Dalmeny Public School – Waste Management Plan

A Submission to Department of Education

3rd March 2025

MRA Consulting Group

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A Submission to Department of Education

Prepared by

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Disclaimer

In the spirit of reconciliation MRA Consulting Group acknowledges the Traditional Custodians of Country throughout Australia and their connection to land, sea and community. We pay our respects to Aboriginal and Torres Strait Islander peoples and to Elders past, present and emerging.

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Glossary

Terminology	Definition
AS	Australian Standard
C&D	Construction and Demolition
C&I	Commercial and Industrial
DA	Development Application
DCP	Development Control Plan
ENM	Excavated Natural Material
EPA	Environment Protection Authority
ILU	Independent Living Unit
LGA	Local Government Area
MGB	Mobile Garbage Bin
MRA	MRA Consulting Group
MSW	Municipal Solid Waste
LLEP	Liverpool Local Environmental Plan 2008
LDCP	Liverpool Development Control Plan 2008
VENM	Virgin Excavated Natural Material
WMP	Waste Management Plan
WSP	Waste Service Provider
WSRA	Waste Storage and Recycling Area

1 Introduction

This Waste Management Plan (WMP) has been prepared to accompany a Review of Environmental Factors (REF) prepared for the Department of Education (DoE) relating to the Dalmeny Public School Upgrade (the activity) under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and *State Environmental Planning Policy (Transport and Infrastructure) 2021* (SEPP TI).

This document has been prepared in accordance with the *Guidelines for Division 5.1 assessments – Consideration of environmental health facilities and schools, Addendum October 2024* (the Guidelines) by the Department of Planning, Housing and Infrastructure.

This report examines and takes into account the relevant environmental factors in the Guidelines and *Environmental Planning and Assessment Regulations 2021* under Section 170, Section 171 and Section 171A of the EP&A Regulation**.**

The proposed activity for the Dalmeny Public School Upgrade includes the construction and occupation of a two-storey classroom building and associated covered walkways and landscaping.

The classroom building will consist of the following floor layout:

- **Ground Floor Level:** Comprises eight (8) general learning spaces (GLS) and two (2) learning commons spaces (LCS). Also located on the ground floor level are amenities, services, storage spaces and a lift and two stair cases to provide access to the first-floor level; and
- **First Floor Level:** The first-floor level will also comprise eight (8) GLS and two (2) LCS. Also located on the first-floor level are amenities, a mechanical plant room and other rooms for services.

Consideration has been given to the following supplementary documents in the preparation of the WMP:

- NSW EPA (2019) *Better Practice Guide for Resource Recovery in Residential Developments.*
- Educational Facilities and Standards Guidelines (EFSG).

A Waste and Recycling Management Plan has been prepared in accordance with (LDCP), and states the following objectives for waste management:

1. Manage waste in accordance with the waste hierarchy to:
    a) avoid producing waste in the first place
    b) minimise the amount of waste produced
    c) re-use items as many times as possible to minimise waste
    d) recycle once re-use options have been exhausted
    e) dispose of what is left, as a last resort, in a responsible way to appropriate waste disposal facilities.
2. Ensure waste management and mitigation at demolition, construction and operation stages are designed to provide satisfactory amenity for occupants.
3. Ensure occupants are active and empowered participants in creating solutions and waste mitigation and minimisation.
4. Ensure that development incorporates waste management systems that are efficient and capable of handling the forecasted waste generation.

This WMP is used to inform the building design to deliver best practice waste management and promote sustainable outcomes at the demolition, construction and operational phases of the development. The WMP addresses waste generation and storage associated with demolition and construction works through redevelopment.

1.1 Evaluation of Environmental Impacts

This WMP provides advice and guidance on how the site can mitigate environmental impacts that may arise in relation to waste management procedures. Based on the identification of potential impacts and an assessment of

the nature and extent of the impacts of the proposed activity, it is determined the activity does not have a significant effect on the environment from a waste management standpoint.

2 Background

2.1 Description of the Proposed Activity

The project site is located at 129 Dalmeny Drive, Prestons and is legally described as Lot 312 DP 882619.

Dalmeny Public School is located on the southern side of Dalmeny Drive and on the northern side of Umbria Street. The surrounding context of the site is predominantly low density residential.

The proposed activity for the Dalmeny Public School Upgrade includes the construction and occupation of a two-storey classroom building and associated covered walkways and landscaping.

Demolition

- Demolish part of existing fence on Dalmeny Drive;
- Remove two (2) trees; and
- Earthworks.

Construction and occupation

- Two-storey classroom building (Block H);
- Covered walkways (excluding between Block G and H),
- Footpath between block G and block H
- Landscaping (surrounding Block H),
- Fence and gate south of Block H;
- OSD tank;
- New Main Switch Board;
- Substation; and
- Fire Hydrant.

The classroom building will consist of the following floor layout:

- Ground Floor Level: Comprises eight (8) general learning spaces (GLS) and two (2) learning commons spaces (LCS). Also located on the ground floor level are amenities, services, storage spaces and a lift and two stair cases to provide access to the first-floor level; and
- First Floor Level: The first-floor level will also comprise eight (8) GLS and two (2) LCS. Also located on the first-floor level are amenities, a mechanical plant room and other rooms for services.

Figure 1: Site and surrounding area

Source: Six Maps, 2024.

This report examines and takes into account the relevant environmental factors in the Guidelines and Section 170, Section 171 and Section 171A of the *Environmental Planning and Assessment Regulations 2021* (EP&A Regulation) as outlined in Table 1.

Table 1: Part 5 Guidelines and EP&A Regulation Summary

Summary of relevant section of Part 5 Guidelines and EP&A Regulation			
Regulation / Guideline Section	**Requirement**	**Response**	**Report Section where addressed**
(a) The environmental impact on the community.	(a1) Impact during construction – such as noise, vibration, traffic, construction vehicle routes, access and parking, pollution/dust, water and stormwater flow, sediment and run-off, waste removal, servicing arrangements, bushfire, flooding, contamination, other construction occurring in the area.	Construction and demolition phases of the activity are to be managed according to this WMP. Construction and demolition waste management plan provided.	3.2.
(a) The environmental impact on the community	(a2) impact post-construction (including from any development,	Minimal impact is expected from the activity to existing waste	Section 4.1.

Summary of relevant section of Part 5 Guidelines and EP&A Regulation			
	activity, public-address systems and sirens, signage, events, hours of operation, or out of hours use of facilities, helicopter facilities, emergency facilities) which may include: (vi) waste and servicing arrangements	management arrangements. Operational waste management statement provided.	
(h) long term effects on the environment.	(h2) meet industry recognised building sustainability and environmental performance standards, integrate environmental design, minimise greenhouse gas emissions, minimise energy and water consumption (recycled water) and material resources, renewable energy generation and storage, fossil fuel-free, sustainable travel choices, manage, reuse, recycle and safely dispose of waste	Waste arrangements at the site are currently managed in a safe manner that adequately recycles and disposes of appropriate waste streams generated by the existing school. Management systems, operational overviews and recommendations have been provided for site management to maintain current adequate waste management practices.	Sections 4.1, 5 and 7.
(l) pollution to the environment	(l1) any pollution during construction and post construction e.g. air (including odours and greenhouse gases); water (including runoff patterns, flooding/tidal regimes, water quality health); soil (including contamination, erosion, instability risks); noise and vibration (including consideration of sensitive receptors); light pollution; waste, including hazardous waste.	Pollution mitigation measures have been provided through signage, source separation bins, bin locations in high waste generating areas and site management systems in this WMP.	Section 5.
(m) environmental problems associated with waste.	m1) environmental problems of waste during and after construction (left over construction materials, and personnel waste), transport and disposal of waste,	Management of construction and demolition waste will be in accordance with the NSW EPA's *Better Practice Guidelines for Waste Management in New*	0.

Summary of relevant section of Part 5 Guidelines and EP&A Regulation			
	ongoing use and eventual decommission of the development. (m2) cumulative impacts from waste.	*Developments* (2019) and The *Construction and Demolition Waste Management Toolkit* (2020).	

2.2 Zoning and Use

The site is zoned as R2 – Low Density Residential according to the LLEP 2008. The objectives of this zone are:

- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To provide a suitable low scale residential character commensurate with a low dwelling density.
- To ensure that a high level of residential amenity is achieved and maintained.

Figure 2: Land use zone map

Source: eSpatial Viewer, 2024.

2.3 Strategies

Waste management for the site considers better practice, necessary equipment, and integration with other guidance documents including the NSW Waste and Sustainable Materials Strategy (NSW EPA, 2021), and National Waste Policy: Less Waste, More Resources (DAWE, 2018). The key policy aims that are considered are:

- Avoidance (to prevent the generation of waste);

- Reduce the amount of waste (including hazardous waste) for disposal;
- Manage waste as a resource; and
- Ensure that waste treatment, disposal, recovery and re-use are undertaken in a safe, scientific and environmentally sound manner.

Management of waste generated onsite according to directives of the NSW Strategy will assist in achieving the target of 80% diversion from landfill in the C&D sector.

2.4 Assumptions

This report is a WMP, forming part of the activity documentation and assumes:

- Drawings and information that have been used in waste management planning for this WMP are the final design set for the activity plan from the project architect, Fulton Trotter, 24/02/2025;
- Waste and recycling volumes are based on information provided from the LDCP 2008; and
- This WMP is a living document and therefore, waste management equipment and systems described in this report are subject to change based on future operations and available technology.

3 Construction and Demolition

Demolition and construction activities at the site will generate a range of construction and demolition (C&D) waste. Throughout the development process, all materials will be reused and recycled where possible, minimising the disposal (landfilling) of materials other than those that are contaminated or unsuitable for reuse or recycling processes.

Waste storage during construction operations will involve some stockpiling of reusable material, as well as placement of wheeled bins for the separation of construction materials for recycling. A bin for residual waste or contaminated material will also be made available at the site for disposal where necessary. Bins may require alternative placement across construction operations to facilitate the safe and efficient storage of materials and will be retained within property boundaries to avoid illegal dumping.

A waste storage area shall be designated by the demolition or construction contractor and shall be sufficient to store the various waste streams expected during operations. Waste storage areas will be kept clear to maintain access and shall also be kept tidy to encourage separation of waste materials and for WHS reasons. The waste storage area will retain multiple bins to allow for source separation of waste to allow for ease of recovery and reuse of materials.

Waste management principles, management measures and facilities in use on the site shall be included as part of the site induction for all personnel working on the site.

3.1 Demolition Waste

The proposed development will require demolition of existing structures prior to commencement of excavation and construction operations. Demolition works will include the removal of part of an existing fence on Dalmeny Drive and two (2) trees as well as associated earthworks.

Error! Reference source not found. outlines the expected demolition waste quantities to be generated at the site, in addition to the appropriate management methods for each material type. Other materials with limited reuse potential either on or offsite will be removed in bulk bins for recycling at an appropriately licenced and capable recycling facility.

Table 2: Demolition waste generation estimates

Type of Material	Estimated volumes (m^3)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Disposal	Estimated % Landfill	Estimated % of landfill diversion	Methods for re-use, recycling or disposal
Concrete	N/A	✓	✓	✓	-	<5%	>95%	Onsite: Separated wherever possible and reused or crushed for filling, levelling or road base. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Excavation	200 - 300	✓	✓	✓	-	<5%	>95%	Onsite: Reuse for fill and levelling. Offsite: Removed from site for reuse as recycled fill material or soil. Disposal: Removal of any contaminated material for appropriate treatment or disposal.
Glass	N/A	✓	✓	✓	-	<10%	>90%	On site: to be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Bricks/pavers	N/A	✓	✓	✓	-	<5%	>95%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. The development will be able to reuse a number of existing building bricks as paving in landscaped areas. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Tiles	N/A	✓	✓	✓	-	<5%	>95%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Removed to C&D facility for crushing and recycling for recovered products.

Type of Material	Estimated volumes (m^3)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Disposal	Estimated % Landfill	Estimated % of landfill diversion	Methods for re-use, recycling or disposal
Timber (Clean)	<5	✓	✓	✓	-	0	100	Onsite: To be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Timber (Clean)	<5	✓	✓	✓	-	50	50	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Plasterboard	N/A	-	✓	✓	-	<10%	>90%	Onsite: To be separated wherever possible to enhance resource recovery. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Metals (ferrous & non-ferrous)	<5	-	✓	✓	-	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Removed to C&D facility for recovery and recycling.
Floor covering	N/A	-	✓	✓		50%	50%	Should be removed in bulk and sent to carpet recycler or C&D facility for recovery where possible.
Residual waste	10 - 20	-	-	-	✓	100%	-	Resource recovery dependant on facility destination capability.
Hazardous Waste	Unknown	-	-	-		100%	-	Existing buildings may contain potentially hazardous materials. Should contaminated or potentially hazardous materials be discovered they would be handled according to the demolition and/or materials management plan
Total % Diversion from Landfill Estimated							**>80%**	

3.2 Construction Waste

The proposed activity includes the construction of the following features:

- Two-storey classroom building (Block H);
- Covered walkways (excluding between Block G and H),
- Footpath between block G and block H
- Landscaping (surrounding Block H),
- Fence and gate south of Block H;
- OSD tank;
- New Main Switch Board;
- Substation; and
- Fire Hydrant.

Table 3 outlines indicative volume to weight conversion factors for common construction materials.

Table 3: Indicative volume to weight conversion factors for common construction materials

Building waste material	Tonnes per m^3	Waste as % of the total material ordered
Soil/aggregate	1.4 – 1.6	–
Bricks	1.2	5–10%
Concrete	1.5	3–5%
Tiles/ceramics	0.5 – 1	2–5%
Timber	0.3	5–7%
Plasterboard	0.2	5–20%
Metals	0.15 – 0.9	–

Source: Green Building Code of Australia C&D Waste Criteria.

Table 4 outlines the estimated waste generation rates for materials through construction of the proposed development, in addition to the appropriate management methods for each material type.

The information below presents multiple options for materials reuse, recycling and disposal where applicable (e.g. return to manufacturer, recycled at construction and demolition (C&D) processor, or disposed to landfill if contaminated).

Table 4: Construction waste generation estimations

Type of Material	Estimated Volumes (m^3)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Landfill	% of landfill diversion	Methods for re-use, recycling or disposal
Concrete	15 – 20	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for filling, levelling or road base. Offsite: Removed to C&D facility for crushing and recycling for recovered products.
Timber (clean)	<5	-	✓	✓	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier for reuse removed to C&D facility for recovery where possible.
Plasterboard	<5	-	✓	✓	<10%	90%	Onsite: Separated wherever possible to improve resource recovery. Offsite: Returned to supplier or removed to a C&D/plasterboard recovery facility for recovery where possible.
Glass	<5	✓	✓	✓	<10%	>90%	Onsite: Separated wherever possible and reused or crushed for landscaping and driveways. Offsite: Returned to supplier for reuse or removed to C&D facility for crushing and recycling for recovered products.
Metals (ferrous)	5 – 10	-	✓	✓	<10%	>90%	Onsite: Separated wherever possible to improve resource recovery.

Type of Material	Estimated Volumes (m^3)	Re-use on-site	Recycle (Separate collection)	Recycle (Off-site)	Landfill	% of landfill diversion	Methods for re-use, recycling or disposal
Metals (non-ferrous)							Offsite: Returned to supplier for reuse or removed to C&D facility for recovery and recycling.
Floor covering	<5	✓	✓	✓	<10%	>90%	On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Fixtures and fittings	<5	✓	✓	✓			On site: to be separated wherever possible to enhance resource recovery. Reuse: surplus and offcut material returned to manufacturer for reuse where possible. C&D processor: recovery and recycling.
Residual waste	5 - 10	-	✓	✓	100%	-	Resource recovery dependant on facility destination capability.
Total % Diversion from Landfill Estimated						**>90%**	

3.3 Waste Contractors and Facilities

To ensure best practice waste management, appropriate contractors and facilities have been proposed based on their location and service offerings (Table 5).

Table 5: Waste service contractors and facilities

Role	Details
Recommended Waste Collection Contractor	The following are local skip bin operators for consideration in the management of excavation and construction waste for the site: • Ninja Skip Bins; • Ace Skips & Waste; • Bins-Go-Go Skip Bin Hire. Or another supplier as elected by the building contractor.
Principal Off-Site Recycler	The following are local C&D processing facilities for consideration in the management of C&D waste generated at the site: • Benedict Recycling Chipping Norton; • Gow Street Recycling Centre; • Benedict Recycling Smeaton Grange. Or another appropriate facility as elected by the waste management contractor.
Principal Licensed Landfill Site	• Kelso Waste Facility. Or other appropriate facility as elected by the waste management contractor.

3.4 Site Documentation

This WMP will be retained on-site during the construction phases of the development, along with other waste management documentation (e.g. contracts with waste service providers).

Responsibility for the WMP, waste documentation and processes during the excavation and construction phases will be with the site manager or builder.

A logbook that records waste management and collection will be maintained on site, with entries including:

- Time and date of collections;
- Description of waste and quantity;
- Waste/processing facility that will receive the waste; and
- Vehicle registration and company name.

Waste management documentation, the logbook and associated dockets and receipts must be made available for inspection by an authorised Council Officer at any time during site works.

4 Operational Waste Management

4.1 Overview

The activity does not seek to increase the number of students or staff currently approved under existing educational establishment consent. Therefore, the proposed activity will not have an impact on existing waste generation outputs and current arrangements will remain.

Temporary waste storage and disposal

To facilitate waste disposal and separation, clearly labelled bins are stationed across the site, and their contents collected daily by cleaners. Cleaners will deposit the collected waste into respective bins in the consolidated waste storage area (see Appendix A). Maintenance and grounds staff will use the primary waste bins directly.

Collection schedule

Waste generated from the school will continue to be collected on existing schedules at two times per week for general waste streams and once per week for paper and cardboard streams. Building Management will continue to transfer waste from the new building to the existing waste storage area. Bins will continue to be presented within the waste storage area for onsite collection via Dalmeny Drive. Further information regarding council requirements for onsite collection is detailed in Section 5.2.

4.1.1 Waste Streams

Table 6 details the estimated existing volumes of general waste and recycling at the school by applying the NSW EPA's waste generations rates to the current population of the site. The following waste streams are currently managed by the school.

Table 6: Estimated Existing Weekly Waste Generation Volumes

Number of Students	Waste Stream	Generation rate	Weekly Volumes (L)
799	General waste	15 L/student/week	**11,985**
	Recycling	20 L/student/week	**15,980**

General Waste

Most of the general waste is produced by students during recess and lunch periods. General waste bins are placed in the playground, passive activity, and canteen areas. General waste bins are also placed in various other locations such as on pathways, the library, and office spaces. Some general waste is produced by the students during classroom activities other than the waste from the consumable food and beverage products. In each classroom, there are small bins for the collection of general waste. This waste is collected by the cleaner daily and deposited in the general waste bins stored within the existing waste storage area for collection.

Paper and Cardboard

All classrooms and offices have small cardboard and paper bins for the students to utilise and they are emptied daily into the recycling bin for collection.

Garden Waste

Garden waste is distributed over the school garden wherever possible. Excessive amounts are disposed at the local tip if required.

Bulky Waste

Bulky waste items are not generated in large quantities at the site. All bulky waste generated at the site, including broken/damaged furniture, and other materials are stored in a dedicated enclosure. Bulky waste is proposed to be monitored by site management and collected as needed via a licenced commercial waste contractor.

E-waste & Other Problem Wastes (e.g. Batteries, Printer & Toner Cartridges)

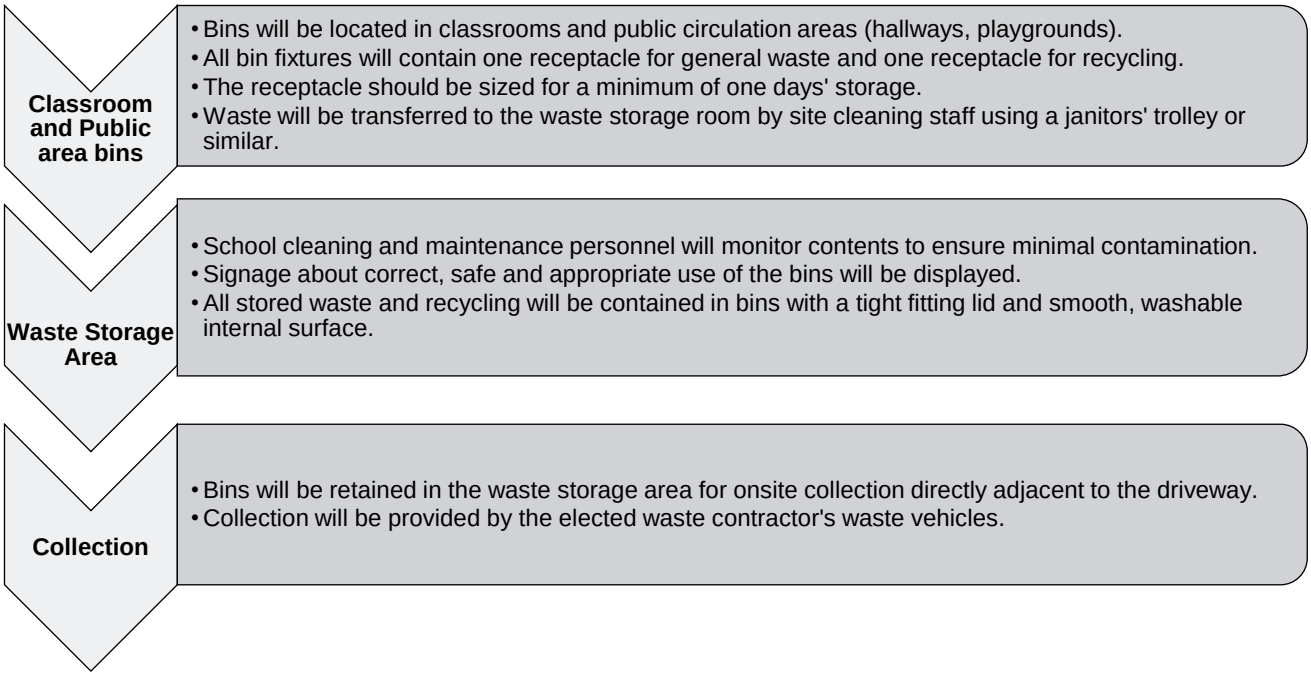
E-waste is kept separated on site until ready for disposal. Batteries are disposed of separately from the general waste.

5 Waste Management Systems

5.1 Waste Disposal and Recycling Method

The flow of waste goes from generation to collection through several steps (Figure 3).

Figure 3: Waste Flow



5.2 Collection Method and Loading Areas

The main waste management and collection area for the school is via a vehicle access gates off Dalmeny Drive. These areas will continue to be utilised as the main consolidation point for waste management across the sites and will continue to operate as the waste collection point.

Collection points for the waste service provider and areas for handling and loading are as follows:

- Waste storage area and collection area are open to the sky and will not be impacted by any overhead obstructions for the purpose of waste collection (see Appendix A).
- Collection and loading from the waste storage area must provide convenient access for the collection of waste.
- Waste collections will be scheduled to occur outside of peak periods, typically between 7 am and 8 am or midday, to avoid times of high pedestrian and vehicle traffic associated with student drop-off or pick-up.
- Clear, safe, accessible, and convenient space is provided for handling of bins and loading of collection vehicles; and
- Identifiable areas where visitors and workers can recognise and avoid any risk associated with moving vehicles, and bin moving and handling.

Bins will be collected from the bin storage areas directly by the waste service provider collection vehicle (see Appendix A) safely entering the site in a forward direction via Dalmeny Drive towards the waste storage area.

Bulk bins require collection by a rear lift collection vehicle (Table 7). The school will continue to engage a commercial contractor and agree on a suitable waste servicing solution for the site, considering waste storage requirements and accessibility.

Table 7: Collection vehicle dimensions – Rear lift vehicles

Length	Width	Travel Height	Height in Operation	Turning Circle
10.24m	2.5m	3.5m	4.5m	18m

Table 8 below outlines relevant requirements and specifications related to the use of collection points and loading areas.

Table 8: Collection points and loading areas requirements and specification

Component	Requirement	Specification
Collection point	Allow safe waste collection and loading operations	- Adequate clearance and manoeuvring space; - Sufficient clearance for the safe handling of materials and equipment; and - Sectioned loading bay does not impede upon traffic and pedestrian safety.
Vehicle manoeuvring and loading space	Truck space for adequate lift clearance, manoeuvring and operation for a contractor collection vehicle	- Collection from each site use loading area by a rear lift collection vehicle; - Adequate loading bay dimensions to not impede lift clearance; - Operational clearance for truck manoeuvring in a forward direction; and - The provision of space clear of vehicle parking spaces (level and free of obstructions).
Operating times	Appropriate collection times to limit noise and traffic disturbance	- Collection times will be arranged during off-peak times to ensure minimal disturbance to pedestrians and visitors.

5.3 Waste Management System and Responsibilities

The site manager will be responsible for the management of waste at the site. Should there be any issues that impact on the operational efficiency, safety and suitability of waste management, management will be responsible for making any necessary changes, responsibilities include:

- Using this WMP to inform waste management operations, design and infrastructure;
- Providing educational materials and information on sorting methods for recycled waste, awareness of waste management procedures for waste minimisation and resource recovery;
- Maintaining a valid and current contract with a licensed waste service provider for waste and recycling collection and disposal;
- Making information available to residents and visitors about waste management procedures;
- Organising, maintaining and cleaning bins as part of a regular maintenance schedule;
- Manoeuvring bins to specified onsite collection point prior to and following scheduled collection of waste bins;
- Organising bulky waste collections as required;
- Ensuring bin allocation and waste/recycling collection frequency is adequate. Requesting additional infrastructure or services where necessary; and
- Monitoring any vermin and pest issues and arranging appropriate controls (traps or fumigating) and maintenance of doors or other points of potential entry.

5.4 Waste and Recycling Storage Areas

The waste areas will provide centralised storage that has adequate capacity to receive and store the maximum likely generation of waste and recycling between collection times. The new building will use the existing waste storage areas that are open spaces with suitable access for disposal and collection purposes, and storage space to accommodate the bins required to service the site. Although the waste storage area is existing, site management can review the following considerations for reference to best waste management practice:

- Signage for safety and waste bin identification;
- Safety precautions, staff training and signage for plant;
- Floor made of concrete or other approved solid, impervious material that can be cleaned easily;
- Grading and draining to an approved drainage fitting located in the room to facilitate bin washing;
- Adequate supply of water with hose cock as close as practicable; and
- Suitable construction including limited entry to prevent vermin and vandalism.

5.5 Signage

Signage that promotes resource recovery, waste minimisation, safety and amenity follows the Australian Standard for safety signs for the occupational environment (Standards Australia, 1994).

Signage will be designed to consider language and non-English speaking backgrounds, vision impairment and accessibility. Illustrative graphics must form a minimum 50% of the area of the signage. Signage is to be prominently posted in the waste storage area indicating:

- Details regarding acceptable recyclables;
- Recyclables are to be decanted loose (not bagged);
- *No standing* and *danger* warnings apply to the area surrounding the waste storage area;
- Contact details for arranging the disposal of bulky items; and
- The area is to be kept tidy.

Standard signage requirements and guidance for application apply (see Appendix A).

5.6 Prevention of Pollution and Litter Reduction

To minimise dispersion of litter and prevent pollution (to water and land via contamination of runoff, dust and hazardous materials), building management and the site cleaning staff will also be responsible for:

- Maintenance of open and common site areas;
- Ensuring waste areas are well maintained and kept clean;
- Securing the waste storage area from vandalism and the escape of litter;
- Identification and appropriate disposal of goods with hazardous material content (paints, e-waste, fluorescent tubes);
- Taking action to prevent dumping and unauthorised use of waste areas; and
- Requiring contractors to clean up any spillage that may occur during waste servicing or other work.

6 Mitigation Measures

This WMP has considered the proposal's environmental impacts and has recommended the following mitigation measures as they relate to the waste management of the proposed development.

Table 9: Waste Mitigation Measures

Project Stage: Design (D) Construction (C) Operation (O)	Mitigation Measures
Council requirements (D)	The waste management strategies proposed in this WMP are based on LDCP 2008 and LLEP 2008 requirements.
Construction waste management (C)	Expected waste generated from C&D activities has been calculated. Specific recovery strategies for each type of C&D waste associated with the construction of the proposed activity are provided.
Waste collections (D)	Waste will be collected in off peak hours to minimise disturbance to the site. Waste collected will be suitably separated into each bin before collection to maximise recycling rates. Waste will be collected in a safe and efficient manner via a rear lift vehicle from the designated collection point.
Food waste (D)	Enough space for future food waste collections at the site is available within existing waste storage spaces.
Waste Storage (D)	Waste receptacles will be placed in areas expected to produce the most waste. Bins will be separated as per waste streams and clearly labelled.

7 Recommendations

7.1 Additional Waste Management Strategy Overview

The NSW Department of Education has released an Education Facilities Standards and Guidelines (EFSG) which provide assistance to those planning, managing, designing, constructing, and maintaining new and refurbished school facilities. The EFSG provides a best-practice standard for waste management and guides the preparation and implementation of this Waste Management Plan.

The EFSG provides a minimum for waste streams for onsite source separation.

Waste streams to be serviced include:

- General Waste (red lid);
- Commingled Containers (yellow lid);
- Food and Garden Organics (FOGO) (lime green lid);
- Paper and Cardboard (blue lid);
- Container Deposit Scheme (CDS) materials (white lid); and
- Soft Plastics (any colour lid not listed above).

It is noted that the EFSG is a best-practice guideline and should be implemented throughout the site for the best practice of waste management. Dalmeny Public School can initially opt for a two-bin system (being general waste and commingled recycling) and over time introduce greater separation of waste streams (paper and cardboard, FOGO, soft plastics, and CDS-eligible containers).

7.2 Food Waste

Food waste will be generated around kitchen and canteen areas, as well as by students and staff. Food waste can be managed with a separate food bin and collection service provided by the contracted waste service provider.

Alternatively, compost bins can be retained in garden areas filled with suitable food scraps and soft garden debris and applied to vegetable gardens when mature. Food waste, when not separated from the general (residual) waste stream, represents between 30-40% of waste produced, most of which can be diverted from landfill, therefore reducing disposal costs.

Compost produced onsite presents a free alternative to expensive fertilisers and assist in the retention of water and nutrients in the soil. It is also an excellent opportunity for student education Table 10 below outlines a list of compostable materials that may be generated through regular operations at the school.

Table 10: Compostable and Non-Compostable materials list

Compostable	Not Compostable
✓ **Vegetable and food scraps**	× **Meat and dairy products**
✓ **Fallen leaves (in layers)**	× **Diseased plant material**
✓ **Tea leaves and tea bags**	× **Metals, plastic, glass**
✓ **Coffee grounds**	× **Animal manures (especially the droppings of cats and dogs)**
✓ **Vacuum cleaner dust**	× **Fat**
✓ **Soft stems**	× **Magazines**
✓ **Dead flowers**	× **Large branches**
✓ **Old potting mix**	× **Weeds that have seeds or underground stems**
✓ **Used vegetable cooking oil**	
✓ **Egg shells**	

Compostable	Not Compostable
✓ **Old newspapers (wet)** ✓ **Grass cuttings in layers** ✓ **Weeds** ✓ **Sawdust (from non-treated timber)** ✓ **Wood ash** ✓ **Human and animal hair**	× **Bread or cake (may attract mice)** × **Bones** × **Sawdust from treated timber**

7.3 Sustainable ordering of food and materials

A significant amount of waste is produced through unsustainable ordering of food and other school related supplies. It may be possible to reduce the waste generation footprint of the school or prevent large increases to waste generation, through the sustainable procurement of food at the canteen, use of recyclable and recycled material products, and reduction in the use of physical mediums of teaching (test papers, worksheets, etc).

7.4 Bulky Waste Storage

Some bulky wastes will be generated because of typical school activities. Sufficient space will be provided for the temporary storage of these wastes prior to scheduled collection. Bulky waste is proposed to be managed similarly to current operations and be disposed of via skip bin or collected by the commercial waste contractor at the end of each term during school break, or whenever the quantity of such waste is generated in a sufficient quantity. Management and access of the bulky storage area will be the responsibility of school management and cleaning personnel.

7.5 Problem Waste Management

Dalmeny Public School is encouraged to engage with problem waste management contractors where possible to recover wastes such as E-waste, printer cartridges, batteries, furniture, etc. These systems should be reviewed and increased as necessary with any student population increases resulting from the proposed expansion.

The following management practices could be incorporated for a range of different problem waste materials:

- **Batteries and Printer Cartridges** – A company called “Close the Loop” (among others) provides bins and collection for batteries and printer cartridges. Bins are collected on an as needed basis, at the request of the user, when the provided bins become full. Bins for this purpose can be retained in the main photocopy room, administrative office or computer labs;
- **E-Waste** – A waste or specialist E-waste management contractor may be engaged to provide bins for the collection on E-waste generated at WGS. E-waste bins can be serviced on a regular basis or as needed when bins become full, by the engaged contractor; and
- **Light Globes and Fluorescent Tubes** – Light globes and fluorescent tubes are typically managed by the electrical contractor, with old and damaged units being taken away upon their replacement.

7.6 CDS containers and soft plastics

It is difficult to predict the generation of soft plastics and CDS-eligible containers, but a bin may be provided for each stream to be managed on an as needs basis. Site management will be responsible for transfer of CDS materials to a Return and Earn depot, and soft plastics to a RecycleSmart collection point.

Dalmeny Public School may like to install a Reverse Vending Machine (RVM) to allow students to directly deposit eligible containers. The school can decide whether students directly receive the refund vouchers or can choose to have the refund amount donated to the school for fund raising or an elected charity.

7.7 Waste Avoidance

Employing purchasing strategies to avoid the generation of waste: purchasing products with recyclable, compostable, minimal, or no packaging.

8 References

Australian Department of Sustainability, Environment Water, Population and Communities (2011) Construction and Demolition Waste Guide - Recycling and Re-use Across the Supply Chain.

Australian Standards 4123.7 Mobile Waste Containers.

Liverpool Development Control Plan 2008

Liverpool Local Environmental Plan 2008

NSW EPA (2012) Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities.

NSW EPA (2020) Construction and Demolition Waste Management Toolkit.

NSW EPA (2021) NSW Waste and Sustainable Materials Strategy 2041.

NSW EPA (2014) Waste Classification Guidelines.

NSW EPA (2016) Recycling Signs, Posters and Symbols. Available at: http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm.

NSW EPA (2019) Better Practice Guide for Resource Recovery in Residential Developments.

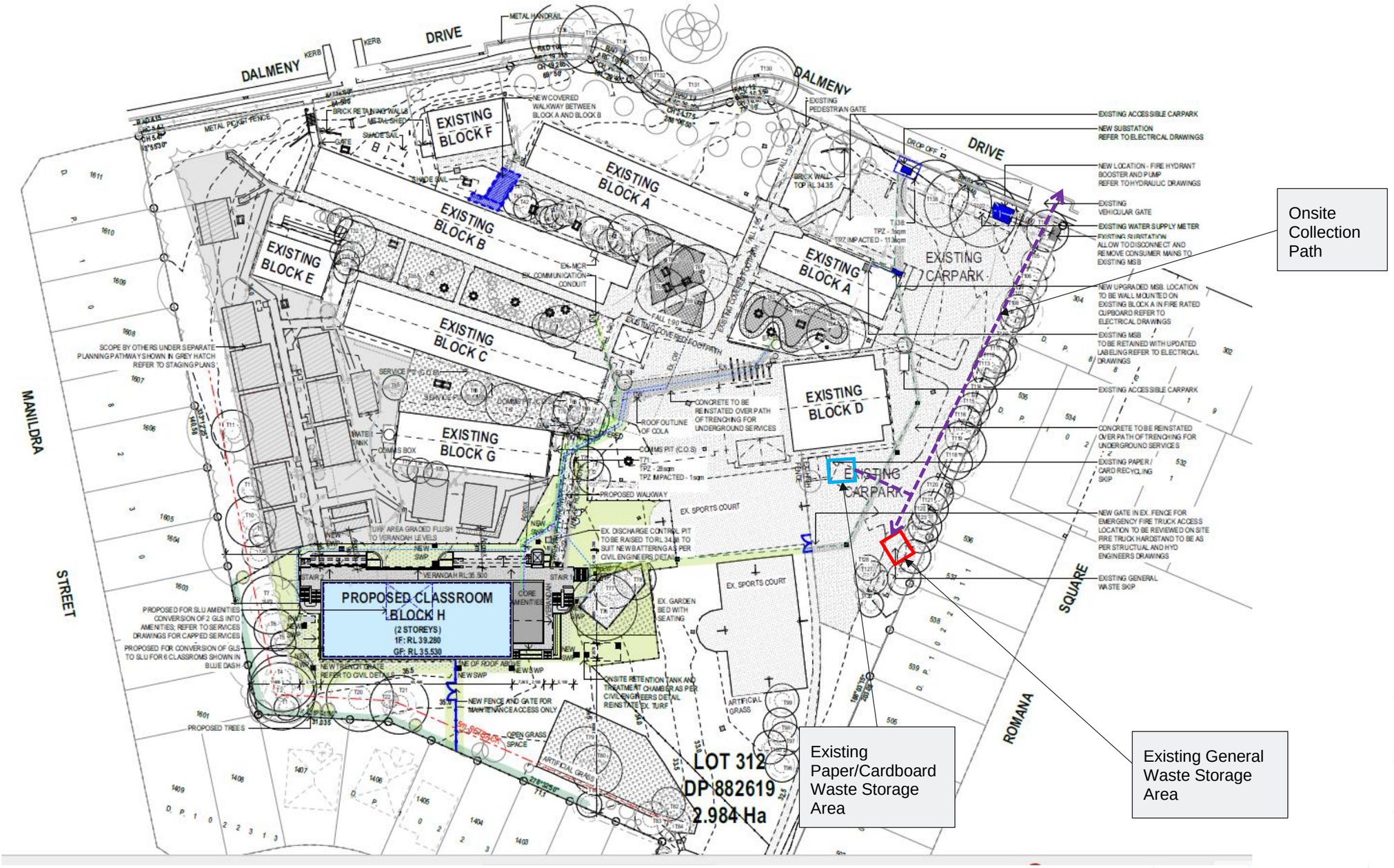
NSW Government (1979) Environmental Planning and Assessment Act.

NSW Government (1997) Protection of the Environment Operations Act.

NSW Government (2000) Environmental Planning and Assessment Regulation.

NSW Government (2001) The Waste Avoidance and Resource Recovery Act

Appendix A Proposed Site Plans



Source: Fulton Trotter, 2025

Appendix B Standard Signage

Waste Signage

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

Standard symbols for use in signage, bin facade and educational materials are promoted through the NSW Environment Protection Authority. They are available for download from the NSW EPA website (NSW EPA 2016b), in black and white and colour versions. The Australian Standard series AS 4123 (Part 7) details colours for mobile waste containers (Standards Australia 2008).

Figure 4: Examples of standard signage for bin uses

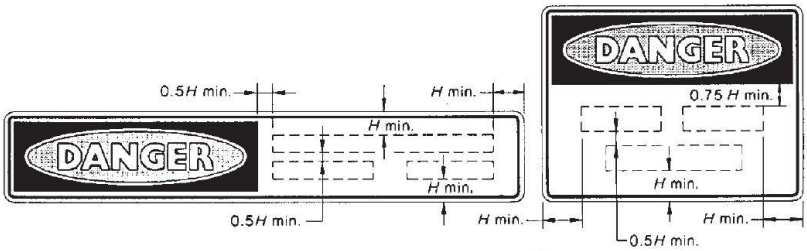
Safety Signs

The design and use of safety signs for waste and recycling rooms and enclosures should comply with AS 1319 (Standards Australia 1994). Safety signs should be used to regulate, and control safety related to behaviour, warn of hazards and provide emergency information, including fire protection information. Below are some examples. Clear and easy to read 'NO STANDING' and 'DANGER' warning signs must be fixed to the external face of each waste and recycling room where appropriate.

Figure 5: Example and layout of safety signage

(d) Horizontal

FIGURE D5 TYPICAL ARRANGEMENTS OF DANGER SIGNS



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