



*environmental management
pty ltd*

OPERATIONAL WASTE MANAGEMENT PLAN (OWMP)

NEW PRIMARY SCHOOL AT GOOGONG

Revision Number: VERSION 1

Report Date: 24/08/2021

Presented by: **JO DRUMMOND**
ECCELL ENVIRONMENTAL MANAGEMENT
35 WAVERLEY CRESCENT
BONDI JUNCTION NSW 2022
www.eccellenvironmental.com.au

Submitted to: **PAUL TODHUNTER**
PROJECT MANAGER
Hansen Yuncken
ptodhunter@hansenyuncken.com.au

TABLE OF CONTENTS

1	INTRODUCTION	1
1.1	PROJECT SUMMARY	1
2	LEGISLATIVE REQUIREMENTS AND GUIDELINES	3
2.1	LEGISLATION AND REGULATIONS	3
2.2	STANDARD SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SEARS)	4
2.3	EDUCATIONAL FACILITIES STANDARDS AND GUIDELINES (EFSG)	4
2.4	GREEN STAR DESIGN & AS BUILT 08A AND 08B.....	5
3	WASTE GENERATION	6
3.1	WASTE TYPES	6
3.2	WASTE HIERARCHY	8
4	WASTE ESTIMATES.....	9
4.1	ESTIMATE OF QUANTITIES	9
4.2	ESTIMATE OF QUANTITIES	10
4.3	STORAGE AREA SIZE ESTIMATES	10
4.4	WASTE STORAGE AREA	10
4.5	WASTE FACILITIES CONSTRUCTION / MAINTENANCE.....	11
5	WASTE MANAGEMENT	11
5.1	WASTE STORAGE SYSTEMS	11
5.2	WASTE MOVEMENT	12
5.3	WASTE COLLECTION POINT.....	12
5.4	VEHICLE MOVEMENTS	12
5.5	COLLECTION HOURS.....	12
5.6	CONTRACTORS	13
5.7	SEGREGATING WASTE.....	13
6	ONGOING MANAGEMENT.....	13
6.1	SIGNAGE.....	14
6.2	EDUCATION & TRAINING	14
6.3	ROLES & RESPONSIBILITIES	14
7	REVIEW PROCESS.....	16
8	LIMITATIONS	16

APPENDICES

APPENDIX A – PROPOSED WASTE STORAGE AREA AND TRAFFIC FLOW	17
APPENDIX B – WASTE STORAGE AREA BIN LAYOUT	18
APPENDIX C – SWEPT PATHS (12.5m Radius)	19
APPENDIX D – EXAMPLES OF APPROPRIATE WASTE SIGNAGE	20

LIST OF TABLES

Table 1 - Building breakdown by area	3
Table 2 - SEARs Requirements.....	4
Table 3 - Green Star Requirements	5
Table 4 - Potential Waste Types and Classifications & AS 4123.7 Waste Storage Requirements	7
Table 5 - Implementing the Waste Hierarchy	8
Table 6 - Weekly waste generation (Litres/week) across different schools currently operating in the wider Sydney area	9
Table 7 - Waste Generation Estimates.....	10
Table 8 - Waste Pad Storage Area - Estimated Requirements	10
Table 9 - AS 4123.7 Waste Storage Requirements.....	14
Table 10 - Roles and Responsibilities	14

LIST OF FIGURES

Figure 1 - Site aerial photograph (<i>Source: Nearmap</i>).....	2
Figure 2 - Order of the Waste Hierarchy	8

DISCLAIMER

This report is based on information provided by Hansen Yuncken Pty Ltd.

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.

DOCUMENT CONTROL

ISSUE NUMBER	DATE	COMMENTS	AUTHOR	REVIEW
VERSION 01	20/05/2021	Issue	Simon Lunn	Jo Drummond
VERSION 1.1	7/06/2021	Minor text update to the transport of various waste streams	Simon Lunn	Jo Drummond
VERSION 1.2	24/08/2021	Updated Appendices. Added section 5.1.1 Composting	Simon Lunn	Jo Drummond

1 INTRODUCTION

This Operational Waste Management Plan (OWMP) accompanies an Environmental Impact Statement (EIS) pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act) in support of an application for a State Significant Development (SSD-10326042).

The development is for a new primary school located on land bound by Gorman Drive, Aprasia Avenue, Wilkins Way and McPhail Way in Googong.

This report addresses the relevant Secretary's Environmental Assessment Requirements (SEARs), namely:

- SEARs 18

This purpose of this OWMP is to:

- Detail the type and quantity of waste to be generated during operation of the development;
- Advise the appropriate waste storage, source separation and collection facilities to maximise recovery of recyclables;
- Ensure waste management facilities are:
 - safely and easily accessible to occupants and service providers; and
 - appropriately sized for storage of the expected waste.
- Describe the handling, storage and disposal of all waste streams generated on site;
- Minimise adverse impacts to health, environmental and safety associated with handling and disposal of waste and recycled material;
- Discourage illegal dumping and prevent large quantities of waste piling up by describing appropriate onsite storage and removal services; and
- Help facilitate diversion from landfill targets of 75% of all waste generated as per the requirements of *NSW Waste Resource and Recovery Act 2014*, with scope to reach an aspirational target of 85% in anticipation of future mandatory targets as indicated in the *Cleaning Up Our Act: The Future for Waste and Resource Recovery in NSW. Issues Paper 2020*.

1.1 PROJECT SUMMARY

The Proposal

The proposed development is for construction and operation of a new primary school in Googong that will accommodate up to 700 students.

The proposed development is a Core 35 school and includes:

- A collection of 1-2 storey buildings containing 30 home base units, 3 special education learning units, canteen, hall, library and administrative facilities.
- On-site carpark with 60 spaces and on-street kiss-and-ride facilities.

- Outdoor sports court and play area.
- Integrated landscaping, fencing and signage.

Site Description

The site is located at Aprasia Avenue, Googong, and is formally described as Lot 3 DP1179941 (refer to Figure 1). The site is irregular in shape and has an area of 28,118.39m².

The site is located within the Queanbeyan-Palerang Regional Council local government area approximately 10km south of the Queanbeyan Central Business District.

The site is bordered by Aprasia Avenue to the north, Gorman Drive to the southwest, Wilkins way to the east/southeast and McPhail way to the west.

Googong North Village Centre, which contains a child care centre, supermarket, cafes and take-away food outlets, is located approximately 100m west of the site across McPhail Way. The site is otherwise surrounded by low density residential development.

Googong is a recently developed town, with the planning beginning in the early 2000s and the first residents taking up residence in 2014.

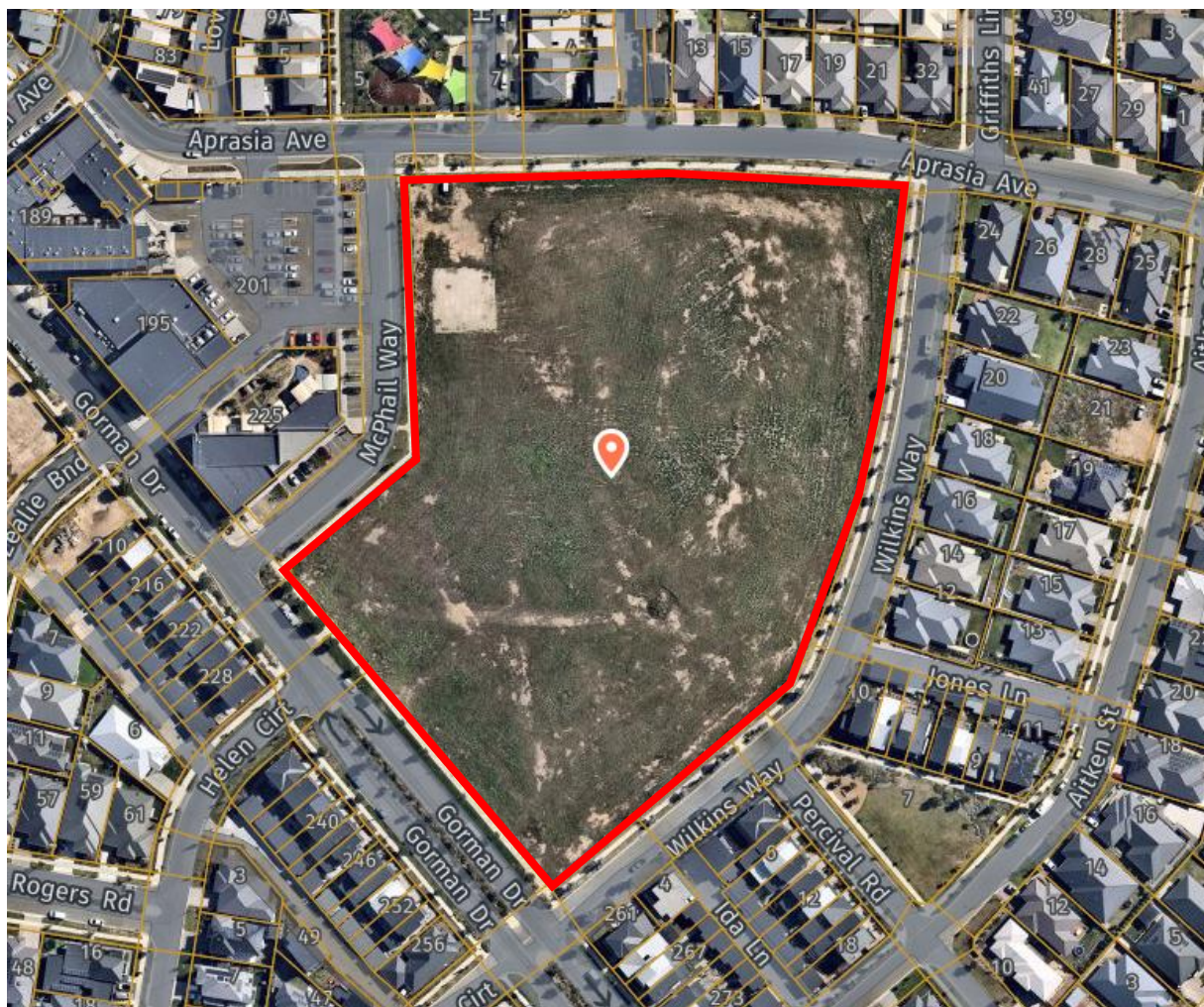


Figure 1 - Site aerial photograph (Source: Nearmap)

The breakdown of Gross Floor Area (GFA) is shown in Table 1.

Table 1 - Building breakdown by area

GFA - ABL BLOCKS	
BUILDING / LOCATION	AREA
GFA - ABL BLOCKS - LEVEL 00	105.16 m ²
GFA - ABL BLOCKS - LEVEL 01	105.16 m ²
	210.33 m ²
GFA - BLOCK A	
BUILDING / LOCATION	AREA
GFA - BLOCK A - LEVEL 00	963.14 m ²
GFA - BLOCK A - LEVEL 01	874.19 m ²
	1837.33 m ²
GFA - BLOCK B	
BUILDING / LOCATION	AREA
GFA - BLOCK B - LEVEL 00	640.99 m ²
GFA - BLOCK B - LEVEL 01	633.28 m ²
	1274.27 m ²
GFA - BLOCK C	
BUILDING / LOCATION	AREA
GFA - BLOCK C - LEVEL 00	874.59 m ²
GFA - BLOCK C - LEVEL 01	874.59 m ²
	1749.18 m ²
GFA - BLOCK D	
BUILDING / LOCATION	AREA
GFA - BLOCK D - LEVEL 00	757.10 m ²
	757.10 m ²

These figures are based on design drawings provided by Pedavoli Architects Pty Ltd.

2 LEGISLATIVE REQUIREMENTS AND GUIDELINES

2.1 LEGISLATION AND REGULATIONS

Guidance documents and policies considered in the preparation of this OWMP are included below:

- 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 with expected future guidelines to replace this during the construction and operation phases of the development;
- Green Star Design & As Built Credit Criteria;
- State Significant Development Application SSDA;
- Standard Secretary's Environmental Assessment Requirements (SEARs)
- Educational Facilities Standards & Guidelines (EFSG) NSW Updated 2020; and
- Queanbeyan-Palerang Regional Council - Googong Development Control Plan (DCP) 2010.

2.2 STANDARD SECRETARY'S ENVIRONMENTAL ASSESSMENT REQUIREMENTS (SEARS)

This OWMP meets the general standards of the SEARs as listed in Table 2.

Table 2 - SEARs Requirements

Action	Requirement	OWMP Document Ref.
1. Classify	Identify, quantify and classify the likely waste streams to be generated during construction and operation.	Table 4
2. Describe	Describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	Section 4
3. Identify	Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	Section 5

2.3 EDUCATIONAL FACILITIES STANDARDS AND GUIDELINES (EFSG)

The EFSG section DG02 Ecologically Sustainable Development 2.7.2 Operational Waste requires new and refurbished schools to establish operational waste targets. The minimum targets adopted for the operation of waste for this school reflects those from NSW Waste and Resource Recovery Strategy 2014-21, released in December 2014 which are to:

1. increase recycling rates to 70% for municipal solid waste; and
2. increase total waste diverted from landfill to 75%.

By setting realistic achievable goals, targets and performance, the OWMP is more likely to succeed, and the school is able to report on waste diversion and reduction targets in line with the Department of Education's waste contract and comply with State Significant Development conditions. Examples of key performance indicators that may be relevant include:



2.4 GREEN STAR DESIGN & AS BUILT 08A AND 08B

Aim of Credit

To recognise projects that implement waste management plans that facilitate the re-use, recycling, or conversion of waste into energy, and stewardship of items to reduce the quantity of outgoing waste.

Table 3 - Green Star Requirements

8A PERFORMANCE PATHWAY		
Separation of waste streams	<p>The following waste streams must be provided with separate bins or containers:</p> <ul style="list-style-type: none"> • general waste; • paper and cardboard; • glass; • plastic; and • at least one other waste stream. <p>Advice from the Green Building Council of Australia GBCA indicates that where the waste collection service collects recyclables as a comingled stream, the requirement to provide separated waste streams for these recyclables is removed.</p> <p>This is permissible to the extent of comingling accepted by the waste collection service. For example, if glass and plastic are collected as comingled, then paper and cardboard is still required to have a separated waste stream.</p>	<p>This OWMP outlines provision for the management and collection of the following waste streams:</p> <ul style="list-style-type: none"> • general waste; • paper and cardboard; • soft plastics; • comingled recycling; • Container Deposit Scheme (Return & Earn); and • food / organics; <p>Separate bins will be provided for each waste stream stored in a central waste storage area and bins will be clearly marked. Return & Earn bottles will be securely stored to deter potential theft and trespassing.</p>

8A PERFORMANCE PATHWAY		
Dedicated Waste Storage Area	Two dedicated and sufficiently sized areas for the storage and collection of the applicable waste streams shall be provided.	<p>Calculations for the waste storage area (Fortnightly collection has been assumed for paper / cardboard waste;</p> <ul style="list-style-type: none"> Weekly collection has been assumed for all other waste types; The final frequency of waste collection will be made once final waste contractor agreements are in place. <p>Table 7) for the school have been carried out based on:</p> <ul style="list-style-type: none"> school areas and number of students attending the School; collection method and materials handling requirements of each stream; collection frequency for each waste stream; projected tenancy structure impact on the waste collection services supply chain; and hygiene, cleanliness and aesthetic aspects to the benefit of the development.
	<p>Access requirements for waste collection areas must adhere to best practices.</p> <p>These access arrangements must be as outlined within third-party Best Practice Guidelines.</p> <p>Best Practice Guidelines outline the following requirements:</p> <ul style="list-style-type: none"> The access pathway for wheeling bins between a central waste storage point and the collection point must be level and free of steps or kerbs. The maximum manual handling distance between the storage point and the collection point for mobile garbage bins is 20 meters. 	<p>The access pathway for transporting waste from the school building facilities to the concrete storage waste pad is level and free of steps.</p> <p>The waste collection point is located on the waste pad as shown in Appendix A. Vehicle swept paths and parking location are provided in further detail in the traffic management plan.</p>

3 WASTE GENERATION

3.1 WASTE TYPES

The NSW EPA Waste Classification Guidelines (NSW EPA, 2014a) groups wastes that pose 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 and corresponding EPA classifications for the ongoing operation of the development are summarised in Table 4.

Table 4 - Potential Waste Types and Classifications & AS 4123.7 Waste Storage Requirements

EPA Classification	Waste Stream	Waste Type	Bin Colour	Waste Management
General solid waste (putrescible)	Organics	Food Organics	Lime Green	Food waste bin
		Garden Organics	N/A	Composted on site or removed as required by greenskeeper/arborist
General solid waste (non-putrescible)	Recycling	Metals (steel, aluminium, stainless)	Yellow	Comingled recycling bins
		Hard Plastics (recyclables)		
		Glass (bottles, containers, jars)		
		Soft Plastic (plastic bags, bread bags, bubble wrap, plastic wrappers, etc.)	Any Colour	Plastic recycling bins
		Return & Earn Plastic Bottles (ONLY containers with the 10c refund label)	White	Container Deposit Scheme
		Paper (excluding paper towels, toilet paper & tissues)	Blue	Paper & Cardboard recycling bins
		Cardboard (excluding waxed cardboard)		
	General	Non-recyclable Plastics (Dirty/contaminated plastic)	Red	General waste bins
		General refuse		
Potentially hazardous waste	Other	Chemical liquid & solid waste	N/A	Science department to manage storage, collection and Material Safety Data Sheets (MSDS)
		Nespresso pods and capsules		Collected by Nespresso
		Sanitary waste (including feminine hygiene products, nappy waste)		Collected by an appropriate contractor or sub-contractor as defined in the buy.NSW Contract 9698 agreement
		Lead-acid or nickel-cadmium batteries		
		secure destruction (of sensitive documents)		
		Used printer cartridges		
		e-waste		

Designers must refer to EFSG - AS 4123.7 for colours, markings, and designation requirements for further guidance on bin colour, waste stream and waste type.

3.2 WASTE HIERARCHY

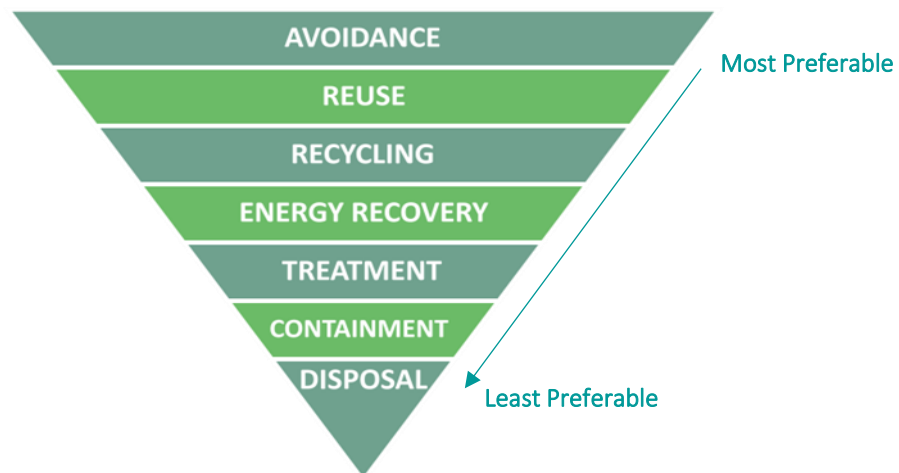


Figure 2 - Order of the Waste Hierarchy

The EFSG requires new and refurbished schools to identify opportunities for reuse and recycling in the operation of the facilities. Table 5 indicates waste management practices that should be adopted in accordance with the *Waste Avoidance and Resource Recovery Act 2001* (NSW EPA, 2014).

Table 5 - Implementing the Waste Hierarchy

Implementing the Waste Hierarchy	
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.	
Reduce consumption of resources that have the potential to become waste through strategies such as green purchasing - purchasing items with reusable, recyclable, have no packaging or are biodegradable.	
Examining all processes to determine where wastes are produced and to devise measures for waste prevention or reduction.	
Devising ways of reducing waste with students so they too can share in the savings (i.e. rewards for students who reduce waste).	
Partnering with others to assist with waste minimisation.	
Keeping track of changes and improvement.	
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.	
Reusing drums, cartridges and containers where possible.	
Selling or donating usable waste materials to other organisations.	
Recycle	
Introduce recycling systems for major waste streams generated onsite including:	
<ul style="list-style-type: none"> Paper and cardboard; 	

Implementing the Waste Hierarchy
<ul style="list-style-type: none"> • Food / Organics; • Soft Plastics; • Bottles and cans; and • 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.
Investigating alternative uses for organic waste that cannot be reduced or reused (i.e. composting, bio-gas from waste, digester, etc.).
Provision for a bin station at a central location in school with the option of source separation and clear waste signage to ensure source separation.
Explore opportunities for recycling waste types not included in the mandatory stream separation (i.e. batteries, coffee cups, e-waste, etc.)
Waste Disposal
Students, staff and cleaners dispose of waste in accordance with the Waste Management Policy.
Monitoring and assessment
Request waste contractor to provide monthly data and reporting on recycled and materials sent to landfill.

4 WASTE ESTIMATES

4.1 ESTIMATE OF QUANTITIES

As there is no reference in Queanbeyan-Palerang Regional Councils Googong DCP 2010 for waste strategies for schools, a desktop assessment of waste generated from the following similarly structured schools with a variety of student numbers to provide indicative waste volumes, was conducted.

Table 6 - Weekly waste generation (Litres/week) across different schools currently operating in the wider Sydney area

School	# Students	General	Recyclable
Parramatta Public School	600	6000	2400
Pendle Hill High School	450	4500	Not Determined
Mainsbridge School	130	1980	1920
Erskine Park High School	1011	6000	1500

Erskine Park High School

In addition, an in-depth review of waste material composition was estimated based on the results of the Erskine Park High School Waste Audit 2019 conducted by APC Waste Consultants in collaboration with the Department of Education. The waste assessed through this audit was considered to be

representative of waste that will be generated at the new primary school at Edmondson Park and formed the basis for the waste generation estimates.

4.2 ESTIMATE OF QUANTITIES

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

- The occupancy rate = 5 days per week (with students present during the NSW DoE designated active term dates);
- Number of students = 800;
- Reference was made to the waste generated from schools listed in Table 6; and
- Fortnightly collection has been assumed for paper / cardboard waste;
- Weekly collection has been assumed for all other waste types;
- The final frequency of waste collection will be made once final waste contractor agreements are in place.

Table 7 - Waste Generation Estimates

Material Type	Weekly Vol.	Bin Volume	# Bins	Bin Size
Paper Cardboard	2564	3000	1	2.5
Comingled	1329	660	3	3.48
Soft Plastic	1187	660	2	2.32
Organics	142	240	1	0.43
Return & Earn	237	240	1	0.43
General	1757	3000	1	2.5
Bin Area Total				11.7

4.3 STORAGE AREA SIZE ESTIMATES

Areas for storage and collection of the applicable waste streams will be provided and marked out on a concrete waste pad. The waste pad area will be sized to accommodate all bins or containers, for all applicable waste streams, for at least one collection cycle.

Table 8 - Waste Pad Storage Area - Estimated Requirements

Minimum suggested waste pad storage size - including circulation space	~28 m²
---	--------------------------

4.4 WASTE STORAGE AREA

The nominated waste storage pad area is to be located as shown in APPENDIX A. The area must be suitably screened using materials such as walls, fencing, natural shrubs or a hedge row.

4.5 WASTE FACILITIES CONSTRUCTION / MAINTENANCE

Responsibility for cleaning of waste storage pad and service compartments will be designated to the cleaning staff. The basic requirements for waste storage pad are as follows:

- To be of adequate size;
- Integrated with building design and site landscaping;
- Suitably screened from public areas;
- Area to be level, with appropriate access for collection;
- Assurance that OH&S requirements for waste contractors are met;
- Colour coded bins to be provided throughout to collect general waste;
- Access to waste enclosure to be safe, convenient to all users and to meet WorkCover NSW Occupational Health and Safety guidelines;
- Waste enclosure to conceal bins from view from the street; and
- Bins to be covered against birds, vermin and vandals.

5 WASTE MANAGEMENT

5.1 WASTE STORAGE SYSTEMS

It is anticipated that a combination of Bulk Bins and Mobile Garbage Bins (MGBs) will be utilised within the school. The bulk bins will be used for general waste & cardboard/paper and MGBs will be used for each remaining waste streams as shown in APPENDIX B.

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 school will be provided where applicable in the waste storage area or another applicable storage area within the school. These materials will be collected by an appropriate contractor or sub-contractor as defined in the buy.NSW Contract 9698 agreement.

5.1.1 COMPOSTING

We are proposing in the waste management plan to send all of the schools food organic waste offsite, through the collection of this material from a waste contractor. The final processing of this material will be determined by the waste contractor, however it is likely that this material will be used for generating energy (biogas), compost and/or liquid fertilisers. In regards to any school composting program, implementing an on-site compost recycling program at a future date would be required. For this to happen the food / organic waste material would need to be re-directed from the organics bin, to a locally managed composting program. This would be something that the school should look to implement once a team /community is set up to do so.

5.2 WASTE MOVEMENT

It is anticipated that staff, students etc will dispose of waste directly into various streams (general, paper/cardboard, comingled recycling, soft plastics, container deposit scheme and food/organics) located in the offices, canteen, classrooms and open space playground prior to collection by the cleaners. Each waste stream will have small labelled and separate waste bins. Waste from these small bins will be then transported by cleaning contractors via the nominated egress corridors/pathways to the waste storage pad the waste material will be combined into larger bins ready for collection by the waste contractor.

5.3 WASTE COLLECTION POINT

The nominated waste storage pad area is shown in Appendix B. The appointed waste contractors will collect each waste stream from the loading bay at nominated times in accordance with the relevant waste contract. The collection area is sufficiently sized in order to accommodate waste contractor vehicles in accordance with the specifications in the *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities (EPA 2012)*. The nominated waste collection point is within the boundary of the site and not within a public place.

5.4 VEHICLE MOVEMENTS

Medium Rigid Vehicles (MRVs) will collect the bins from the waste storage pad on collection days. Swept paths and access pathways are shown in C. This will be done in such a manner as to minimise risk of damage to the roadway, footpath or services under the ground. Waste collection vehicles will not obstruct access to adjacent premises, roadways, the footpath or the primary pedestrian entrances to the school. In addition, waste collection will be carried out with due care for public safety including other road users, cyclists and pedestrians.

The waste storage area must be located such that the following vehicles can gain access:

- Medium Rigid Vehicle (MRV) (size in m = 8.8 long x 2.5 wide x 4.5 high);
- Heavy Rigid Vehicle (HRV) (size in m = 11 long x 2.5 wide x 4.25 high);

Other points to note include:

- Different waste streams are collected by separate trucks at separate times/days;
- Swept path diagrams in more detail to be provided by traffic consultant;
- Concrete slab / carpark able to support the weight of a loaded truck and bins/skips; and
- The collection truck to enter and leave school in a forward direction.

5.5 COLLECTION HOURS

The waste collection truck will schedule collection out of school hours to reduce any risk from the truck and bin movements to the school and preschool children. The collection of waste and/or any

recycling must only occur after 6 am and before 7 pm on school days to minimise noise disturbance to nearby residents. As the waste storage area is accessed via the staff carpark, ideal waste collection time will be between 7am and 7.30am.

5.6 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 should also include provisions for the collection of potentially hazardous waste including e-waste.

Waste management service contract

Schools must use Contract 9698 in buy.NSW website. This contract is mandatory and covers waste management services (bins, collection, transport, processing, treatment and disposal). Waste streams include general waste, organic, grease trap, recycling, secure destruction and clinical.

5.7 SEGREGATING WASTE

Waste will be segregated into separate streams (general, paper/cardboard, comingled recycling, soft plastics, container deposit scheme and food/organics) at the point of generation. Effective segregation is best achieved through:

- Education and training to all staff, contractors, visitors and students who generate waste, such as the waste wise schools program;
- Ensuring identifiable colour coding and labelling of bins for each waste stream is implemented and maintained;
- Ordering and provision of suitable containers at appropriate locations;
- Incorporation of quick and efficient waste disposal methods into staff areas; and
- Ensuring all waste can be easily, safely and correctly segregated at the point of generation, for instance including appropriate bins in food preparation and administrative areas.

6 ONGOING MANAGEMENT

This OWMP forms the basis of operational waste management on site for the school. It is a 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 efficiency of the system. As such, all stakeholder engaging with the OWMP will need to maintain awareness of any new relevant guidelines and regulations that come into effect during the operational phase of the development.

6.1 SIGNAGE

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 DD.

The provision of space must include source separation, including bin stations and appropriate signage of waste and receptacles for multiple waste streams. Designers must refer to AS 4123.7 Mobile waste containers - Colours, markings, and designation requirements for further guidance on bin colour, waste stream and waste type.

Table 9 - AS 4123.7 Waste Storage Requirements

Bin Colour	Waste Stream	Waste type
Lime Green	Organics	Food Organics and Garden Organics
Yellow	Recycling	Comingled Containers
Blue	Recycling	Paper and Cardboard
White	Recycling	Container Deposit Scheme
Any colour	Recycling	Soft Plastic
Red	General	General Waste

6.2 EDUCATION & TRAINING

The school will aim to build a strong culture of waste reduction and recycling through regular waste management updates at assemblies, student gatherings, Parents and Citizens (P&C) meetings, staff inductions and meetings, ideally within an effective framework such as the waste wise schools' program.

6.3 ROLES & RESPONSIBILITIES

It is expected that all personnel will commit to the OWMP and be responsible for their own actions in adhering to the waste management objectives.

Table 10 - Roles and Responsibilities

Responsibility	Activity	Monitoring
Administrative Manager	<ul style="list-style-type: none"> Ensuring staff (and students) are inducted into the OWMP and other applicable management plans. Responsible for undertaking procurement of operational materials in accordance with the waste management hierarchy. Segregation of waste streams where required to ensure appropriate use, treatment and/or disposal. 	Monitor contractors and cleaners for compliance to the OWMP.

Responsibility	Activity	Monitoring
	<ul style="list-style-type: none"> Compliance with applicable environmental legislation and project conditions. Ensure environmental management plan(s) across the site are adhered to and accurate to site conditions. Undertake inspections to ensure compliance. Maintenance of waste-related signage, colour coding and MGBs. Security of waste storage pad area during day-to-day business. Ensure no waste is placed on the public way. Promoting and enabling compliance with the OWMP by other stakeholders (cleaners, staff, students etc.) through delivery of positive waste management culture at the school. 	
Cleaners Removing Material	<ul style="list-style-type: none"> Responsible for acting in accordance with the OWMP. Transfer of waste within the school. Transfer of MGBs to the nominated waste storage pad and return of MGBs to waste school areas. Clean areas around waste storage pad. Ensure no waste is placed on the public way. 	Ensure there is no contamination in comingled bins.
Staff	<ul style="list-style-type: none"> Adherence to the OWMP. Placement of waste/recycling within correct bins. Notify manager/cleaning contractor when bins are overfull and require transport to the MGBs. Informing the Administrative Manager of any waste management incidences. Reinforcing positive waste management culture as defined by administrative manager amongst colleagues and students. 	Ensure there is no contamination in comingled bins.
Students	<ul style="list-style-type: none"> Responsible use of waste facilities and appropriate disposal of waste. Encourage BYO for the following items: water bottles, containers, straws, reusable utensil sets, washable hand towel, carry bag and coffee cups. Engaging with positive waste management culture as delivered by teachers. 	Educate students and inform about the school's waste management initiatives and that the goals and targets are clearly communicated.
Waste Contractors	<ul style="list-style-type: none"> Acknowledge and comply with waste targets. Use reasonable endeavours to assist reaching the waste targets. Provide feedback on actual volumes of waste and recycling collected to enable waste volume evaluation by Administrative Manager. 	Quantify the amount and types of waste. Monitor, report and address contamination through regular monitoring/bin inspections.

7 REVIEW PROCESS

School management will undertake regular reviews of the Operational Waste Management Plan including the following indices:

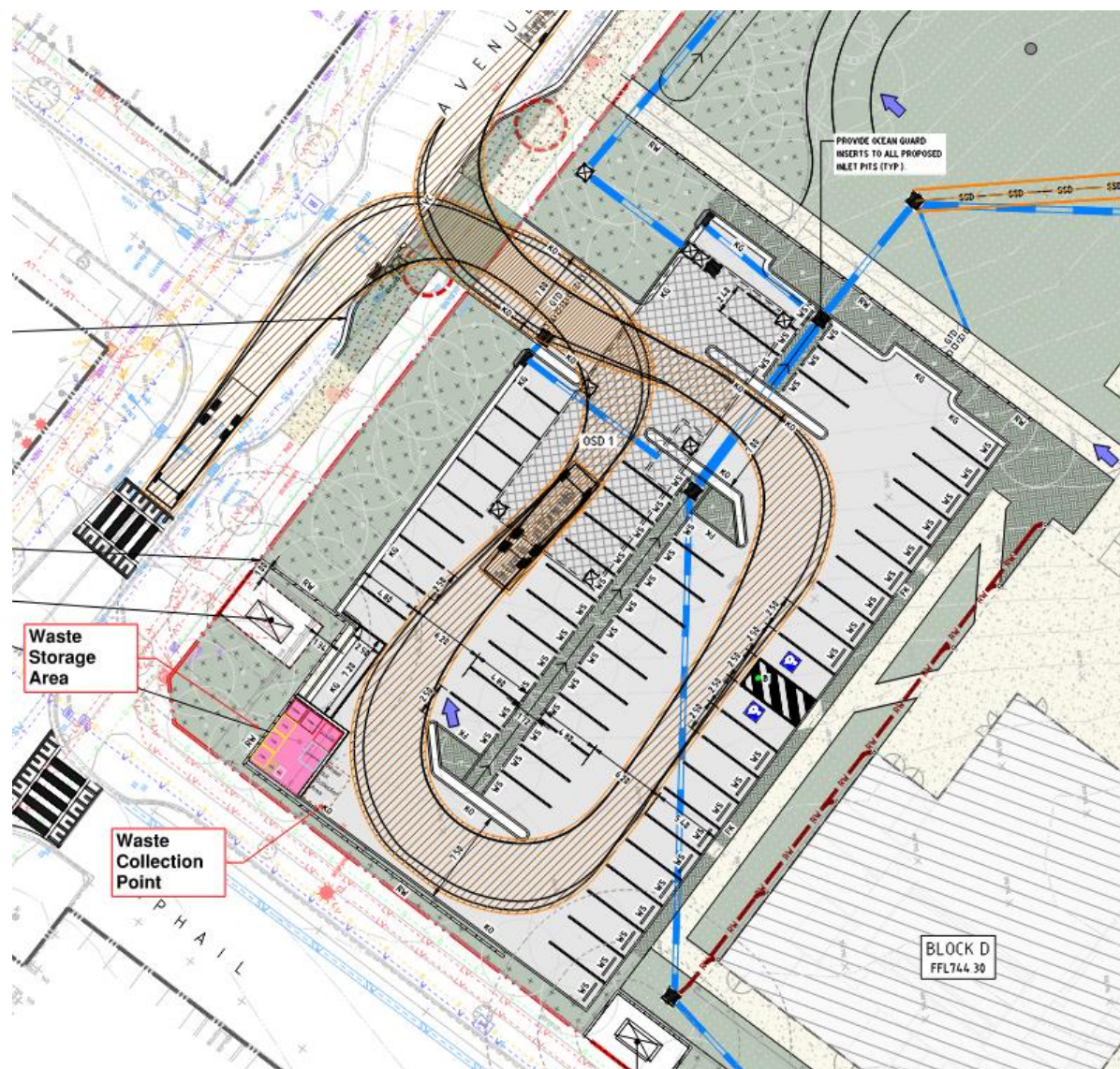
Waste Management Contract	
On Site Signage	
Waste Contractor Performance	
Data on Recycling Rates	
Waste Contractor Licences	
On Site Waste and Recycling Systems	

8 LIMITATIONS

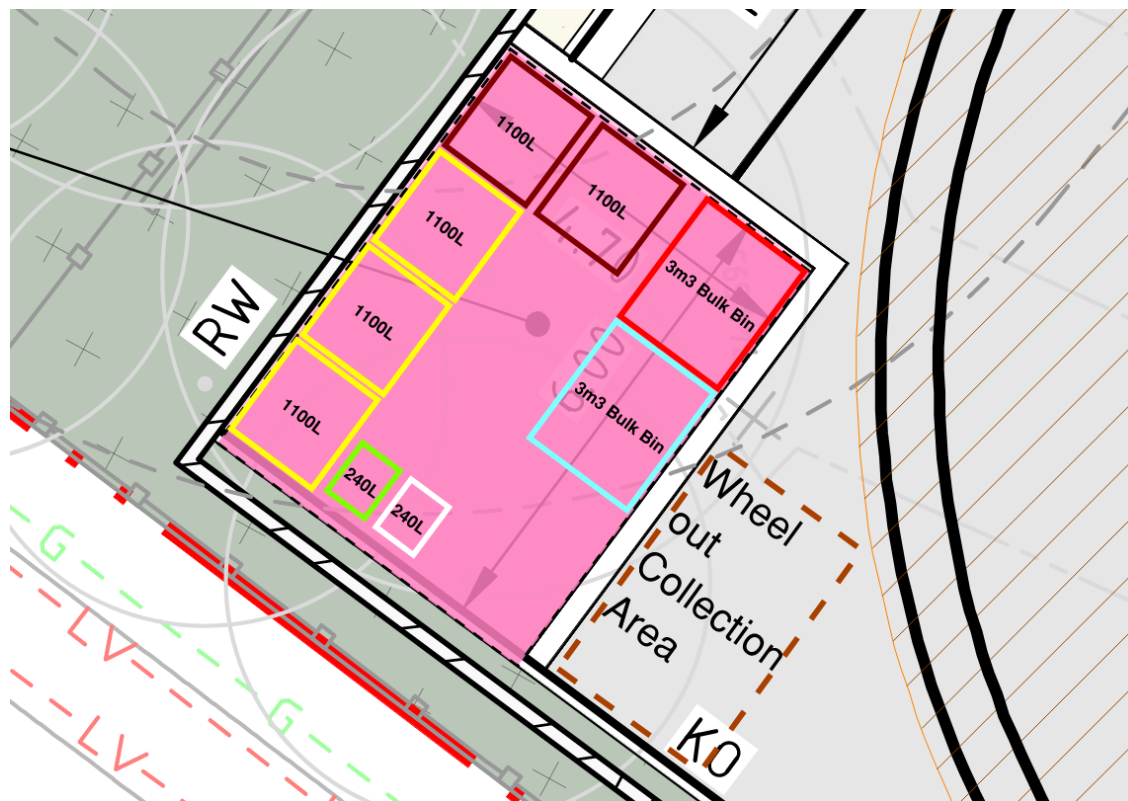
This report documents an Operational Waste Management Plan (OWMP) as part of the SSDA with the following limitations:

- Estimates and details contained in this waste management plan have been prepared by analysing the information, plans and documents supplied by the client, and third parties including Council and government information;
- The figures presented in the report are an estimate only – the actual amount of waste generated will be dependent on the occupancy rate and waste generation intensity as well as the approach to educating visitors, staff and students regarding waste management operations and responsibilities;
- The School Administrative 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;
- The report will not be used to determine or forecast operational costs or prepare any feasibility study or to document any safety or operational procedures;
- This OWMP has been prepared with reference to applicable legislation, regulations and guidelines in effect at the time of writing and no guarantee can be made that the recommendations provided will remain compliant with future mandatory requirements during the operational lifespan of the development;
- The report has been prepared with all due care, however, no assurance or representation is made that the OWMP reflects the actual outcome and EcCell will not be liable for plans or outcomes that are not suitable for the purpose of the project, whether as a result of incorrect or unsuitable information or otherwise; and
- EcCell offer no warranty or representation of accuracy or reliability of the OWMP unless specifically stated.

APPENDIX A – PROPOSED WASTE STORAGE AREA LOCATION

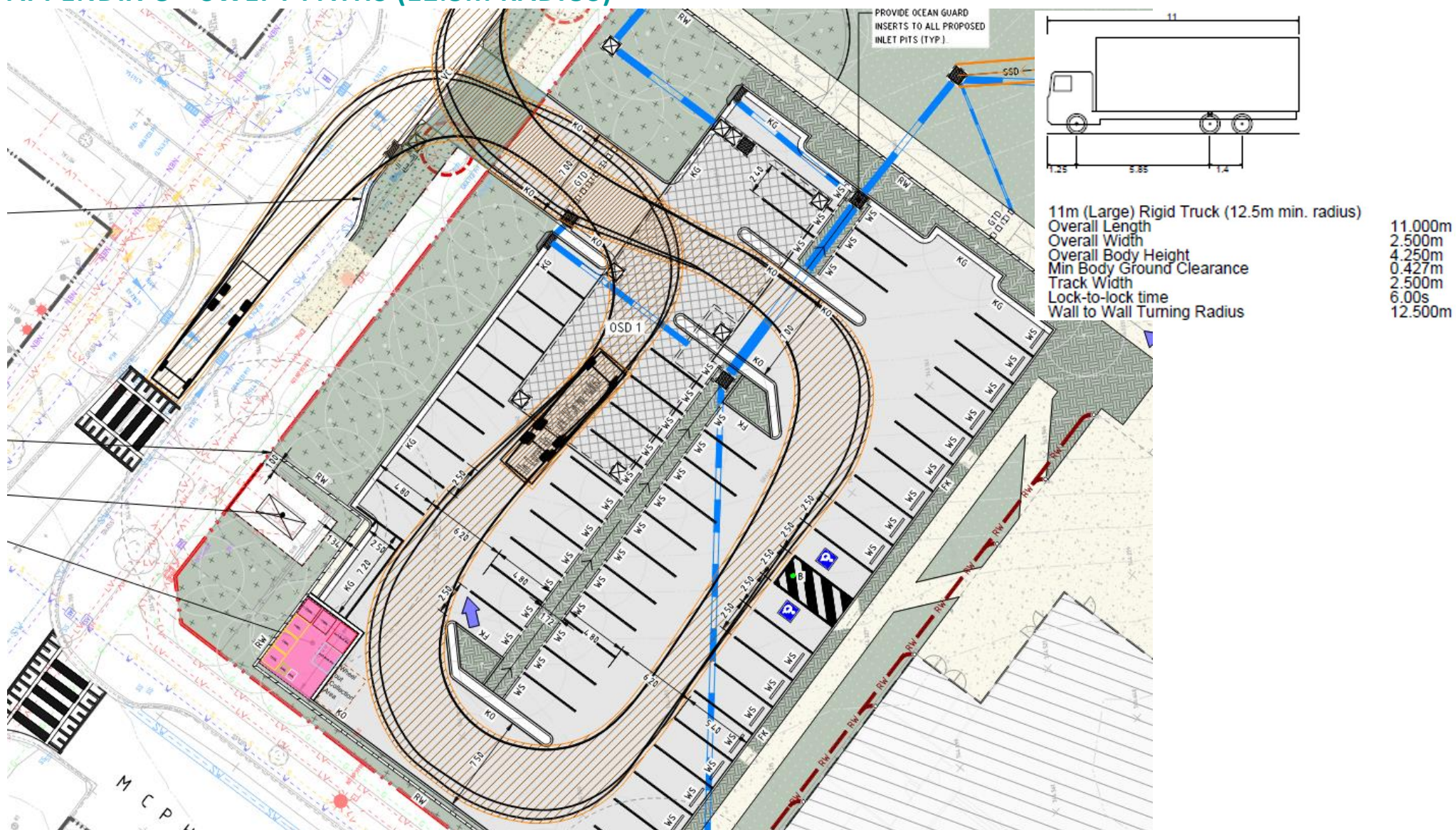


APPENDIX B – WASTE STORAGE AREA BIN LAYOUT



Bin Colour	Waste Stream	Waste type
Lime Green	Organics	Food Organics and Garden Organics
Yellow	Recycling	Comingled Containers
Blue	Recycling	Paper and Cardboard
White	Recycling	Container Deposit Scheme
Dark Green	Recycling	Soft Plastic
Red	General	General Waste

APPENDIX C – SWEEPED PATHS (12.5M RADIUS)



APPENDIX D – EXAMPLES OF APPROPRIATE WASTE SIGNAGE

