Bankstown North Public School

Operational Waste Management Plan

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WASTE AUDIT AND CONSULTANCY SERVICES
Level 21 / 133 Castlereagh Street
Sydney, NSW 2000

Telephone (02) 9199 4521
www.wasteaudit.com.au

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1 Introduction

This Waste Management Plan (WMP) has been prepared on behalf of JDH Architects to accompany a Development Application for the Bankstown North Public School project.

The Plan has been developed with consideration of Canterbury-Bankstown Council's and other Authority's requirements. It is intended to inform the design of the waste services by identifying the estimated waste profile for the development and providing the total area required by the recommended equipment/systems.

In doing so this Plan, which includes waste estimates and related management requirements, has been developed in accordance with the Bankstown Development Control plan 2015 (specifically Part 13 – Waste Management and Minimisation).

In summary, the project involves redevelopment of Bankstown North Public School. The project will deliver new learning spaces, library, administration and staff areas, increased open space with associated landscaping. It is expected that the upgraded school will cater to needs of approx. 650 students.

Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements. The waste management plan has three key objectives:

1. ***Ensure waste is managed to reduce the amount of waste and recyclables to land fill*** by assisting staff to segregate appropriate materials that can be recycled; displaying signage to remind and encourage recycling practices; and through placement of recycling and waste bins to reinforce these messages.

2. ***Recover, reuse and recycle*** generated waste wherever possible.

3. ***Compliance*** with all relevant legislation, codes and policies.

2 Waste Management

2.1 Waste Streams

Based on the development profile (as per Section 1), the following are the waste streams that would be expected on a regular basis:

- Comingled recycling (e.g., cardboard/paper, glass and plastic containers);
- General waste; and
- Garden waste.

All garden waste will be managed by the appointed gardener. There will be a requirement that this waste be either used on site, or disposed of at a composting facility. Disposal to landfill will not be a permitted option.

2.2 Waste Generation Estimates

Based on averages for quantity of waste generated and composition as determined by industry data (i.e. data/information provided by WACS' waste audits conducted in a broad range of sectors) as well as consideration of the waste generation rates as detailed in the NSW Environmental Protection Authority's *Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities,* it is estimated that the development will generate a total of **6,500** litres of waste and recyclables per week.

The following table summarises the expected quantities of waste and recyclables generated for the development in terms of volume per week.

Table 1 – Waste estimates

	L/week
General Waste	4,875
Commingled Recycling	1,625
Total	**6,500**

3 Waste Management Systems and Spatial Requirements

3.1 Waste Systems and Bin Requirements

The following tables show the recommended systems required to manage the estimated waste profile as detailed in the above table for the development. The systems refer to the main storage area system rather than the internal bins that may be used within the development.

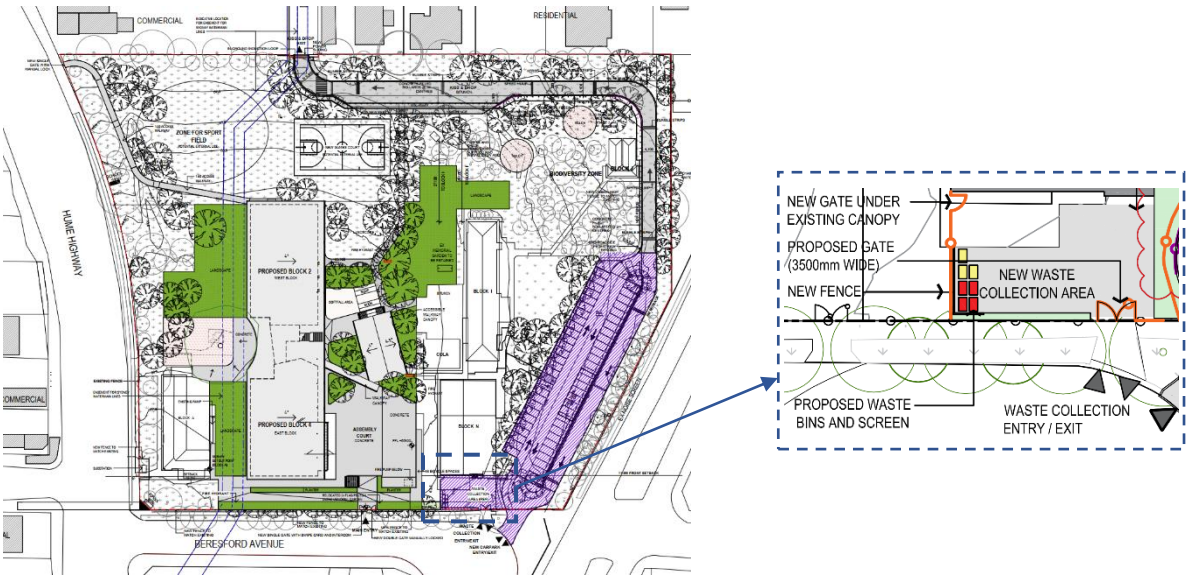
Table 2 – Waste Systems

Waste Stream	Bin Size and No of bins	Clearance (frequency/week)	Capacity (Weekly)	Estimated Volume/week
General Waste	4– 660 L bin	2	5,280	4,875
Commingled recycling	3 – 660 L bin	1	1,980	1,625

Based on the estimates of waste generation and the number of bins required (with the collection schedule as noted), as well as allowing 30% space for bin movement, the size of waste storage area should be approximately 9 sqm. The size of waste storage area is sufficient for storage of waste and recycle bins. See Appendix A for bin dimensions.

3.2 Waste Storage area

The following diagram illustrates the location and layout of waste storage area. The waste storage area will be constructed in early works stage of the project.



The waste storage area is adequate for the number of bins required. The waste areas will be accessed by cleaning staff only.

The waste and recycling bins will be colour coded and clearly signed. Each stream will be located in a designated area. This will assist in easy identification of correct bins by those with authorised access.

3.3 Waste collection

Waste collection services will be provided by a private waste contractor. The Appointed contractor (TBA) will service the bins directly from main waste storage area. Bin carting route from storage area to collection point is free from obstructions. See Appendix C for swept path analysis. The waste collection will occur during non-school hours or at weekends.

3.4 Operational Procedures

The following summarises the recommended waste and recycling systems that will be implemented.

- MGB for waste and recyclables are located around the school grounds for use by staff and students.
- All MGB and bins will be managed by school cleaning staff.
- Relevant rooms within the areas will be provided with small (15 litre) bins for both waste and recyclables in each room.
- Staff and students will be provided with information on the proper use of the waste management system and all will be encouraged to maximise the separation of general waste and mixed recyclables to aid the proper disposal of all materials.
- Waste/recyclables from the building will be collected on a daily basis by building cleaners and transported to the main waste storage area.
- Cleaners will be responsible for emptying bins into the 660 litre MGB's.

Signage will be a crucial element of the waste management system. Appendix B contains examples of signage. These are the type of signs that should be used throughout the buildings. Other signs can be accessed from the NSW EPA website at: http://www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm.

3.5 Education

Staff and students will be advised as to correct segregation by information conveyed via newsletters, signage and staff advising students, regarding the waste management

systems including how to use the system, which items are appropriate for each stream and collection regimes.

3.6 Container Deposit Scheme

The NSW container deposit scheme, Return and Earn, commenced across NSW on 1 December 2017. Under Return and Earn, most empty 150-millilitre to 3-litre drink containers will be eligible for a 10-cent refund when presented to an approved NSW collection point. Container materials that may be eligible for a refund include

- PET
- HDPE
- glass
- aluminium
- steel
- liquid paperboard

This initiative by the NSW Government can be viewed as an opportunity for the School to collect eligible containers and the transport them to a collection point in order to obtain the refund. School staff and students could also deposit eligible containers from other sources as a means of fund raising.

The following NSW Government website provides details and the School can find collection locations (https://www.epa.nsw.gov.au/your-environment/recycling-andreuse/return-and-earn)

3.7 Public Place Recycling

With public open spaces, consideration needs to be taken regarding public place recycling (PPR). General waste and recycling facilities will be provided in public realm areas throughout the development.

Simple, colour-coded and consistent representation of common recycling and waste streams makes it easier for people to know how and what to recycle. Introducing a public recycling system has environmental, social and financial benefits including:

- Responding to community expectations to 'Do the Right Thing'.
- Reducing the amount of waste sent to landfill and recovering valuable resources to be made into new products.
- Financial benefits over time as materials are diverted from landfill and into recycling.
- Contributing to triple bottom line reporting.

It is important that general waste and recycling bins are always located together in order to make recycling as accessible as general waste disposal. Recycling bins should never be located on their own in isolation from a general waste bin as patrons are likely to contaminate the recycling bin with general waste if there is no other option to dispose their general waste.

The implementation of organics recycling bins is not recommended in public places due to the high levels of contamination commonly observed in such systems.

All bins should be clearly signed and appropriately colour-coded to ensure the streams are readily identifiable. Signage for PPR should be:

- Colour-coded: red for general waste and yellow for recycling
- Large and easily viewed from all angles: this may mean that signs are placed on all sides of the bin or above the bin.
- Simple: don't use jargon (words such as PET, comingled, HDPE and even the recycling triangle can be confusing as this symbol can appear on a number of items that are not necessarily recyclable.
- Unambiguous and uses visual imagery

All public domain waste and recycling bins will be managed and collected by the cleaners as part of their existing waste and recycling operations.

The following are some examples of public place recycling bins that could be used within the School precinct. Contacting providers of these type of bins will enable the development to obtain bins that are "fit for purpose" as well as integrating into the development design.


RECYCLING
LANDFILL

4 Waste Stream Acceptance Criteria

4.1 Acceptance Criteria

General Waste:

General waste bins will be 660L MGBs. The lids and signage should be colour-coded red. The general waste stream does not include hazardous material (such as batteries, fluorescent light tubes, light bulbs and/or toner cartridges), recyclable material or electronic equipment such as computers, TVs and mobile phones.

Comingled (Mixed Recycling):

The commingled recycling system will be 660L MGBs and should accept all recyclable plastic containers, aluminium containers, glass bottles and steel cans, paper and cardboard. Comingled recycling bin lids and signage should be colour-coded yellow.

4.2 Bin Requirements

Containers located within the development for waste and recycling should be consistent. The following table outlines the colour coding that has been developed by Standards Australia.

Table 3: Standards Australia waste/recycling container colour coding

Waste Stream	Bin Body Colour	Lid Colour
Paper Recycling	Blue	Blue
Cardboard Recycling	Green	Blue
Food Organics	Burgundy	Burgundy
Commingled Recycling	Green	Yellow
Used Cooking Oil Recycling	NA	NA
General Waste	Green	Red
Green Waste	Green	Green

5 Staff Education

Staff will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Appropriate signage and updated information will also be provided, as well as receiving feedback on issues such as contamination of the recycling stream or leakage of the recyclables into the general waste. The building management will have the responsibility for these tasks.

All waste receptacles will be appropriately signed and additional room signage is usually provided from most waste contractors during implementation of the waste contract. Examples of signage are included in Appendix B.

It is recommended that all signs should:

- Clearly identify the waste/recycling stream;
- Use correct waste/recycling stream colour coding;
- Identify what can and cannot be disposed of in the receptacle; and
- Include highly visual elements to accommodate for individuals with inadequate English literacy.

6 Ongoing Management

Having suitable systems in place is only one element of an effective waste management system. Compliance by all stakeholders is essential.

Prior to acceptance of the cleaning contract, the contractor will be required to demonstrate how the management of waste and recycling will be carried out so as to ensure that segregated materials are placed in the correct systems. This process will be agreed upon and a training program implemented by the cleaning contractor to ensure full understanding by all staff and building management/site caretakers.

In addition, building management/site caretakers will be responsible for managing any non-compliance issues they observe during their activities. This may include contamination of recycling, non-participation in the recycling system, or missing or damaged bins.

Waste and recycling contractors will be required to report actual volumes collected by stream so that site management can monitor performance and feed this back to stakeholders.

It is highly recommended that a basic reporting program be set up at the site which would include bin tally sheets that detail the number of bins collected and how full they are at the time of collection, in addition to communication procedures to allow waste contractors to provide feedback regarding contamination and leakage.

All Staff should be educated and made aware of any changes to the existing waste systems.

Appendix A – Bin Dimensions

Bin Size	Dimensions (Width x depth)	Bin footprint
120 litre	480 x 545 mm	0.26 sqm
140 litre	535 x 615 mm	0.33 sqm
240 litre	585 x 730 mm	0.43 sqm
660 litre	1260 x 780 mm	0.98 sqm
1100 litre	1240 x 1070 mm	1.32 sqm
3 m3 bin	2020 x 1450 mm	2.93 sqm

Appendix B – Example Signage

Appendix C – Swept Path Analysis