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Minarah College

Waste Management Plan

State Significant Development,
Application Number SSD-30759158

April 2022

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1. Introduction

This Waste Management Plan has been prepared by Waste Audit & Consultancy Services (Aust) Pty Ltd (Waste Audit) on behalf of Minarah College (the Applicant) to accompany an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD-30759158) for Minarah College at 268 and 278 Catherine Fields Road, Catherine Field (the site).

Minarah College will be a co-educational K-12 school accommodating 1,580 students, 840 in primary school and 660 in high school. There will also be an Early Learning Centre (ELC) for 60 students and a School for Specific Purpose (SSP) for 20 students. The new school will be constructed in stages, growing in line with growth in the local population.

The proposal seeks consent for:

- Demolition of the existing dwellings and ancillary structures on-site;
- The construction of the following:
 1. One-storey early learning centre with attached two-storey administration building to service the high school and early learning centre;
 2. Two-storey primary school building comprising of primary school classrooms, SPP classrooms, primary school hall which attached outside school hours care (OSHC);
 3. Two-storey high school building comprising high school classrooms;
 4. Two-storey high school hall;
 5. Shared one-storey canteen adjoining the high school building; and
 6. Shared library located on the second storey above administration building below.
- Site access from Catherine Fields Road at two points with a bus zone, 30 kiss and drop car parking spaces, and car parking;
- Consolidation of the allotments;
- Associated site landscaping and public domain improvements;
- An on-site car park for 138 parking spaces; and
- Construction of ancillary infrastructure and utilities as required.

The purpose of this Waste Management Plan is to provide guidance on the sustainable management of general waste and recyclable materials that will be generated during the development's construction and operational phases, and addresses current legislation, standards, guidelines and best practices, including relevant SEARs and Green Star requirements.

2. SEARS Requirements

This Waste Management Plan is required by the Secretary's Environmental Assessment Requirements (SEARs) for SSD-30759158. Table 1 identifies the SEARs and relevant references within this report.

Table 1: SEARs Requirements

Item	Description of Requirement	Report Section
17	Identify, quantify and classify the likely waste streams to be generated during construction and operation	Sections 11,12
	Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste	Sections 10, 12, 13
	Identify appropriate servicing arrangements for the site	Section 13
	If buildings are proposed to be demolished or altered, provide a hazardous materials survey	Section 10

3. Green Star Compliance

This report addresses the following requirements of Green Star Credit 8A Operational Waste:

Table 2: Green Star Compliance

Requirements	Report Section
Identify the site boundary	Section 4
Identify waste streams relevant to the project	Section 12
Specify individual roles responsible for delivering and reviewing the OWMP	Sections 9, 13
Set targets for diversion from landfill and for reducing total materials generation (general waste materials and recyclable/reusable materials)	Section 13
Outline monitoring and measurement procedures for waste and recycling by weight	Section 13
Outline methods for encouraging the separation of waste streams, such as bins, storage areas, or recycling facilities in public area as required	Section 13
Identify storage areas for all waste streams and outline best practice safety and access requirements for their collection	Section 13
Identify safe methods for vehicle access and transfer of waste	Section 13
Incorporate a review process to assess the success of the OWMP and make improvements, based on operational experience	Section 13

4. Site Boundary

An aerial photograph of the development site and surrounds is shown below:



5. Legislation, Standards & Guidelines

The following guidelines and standards have been used as references in compiling this Waste Management Plan:

- NSW *Protection of the Environment Operations Act 1997*
- NSW *Protection of the Environment Operations (Waste) Regulation 2014, Part 11*
- NSW *Protection of the Environment (General) Operations Act 1998*
- NSW *Waste Avoidance and Resource Recovery Act 2001*
- NSW EPA *Waste Classification Guidelines 2014*
- Camden Council *Waste Management Guideline 2019*

6. Reference Documents & Reports

The following diagrams, documents and reports have been consulted in compiling this report:

- Industry Specific SEARs Schools_29102021_100945
- 210825_MIC MASTERPLAN REPORT
- A 001 SITE PLAN
- STAGING PLANS COMBINED
- Geotechnique Pty Ltd *Preliminary & Detailed Site Investigation* April 2021
- Tree Survey *Preliminary Tree Assessment* July 2021

7. Staging of Works

Following demolition of existing structures and removal of selected trees and vegetation, construction and occupancy of the site will take place across the following stages:

Table 3: Staging of Works

Area	Stage 1 m ²	Stage 2 m ²	Stage 3 m ²	Stage 4 m ²	Stage 5 m ²
Total m ²	2,945	5,170	5,304	8,108	9,104
Total Students	318	652	970	1,220	1,470
Total Staff	17	45	65	82	106

Calculations of construction and operational waste volumes are based on the above areas and student and staff populations.

8. Demolition & Construction Waste: Reporting & Targets

Legislation specifies that generators of waste own the material until it crosses a weighbridge into a licensed processing or disposal facility. Waste contractors and construction contractors will be the primary transporters of waste off-site and will accordingly be required to provide monthly reports to the Project Managers on waste reused, reprocessed/recycled, and sent to landfill.

All reports will include the following information:

- Date and time material removed
- Material type
- Amount of material (in kg and/or cubic metres)
- Processing facility material taken to
- Processing facility licensing information
- Vehicle registration and waste contractor's company details

This information will also be kept on site in a waste data file (printed and/or electronic) and made available for inspection to any authorised council officer at any time during site works. At the conclusion of site works, the construction contractor will retain all waste documentation and make this documentation available for inspection.

The project's waste management objectives and targets will include:

- Meeting all waste management standards while ensuring the health and safety of all workers on the project during demolition and construction
- Maximising the quantities of materials diverted from landfill by reusing materials onsite and offsite, and recycling/reprocessing materials off-site
- The diversion from landfill of 80% of construction waste by weight, to meet the criteria of the NSW State Government's waste legislation, policy settings and regulatory regime
- Disposal of no more than 20% of residual waste materials to a licensed landfill in accordance with both regulatory and legal requirements

9. Demolition & Construction Waste: Management Practices

The following management practices will be considered and where feasible implemented over the design, procurement, demolition, and construction (including fitout) stages of the project:

Table 4: Management Practices

Practice/Procedure	Responsible
Design: Use of modular components in design Use of prefabricated components in design Design for materials to standard sizes Design for operational waste minimisation	Architect & Engineer Architect, Builder, Subcontractors Architect, Subcontractors Architect & Builder
Procurement: Select recycled and reprocessed materials Select components that are reusable after deconstruction	Architect, Engineer, Builder, Subcontractors Architect, Engineer & Builder
Pre-Demolition: Review Waste Management Plan and amend as required to address any changes in project scope Undertake hazardous materials survey and waste classification before commencing any demolition works If any suspect materials are encountered, implement Unexpected Finds Management Protocol (refer Section 10)	Project Manager, Builder Project Manager, Builder Project Manager, Builder
Demolition: Implement waste avoidance, reuse, and recycling practices as detailed in Waste Management Plan	Builder & Waste Contractor
Construction: Implement waste avoidance, reuse, and recycling practices as detailed in Waste Management Plan Minimise recurring packaging materials Return packaging to the supplier Re-use of materials on site Separation of materials on-site for recycling Monitor and audit correct usage of bins Monitor and audit waste contractor(s)	Builder & Waste Contractor Subcontractors Builder & Subcontractors Builder & Subcontractors Builder & Waste Contractor Builder & Waste Contractor Builder

10. Hazardous Materials

If unexpected finds and/or suspect materials (identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos sheets/pieces/pipes, ash material, imported fill materials etc.) are encountered during remediation works/earthworks, the following actions are to be undertaken:

If unexpected finds and/or suspect materials are encountered:

- Works are to cease;
- An Environmental Consultant is to be engaged to take appropriate action; and
- If contamination is identified, the contaminated materials must be disposed of at an EPA licensed landfill facility with an appropriate waste classification.

If bonded asbestos containing material (ACM) is encountered:

- Engage a NSW WorkCover accredited Class B asbestos contractor;
- Removal of the asbestos waste must be carried out in accordance with the requirements of the regulators, such as NSW WorkCover and NSW EPA; and
- Engage a WorkCover Licensed Asbestos Assessor to provide a clearance certificate.

If friable asbestos is encountered:

- Engage a NSW WorkCover accredited Class A Asbestos contractor;
- Removal of the asbestos waste must be carried out in accordance with the requirements of the regulators, such as NSW WorkCover and NSW EPA; and
- Engage a WorkCover Licensed Asbestos Assessor to provide a clearance certificate.

Please refer to the Geotechnique Pty Ltd *Preliminary & Detailed Site Investigation* April 2021 report for further details on hazardous materials management practices.

11. Demolition Stage

Table 5 shows estimated quantities in cubic metres of demolition waste, and management practices and processing/disposal outcomes for each material type. The Recovery Rate is the proportion of material that is likely to be actually reused or recycled either on-site, or at a licensed facility, taking into account material stream contamination and facility processing efficiencies.

Specific disposal/recycling facilities have not been shown (this also applies to the construction phase), as waste removal contractors have not yet been appointed for the project.

Table 5: Demolition Waste - Expected Materials Streams

Materials on Site				Destination/Processing/Disposal		
Type of Material	Est. m ³	Recovery Rate	Net m ³	Onsite	Offsite	Disposal
Trees & Vegetation	1,443	98%	1,414	No onsite reuse likely to be possible	Take to organic waste facility for processing into mulch for reuse in landscaping works	Dispose of residual materials to landfill
Excavation Material (Soil, Rock, Gravel, Dam Sediment)	200	96%	192	Reuse in landscaping works	Take material to facility for processing for reuse at other sites	Dispose of residual materials to landfill
Structural Metal	150	99%	149	No on-site reuse	Collected by contractor for separation into different metal types for recycling	Dispose of residual materials to landfill

Materials on Site				Destination/Processing/Disposal		
Type of Material	Est. m ³	Recovery Rate	Net m ³	Onsite	Offsite	Disposal
Bricks	120	98%	98	Crush for use in pavement and/or temporary road construction	If onsite use not possible, send acceptable quality bricks for reuse; recycle unusable bricks for use in aggregate products	Dispose of residual materials to landfill
Roof Tiles	60	99%	59	No on-site reuse or recycling	Sent for reuse if feasible and/or recycling depending on condition	Dispose of residual materials to landfill
Concrete	30	98%	29	Crush for use in pavement and/or temporary road construction	Separate onsite and take material to concrete recycling facility	Dispose of residual materials to landfill
Floor Coverings	30	95%	29	No on-site reuse	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Structural Timber	25	95%	24	Potential for onsite reuse	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Plasterboard	25	98%	25	No on-site reuse	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Plumbing, Fittings	15	100%	15	No on-site reuse	Collect for separation into different metal types for recycling	No disposal to landfill
Glazing	10	100%	10	No on-site reuse or recycling	Send for reuse if feasible or recycle depending on condition	No disposal to landfill
Wiring, Electrical Fittings	5	100%	5	No on-site reuse	Collect for separation into different metal types for recycling	No disposal to landfill
Lighting	5	100%	5	No on-site reuse or recycling	Collect in designated bin and send for recycling	No disposal to landfill
Bathroom & Kitchen Tiles	5	100%	5	No on-site reuse or recycling	Collect in designated bin and send for recycling	No disposal to landfill
Other (Inc. Potential Hazardous Materials)	10	0%	0	No on-site reuse or recycling	Specialist contractor to collect for treatment at suitably licensed facility	Disposal to licensed landfill
TOTAL MATERIALS	2,120	97.4%	2,065	The demolition phase will produce around 2,120 m³ of materials, of which 2,065 m³ or 97.4% can potentially be diverted from landfill, by being reused on site, or recycled off-site at a dedicated facility.		

12. Construction Stage

Table 6 shows estimated quantities in cubic metres of construction waste, and management practices and processing/disposal outcomes for each material type, including materials generated from deliveries, such as pallets, pallet wrap, cardboard packaging, and general waste and recyclables disposed of by contractor staff.

Table 6: Construction Waste - Expected Materials Streams

Materials on Site				Destination/Processing/Disposal		
Type of Material	Est. m ³	Recovery Rate	Net m ³	Onsite	Offsite	Disposal
Excavation for Foundations	500	98%	490	Reuse in landscaping works	Take material to facility for processing for reuse at other sites	Dispose of residual materials to landfill
Pallet Wrapping (Soft Plastic)	43	96%	41	Reuse on site where possible	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Used Pallets	42	90%	38	Reuse on site for storage where possible	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Cardboard Recycling	33	100%	33	No reuse/recycling	Collect in designated bin and send for recycling	No disposal to landfill
Metal Offcuts, Sheeting, Wiring, etc.	29	98%	29	Collect for separation into different metal types for recycling	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
General Waste	28	0%	0	No reuse/recycling	Collect in separate designated bin	Disposal to landfill
Plasterboard Offcuts	26	90%	24	No reuse/recycling	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Floor Coverings	25	90%	23	No reuse/recycling	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Plastics Recycling	21	95%	20	No reuse/recycling	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Timber Offcuts	19	95%	18	Potential for onsite reuse	Collect in designated bin and send for recycling	Dispose of residual materials to landfill
Concrete (Excess)	17	100%	17	No reuse/recycling	Collect in designated bin and send for recycling	No disposal to landfill
Glass (Excess)	14	100%	14	No reuse/recycling	Collect in designated bin and send for recycling	No disposal to landfill
TOTAL MATERIALS	797	93.5%	746	The construction phase will produce around 797 m³ of materials, of which 746 m³ or 93.5% can potentially be diverted from landfill, by being reused on site, or recycled off-site at a dedicated facility.		

13. Operational Stage

13.1 Materials Streams & Bin Storage

Table 7 shows the waste generation rates used for calculating ongoing operational waste volumes. The Camden Council *Waste Management Guideline* has been used for reference.

Table 7: Waste Generation Rates in Litres/Day per 100 m²

Area	General Waste	Paper/ Cardboard	Commingled Recycling	Food Waste Recycling
Teaching Areas	25.0	10.0	5.0	0.0
Office/Administration	25.0	10.0	5.0	0.0
Library	25.0	10.0	5.0	0.0
Wellbeing	25.0	10.0	5.0	0.0
Canteen	75.0	10.0	10.0	5.0

Tables 9-14 show expected volumes of operational general waste and recycling, bin quantities, suggested collection frequencies, and specialised waste streams for each development stage, based on the data in Section 7, and the following standard bin footprints:

Table 8: Waste Generation Rates in Litres/Day per 100 m²

Bin Size	Dimensions (mm)	Footprint	Footprint + 20%
120 litre	940 h x 560 d x 485 w	0.27	0.33
240 litre	1080 h x 735 d x 580 w	0.43	0.51
660 litre	1250 h x 850 d x 1370 w	1.16	1.40
1100 litre	1470 h x 1245 d x 1370 w	1.71	2.05

For calculating storage space requirements, 20% has been added to each bin footprint for access purposes, and a further 20% has been added to the total footprint to allow for vacant space in the middle of the storage room for bin movement in and out of the room.

Stages 1-4 are temporary storage; the permanent storage room will be constructed in Stage 5. If actual volumes produced exceed these estimates, there will be sufficient space within the storage area for additional bins; alternatively, collection frequencies can be increased.

Table 9: Waste Generation - Stage 1

Area	General Waste	Paper/ Cardboard	Commingled Recycling	Food Waste Recycling
Teaching, Office, Library, Wellbeing, Amenities	722.50	289.00	144.50	0.00
Canteen	41.25	5.50	5.50	2.75
Daily Totals	763.75	294.50	150.00	2.75
Weekly Volume	3,818.75	1,472.50	750.00	13.75
Bin Size (Litres)	1100	1100	660	120
Number of Bins	2	1	1	1
Collections/Week	3	2	1	1
Bin Footprints	4.09	2.05	1.40	0.33
Specialised Waste Streams (Secure Documents, E-Waste, Cooking Oil)				4.00
20% Allowance for Bin Access & Movement				3.56
TOTAL STORAGE AREA REQUIRED - STAGE 1				15.42

Table 10: Waste Generation - Stage 2

Area	General Waste	Paper/ Cardboard	Commingled Recycling	Food Waste Recycling
Teaching, Office, Library, Wellbeing, Amenities	1,278.75	511.50	255.75	0.00
Canteen	85.82	11.44	11.44	5.72
Daily Totals	1,364.57	522.94	267.19	5.72
Weekly Volume	6,822.87	2,614.72	1,335.97	28.61
Bin Size	1100	1100	660	120
Number of Bins	3	1	1	1
Collections/Week	3	3	2	2
Bin Footprints	9,900	3,300	1,320	240
Specialised Waste Streams (Secure Documents, E-Waste, Cooking Oil)				4.00
20% Allowance for Bin Access & Movement				4.17
TOTAL STORAGE AREA REQUIRED - STAGE 2				18.08

Table 11: Waste Generation - Stage 3

Area	General Waste	Paper/ Cardboard	Commingled Recycling	Food Waste Recycling
Teaching, Office, Library, Wellbeing, Amenities	1,806.75	722.70	361.35	0.00
Canteen	7.26	0.97	0.97	0.48
Daily Totals	1,814.01	723.67	362.32	0.48
Weekly Volume	9,070.07	3,618.34	1,811.59	2.42
Bin Size	1100	1100	660	120
Number of Bins	3	1	2	2
Collections/Week	3	3	2	2
Bin Footprints	9,900	3,300	2,640	480
Specialised Waste Streams (Secure Documents, E-Waste, Cooking Oil)				4.00
20% Allowance for Bin Access & Movement				4.69
TOTAL STORAGE AREA REQUIRED - STAGE 3				20.32

Table 12: Waste Generation - Stage 4

Area	General Waste	Paper/ Cardboard	Commingled Recycling	Food Waste Recycling
Teaching, Office, Library, Wellbeing, Amenities	2,519.75	1,007.90	503.95	0.00
Canteen	530.52	70.74	70.74	35.37
Daily Totals	3,050.27	1,078.64	574.69	35.37
Weekly Volume	15,251.33	5,393.18	2,873.43	176.84
Bin Size	1100	1100	660	120
Number of Bins	3	2	2	2
Collections/Week	5	3	2	2
Bin Footprints	16,500	6,600	2,640	480
Specialised Waste Streams (Secure Documents, E-Waste, Cooking Oil)				4.00
20% Allowance for Bin Access & Movement				5.30
TOTAL STORAGE AREA REQUIRED - STAGE 4				22.98

Table 13: Waste Generation - Stage 5

Area	General Waste	Paper/ Cardboard	Commingled Recycling	Food Waste Recycling
Teaching, Office, Library, Wellbeing, Amenities	3,206.50	1,282.60	641.30	0.00
Canteen	642.16	85.62	85.62	42.81
Daily Totals	3,848.66	1,368.22	726.92	42.81
Weekly Volume	19,243.31	6,841.11	3,634.61	214.05
Bin Size	1100	1100	660	120
Number of Bins	4	2	2	2
Collections/Week	5	3	3	2
Bin Footprints	22,000	6,600	3,960	480
Specialised Waste Streams (Secure Documents, E-Waste, Cooking Oil)				4.00
20% Allowance for Bin Access & Movement				5.92
Bulky Waste Storage				6.00
Bin Wash Facility				2.50
TOTAL STORAGE AREA REQUIRED - STAGE 5				34.15

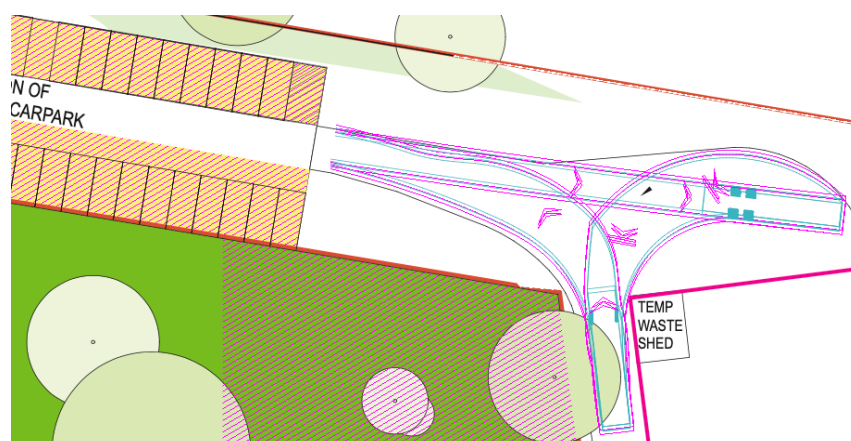
13.2 Storage Area Location & Access

Temporary bin storage sheds (project Stages 1-4) will be located in the areas shown below:

Stage 1:



Stages 2-4:



For stages 5 and 6, a permanent 42 m² bin room will be constructed as shown below:

Stages 5-6:



The proposed areas will be sufficient for the projected numbers of bins required for each project stage, and their locations will provide easy access for waste contractor vehicles and their staff, who will be responsible for loading bin contents into collection vehicles. The waste contractor will ensure that no litter is created during the emptying process and will clean up any spills that occur. Cleaners will bring general waste and recyclables to the storage area every night. The storage area as currently designed is adequately sized to accommodate bins for all waste and recycling generated on the site between collections.

All waste and recycling containers will be clearly differentiated through appropriate signage and colour coding to reflect the materials contained, with each different stream located in a designated area to assist in easy identification by cleaners and other users.

13.3 Waste Management & Recycling Systems

The school can potentially achieve a high degree of resource recovery by implementing the programs shown in Table 15, which lists acceptable and unacceptable materials for each stream.

Table 15: Waste Management & Recycling Systems

Material Stream	Accepted	Not Accepted
Paper & Cardboard Recycling	<ul style="list-style-type: none">• Office paper including white and coloured paper• Newspapers• Magazines• Cardboard (non-waxed)	<ul style="list-style-type: none">• Tissues, paper towels & napkins• Paper contaminated with food or liquid• Copy paper wrappers• Waxed cardboard• All other non-paper items
Commingled Recycling	<ul style="list-style-type: none">• Glass bottles and jars• Plastic bottles and containers• Aluminium cans and clean foil• Steel cans	<ul style="list-style-type: none">• Soft plastics, plastic bags• Containers with food remnants• Containers with liquid inside• Disposable cups
Food Waste Recycling	<ul style="list-style-type: none">• Food scraps• Coffee grounds, tea bags• Flowers, plant cuttings• Paper towel (some systems)	<ul style="list-style-type: none">• Non-food items
General Waste	<ul style="list-style-type: none">• Non-recyclable paper (tissues, paper towels, etc.)• Soft plastics, plastic bags• Containers with food remnants• Containers with liquid inside• Disposable cups• Waxed cardboard	<ul style="list-style-type: none">• Recyclable items

13.4 Monitoring, Measurement, & Review

The school will implement systems for monitoring, measurement, and reporting of operational waste management performance. Reports from the school's waste contractor will be required to provide weights of materials streams and numbers of bins collected.

Annual performance and contract reviews will be conducted with facilities management, waste contractor, and cleaning manager, to assess progress towards annual waste diversion targets and other KPIs, identify operational issues, and address any shortcomings. Waste audits will also be conducted annually to benchmark performance.

The school's Facilities Management team will have responsibility for reviewing the Waste Management Plan annually, ensuring that its objectives are met, and making adjustments where required to ensure continued accuracy and relevance to operational conditions.

13.5 Materials Recovery Targets

We recommend setting an initial materials recovery target of 50% (proportion of overall waste diverted from landfill disposal through waste avoidance, reuse, and/or recycling) in the first year of full school operations.

This target should be reviewed by the school after the first year of full operations, and annually thereafter, and adjusted accordingly based on actual measured performance.

14. Internal Bins

We recommended providing the school's administrative areas with 3-stream bin hubs for:

- Paper & Cardboard Recycling
- Commingled Recycling
- General Waste

Bins should be situated in areas which effectively service a group of workstations and offices, with no bins under desks; this improves cleaning staff efficiencies by reducing the number of bins that require collection, and also reduces the number of bin liners required.

Consideration should also be given to installing recycling bins in some classrooms to provide students with the opportunity to participate in the school's sustainability initiatives.

Examples of bins that are commonly used in office or educational settings are shown below. Differently coloured bin liners (general waste-black; paper-clear; commingled-blue) are recommended to assist cleaning staff to distinguish the different streams and enable them to identify contamination, prior to final disposal in the bins in the central storage area.



For areas with bins kept within housings or pull-out drawers in kitchens and central areas, care must be taken to ensure these systems are well designed and provided with clear signage to foster proper separation. An example of best practice drawer design is shown below which provides for two or three streams (paper recycling, commingled recycling, and general waste).



15. Stakeholder Education

For the proposed waste management systems to be successful an intensive education program will be implemented for staff and students. This should include requirements for cleaning contractors to undertake regular monitoring and provide feedback to the school on waste management performance, using, for example, visual observations of recycling stream contamination, monitoring the condition of bins and equipment, etc.

Sustainable Schools NSW provides a number of free resources for educators on its website: <https://www.sustainableschoolsnsw.org.au>.

16. Waste Contractor Requirements

The School's waste contractor will be required to undertake a site induction process to ensure their operational practices are conducted safely and efficiently, and comply with the following ongoing requirements:

- Reliable and efficient servicing, and meeting agreed schedules
- Ensuring that waste collection is carried out safely without spills or litter resulting
- Working with the school to achieve continuous improvements in materials recovery rates
- Providing monthly reports on diversion and financial outcomes
- Providing education programs if requested
- Maintaining current details of processing facilities used
- Collection vehicles fitted with weighing technology
- Maintaining evidence of compliance with relevant Green Star reporting criteria

This report has been prepared by:

Peter Hosking



Director
Waste Audit & Consultancy Services (Aust) Pty Ltd
April 12, 2022

Appendix 1: Camden Council Waste Management Standards

The relevant sections of the Camden Council *Waste Management Guideline* 2019 pertaining to the management of demolition, construction, and operational waste are reproduced below. The development would be considered a commercial (i.e. non-residential development) for the purpose of compliance with these guidelines.

2. Demolition Waste Management

Applicability

Any Development Application proposing demolition works must provide relevant plans and a Waste Management Plan (WMP) to meet the Demolition Waste Management Submission Requirements.

Objectives

The following Objectives should be incorporated when writing the demolition section of a WMP:

- Pursue opportunities to reuse or recycle the building materials on-site or elsewhere; and
- Demolish structures in stages to facilitate increased separation of waste and increase reuse opportunities.

Submission Requirements

1. A Waste Management Plan (WMP) must be submitted with any Development Application proposing demolition works. The WMP must include the following information:
 - a. Estimated volumes of waste materials generated (in cubic metres). See the rates in APPENDIX 1 for a guide;
 - b. Whether hazardous waste or special waste (including asbestos) will be generated during the demolition phase;
 - c. How each waste type will be recycled on and/or off site, or sent to landfill; and
 - d. If waste is to be reused or recycled on-site it must be specified how the material will be reused or recycled, for each waste type.
2. A site plan or similar which indicates:
 - a. Location of sorting area/s where waste will be sorted for disposal or recycling;
 - b. Location of storage area/s where waste and soil stockpiles will be stored onsite; and

Note: This is to include colour coding of waste containers or the provision of detailed signage.

- c. Collection area which is clear of any obstructions.

Note: Generation, storage, treatment and disposal of hazardous waste and special waste (including asbestos) must be undertaken in accordance with relevant legislation administered by the Appropriate Regulatory Authority (ARA); and the Work Health and Safety Act 2011 administered by Safe Work NSW.

Note: Stockpiles of excavated material should be constructed and managed in accordance with the Department of Environment & Climate Change NSW: Managing Urban Stormwater; Soils and Construction 2008 ("The Blue Book").

3. Construction Waste Management

Applicability

Any Development Application proposing construction works must provide relevant plans and a Waste Management Plan (WMP) to meet the Construction Waste Management Submission Requirements.

Objectives

The following Objectives should be incorporated when writing the construction section of a WMP:

- Incorporate the use of prefabricated components and recycled materials where appropriate;
- Arrange for the delivery of materials so that materials are delivered 'as needed' to prevent degradation of materials through weathering and moisture damage causing additional waste; and
- Return excess materials to supplier or manufacturer as appropriate.

Submission Requirements

1. A Waste Management Plan (WMP) must be submitted with any Development Application proposing construction works. The WMP must include the following information:
 - a. Estimated volumes of waste materials generated (in cubic metres). See the rates in APPENDIX 1 for a guide;
 - b. Reuse/recycling opportunities to manage excess construction materials generated during the construction phase; and
 - c. Steps taken to reduce waste brought to site.
2. Provide a site plan or similar which identifies:
 - a. Location of sorting area/s onsite where waste will be sorted for disposal or recycling;
 - d. Location of storage area/s where waste and soil stockpiles will be stored onsite; and

Note: This is to include colour coding of waste containers or the provision of detailed signage.

- b. Collection area which is clear of any obstructions.

Note: Where an application includes the construction of temporary roads, temporary turning heads, half roads, laneways and/or roads, a swept path analysis prepared by a suitably qualified professional must be provided in accordance with AS2890.2. The swept path analysis must demonstrate a HRV safely accessing the site and the manoeuvring of vehicles for the provision of waste collection services.

Note: Stockpiles of excavated material should be constructed and managed in accordance with the Department of Environment & Climate Change NSW: Managing Urban Stormwater; Soils and Construction 2008 ("The Blue Book").

4.7 Commercial Developments

Applicability

Any development applications proposing to construct a development classified as a commercial premise shall prepare relevant plans and a Waste Management Plan (WMP) to meet the following General and Submission Requirements regarding design and on-going waste management.

General Requirements

1. Temporary garbage and recycling storage area/s must be provided within each tenancy. These are to be of sufficient size to store a minimum of one day's worth of waste (this may vary depending upon size of development);
2. Between collection periods, all waste/recyclable materials generated on site must be kept in enclosed bins with securely fitting lids so the contents are not able to leak or overflow. Bins must be stored in the designated waste/recycling storage room/s or area/s;
3. The number of bins to be provided must be calculated based on waste generation rates in APPENDIX 1.
4. Bin storage area/s and facilities for food premises must comply with AS4674. Premises which generate at least 50 litres per day of meat, seafood or poultry waste must have that waste collected on a daily basis or must store that waste in a dedicated and refrigerated waste storage area until collection;
5. Every development must include designated communal bin storage area/s, to accommodate waste from all tenancies prior to collection. Storage area/s must:
 - a. Provide convenient area/s for separation of waste;
 - b. Provide convenient access to each commercial area/tenancy of the development;
 - c. Provide for storage of all bins required, refer to Councils Waste Management Guideline for waste generation rates and bin requirements;
 - d. Have a floor area at least 50% larger than the size of the bins and/or equipment;
 - e. Have a smooth graded ground surface;
 - f. Be well lit, built in accordance with the Building Code of Australia and well ventilated in accordance with AS 1668.4 (AS 1668.2 for buildings requiring mechanical ventilation);
 - g. Allow for each bin to be readily accessed and manoeuvred in and out of the area, providing a minimum 1.6m wide unobstructed walkway and a minimum 1.8m wide door/doorway (doors must be able to be locked open);
 - h. Be suitably enclosed, covered and maintained so as prevent polluted wastewater runoff and unpleasant odour;
 - i. Provide an external water tap adjacent to the storage area;
 - j. Provide a drain in the bin storage area discharging to a sewer connection (where relevant);
 - k. Be sealed sufficiently to prevent vermin;
 - l. Provide signage instructing users on bin type/s and appropriate material/s; and
 - m. Be adaptable to changes in waste generation rates and type of waste produced.

6. Waste compactors should be considered for large commercial developments.

Note: Refer to Section 4.8 Industrial Developments, General Requirement 4.

7. Onsite collection must generally be provided for commercial developments. Sites must allow for a Heavy Rigid Vehicle throughout the vehicle's entire onsite path of travel as per AS2890.2. Onsite waste collection area must:
 - a. Be designed in a way which collection vehicles do not impede access to, within or from the site for other users; and
 - b. Be designed in a way which collection vehicles can enter and exit the site in a forward direction. Reversing of a truck onsite must only be done in the vicinity of a turning bay. Trucks will not use private driveways or carparks as a turning area.
8. In exceptional circumstances where suitable arrangements for onsite collection are not possible waste/recycling bins should be collected from a kerbside, rear laneway or service passage, with the aim of preventing collection from shop frontages;
9. Arrangements must be in place regarding the regular maintenance and cleaning of waste management facilities. Tenants and cleaners must be aware of their obligations in regards to these matters; and
10. All commercial developments which produce niche waste i.e. food waste, polystyrene, etc are to consider recycling opportunities in their WMP.

Submission Requirements

1. Architectural plans showing:
 - a. Temporary bin storage area/s within each tenancy (where relevant). Each bin should be illustrated on the submitted plan. Typical bin dimensions are provided in APPENDIX 2;
 - b. Communal bin storage area/s. Each bin should be illustrated on the submitted plan. Typical bin dimensions are provided in APPENDIX 2;
 - c. Bin collection area/s. Each bin should be illustrated on the submitted plan. Typical bin dimensions are provided in APPENDIX 2; and
 - d. Path of travel for moving waste bins between storage area and collection area as applicable.
2. Swept path analysis prepared by a suitably qualified professional in accordance with AS2890.2 must be provided. Specifications for waste collection vehicles are provided in APPENDIX 4. The swept path analysis will illustrate that a heavy rigid vehicle and Council's waste collection vehicle can;
 - a. Enter the site in a forward direction;
 - b. Perform collections in a safe manner; and
 - c. Exit the site in a forward direction.

Note: If waste collection is conducted by Council and occurs from private roads an Indemnity Agreement must be entered into with Council prior to the issuing of the Occupation Certificate (OC).

3. An Ongoing Waste Management Plan (WMP) must be submitted with the Development Application and must include the following information:
- a. An estimation of waste generation for garbage, recycling, and any other relevant waste type. Waste generation rates to be used for calculations and example calculations are provided in APPENDIX 1. Estimates should be provided as a volume of waste per week (in litres);
 - b. Number of each type of bin (garbage, recycling and any other relevant type) required by the development;
 - c. Number of waste collection/s for each type of waste per week;
 - d. Whether collection will be conducted by Council or private contractor.

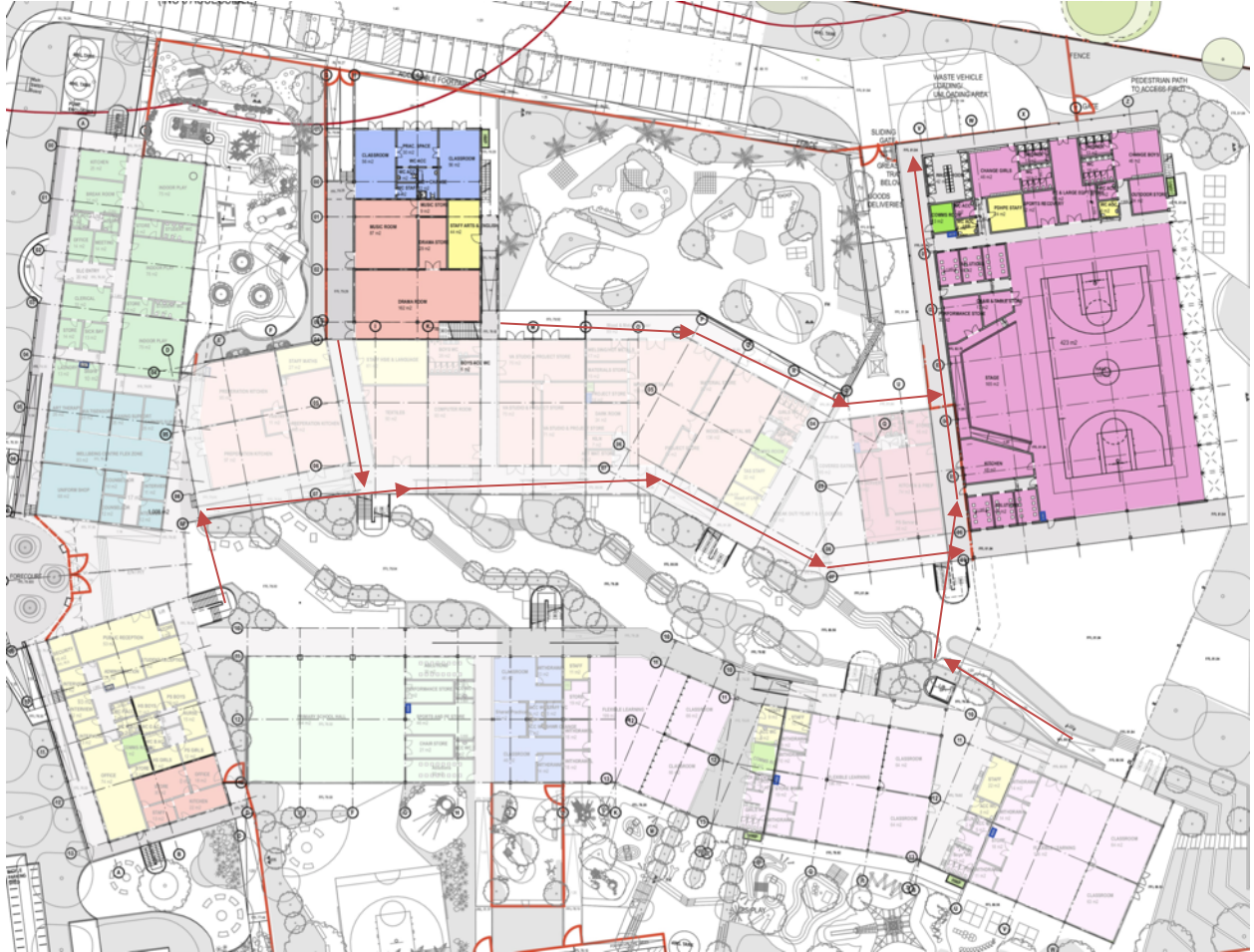
Note: Council will determine whether it can provide a waste collection service to the development.

- e. Details of waste storage areas including dimensions, floor area (m²) and location;
- f. Details of any waste management equipment included in the development. Descriptions of some available waste management equipment options are provided in APPENDIX 3;
- g. Details of dedicated waste collection point including dimensions, floor area (m²) and location;
- h. Proposed arrangements for management and collection of waste including contact details of relevant stakeholders;
- i. Proposed arrangements for the management, maintenance and cleaning of all waste/recycling management areas;
- j. Proposed management of litter within the property boundaries (the area of public footpath or public area adjacent to the premises is to be maintained in a clean and tidy condition);
- k. Proposed method to educate tenants/owners about waste and recycling.



Appendix 2: Waste Movement Paths

The drawing below shows movement pathways for general waste and recycling from various areas of the development to the permanent waste storage room:



Appendix 3: Signage Examples - Internal & Loading Dock

The examples below are for illustration purposes only.

