTE SIGNAGE