8.10 ATTACHMENT 10 – WASTE MANAGEMENT PLAN

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Instant Waste Management
651 Nicholson Rd. Armadale WA - Waste Management Plan Rev: A – June 2021

Waste Management Plan

651 Nicholson Rd. WA

Within the City of Armadale

Issued by:

Jake Hickey

State Resource Development Manager

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1. Introduction

1.1. Executive Summary, findings, assumptions & recommendations

This Waste Management planning of an educational development requires many considerations. First of which was the diversion of waste from landfill, as per council bylaws & state government waste strategy targets. Followed by the building occupants' amenities & their ease of use of the waste systems by customers, staff, caretakers and any visiting contractors.

Based on information from the City of Armadale's Waste Department on its Waste Guidelines, site considerations & project meetings using the issue of the latest yield schedule. The bin storeroom has been designed to allow for more than enough space for the buildings' waste generation of the required two types of waste covered in development approval.

Signage (in text and pictures) for better diversion rates and the reduction of contamination of the waste streams are recommended within the bin store area and on all public access bins.

Waste Collections may occur between 6am – 5pm, although peek school drop off and collections times are recommended to be avoided, to reduce the risk of incident with higher traffic flows and increased pedestrian activity. Three times collection regimes each week for general waste and commingled recycling. The appointed contractors' front lift compaction trucks, must always travel along the streets and any internal laneways in a forward gear at all times. Entering and exiting the site in a forward gear is a requirement of a typical traffic plan (if required, to be provided by others).

The commercial collection of waste using a front lift truck has been considered within the calculations for required space capacity within the bin store. Consideration has been given to other school sites (under the same provider) with their frequency of collection shown as comparative to the new site based on ~1000 student capacity at the Forrestfield site.

All other typical recommendations regarding bin store designs and drainage considerations are detailed in the Appendixes & drawings attached.

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1.2. Purpose

This Waste Management Plan outlines the correct approach for the management of waste during the initial design, application for local government building approval. The end user / tenant waste generator's processes once the building is complete are covered under operational waste management plans which can be developed as required.

All construction, liquid waste, post design approval and the commissioning phases of the building are covered in other plans, (developed as required).

1.3. Scope of Plan

This plan details the waste management strategy for the buildings' end users, and includes:

- Environmental protection from contamination by waste, debris or discharges;
- Management of solid environmental contaminants, waste reduction strategies, waste stream segregation (if required) and recycling.
- Allocates adequate space for bin storage & waste management for general & recycled waste.
- This scope excludes liquid waste systems & Water Corporation requirements, which if needed are covered under a Hydraulic Engineer's professional indemnity for grease traps etc.

1.4. Precedence

Where ambiguity is detected between the procedures and requirements in this plan and the design documentation, then the procedures nominated in this Waste Management Plan will take precedence.

1.5. Interface with other Project Plans and Procedures

This plan forms part of an integrated set of environmental documents and should only be read in conjunction with all other project documentation provided by the Design Team at Development Approval stage.

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1.6. Project Description

A detailed project scope and description was provided by the design team by email. Drawings detail bin presentation points within the bin store, within the boundary of the building.

Occupancy figures were generated from the yield schedule via drawings & emails.

- Waste generation rates are treated as per the City of Melbourne for Education or training and Teaching Space.
- Yield schedule shows ~1000 students and 20,313m2 floor areas of waste generating areas.
- Allowance for waste stream generation rates as per City of Perth & as per WALGA guidelines & the City of Perth waste guidelines have been considered along with the actual generation rates of three other sized schools managed by the same educational provider.

General Waste Red lid ~2 x 4,500L bins collected twice weekly.
20,313m2 of yield based on 5L per 100m2 or 0.5L per student, means that the educational facility will produce **1,015L** per day x a maximum of seven days = **5,078L per week. Or 2 x 4,500L bins collected < twice weekly**.

Recycled Waste Yellow lid ~2 x 4500L bins collected weekly.
20,313m2 of yield based on 5L per 100m2 or 0.5L per student, means that the educational facility will produce **1,015L** per day x a maximum of seven days = **5,078L per week. Or 2 x 4,500L bins collected < twice weekly**.

Landscape (Lime Green waste N/A)
Private landscape contractors are needed to remove green waste from the maintenance area. Composting systems can be considered in the operational waste management plan after this development approval waste management plan is approved as a planning condition.

FOGO
N.B. that the FOGO system is not a mandated requirement of the City of Armadale for commercial development approvals. Consideration of different ways to manage the food waste can be considered in an operational waste management plan after this development approval waste management plan is approved as a planning condition. Examples of systems for consideration are the Biomaster Plus 4.

Bulk Hard Waste or maintenance construction work by small commercial skip bin service.
N/A. It is recommended that permit to works be considered and bulk skips deployed in fenced areas or outside of term times.

Paper compactor or blue lid ~1 x 3000L bins collected weekly.
Currently the removal of paper and cardboard bins are not a mandated requirement of the City of Armadale waste guidelines for development approval. Consideration should be given to office paper and cardboard only streams in a future operational waste management plan, after this development approval waste management plan has been approved.

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1.7. Document Control

Amendments to this Waste Management Plan are approved by IWM and distributed to all & any holders of controlled copies by AIC.

Controlled Copy No.	Date	Name of Recipient	Organisation
WMP RRS Rev: A	10th June 2021	Kamram Butt	**AIC.WA.EDU.AU**

Uncontrolled copies of this plan may be distributed to the Main Contractor, the project team & maintenance personnel.

These copies are not subject to automatic amendment and the receiver should verify currency of the document.

Revisions to this Plan will be made as required to reflect the current system requirements.

Current Revision Record:

Document Reference	Date	Revision	Description	Pages	Reviewed By	Approved By
WMP – PRI Rev A	10/06/21	Rev: A	Issued for DA	1 – 13	Jake Hickey	Kamran Butt

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2. Waste management plan

2.1. Introduction

Waste can affect different aspects of the environment and may cause contamination, impacts on visual amenity and health effects. Waste materials that may be produced on the Project site include:

- Litter including food and drink packaging;
- General Waste from tenants
- Recyclable waste from tenants
- Maintenance works waste
- Office equipment paper, cardboards, etc.; and
- Containers For Change. Although not a requirement of development approval applications these clean & separated waste streams can benefit charity donation at local deposit points.

It is important that all litter and waste generated by students and maintenance activities is constrained within the project area, using designated bins and waste management procedures. At no time should surrounding premises or environments be impacted by waste from maintenance. Bins near entrances help combat littering and create a clean and harmonised environment when serviced regularly by caretakers.

2.2. Recycling

The guiding principle of waste management is to minimise the impact of waste on the environment and the public wherever practicable. The hierarchy of waste management applied is:

a) Avoid – making the waste in the first place – alternative designs & lean procurement systems.
b) Reduce – via prevention or elimination of waste products;
c) Reuse – find a secondary use for the waste product; and
d) Recycle – alternative use for waste product, which may include reprocessing of product.
e) Recovery – divert materials away from landfill that could be processed into feedstock for the waste to energy sector.
f) Landfill – control the destination of waste to its' relevant class of landfill site.

Waste products shall be eliminated, prevented and reduced wherever practicable. This shall be achieved through rationalising the number of products onsite, finding alternative products, which assist in volume reduction and are recyclable. Other methods to help minimise the generation of waste include:

- Storing maintenance materials safety to avoid damage and loss.
- Regular orders in an "as needed" basis rather than large stock levels of consumables. With packaging returning options to the suppliers of large and frequent carboard or pallet goods.
- Keeping materials in their packaging for as long as possible to protect them from damage.
- Reuse of materials, until no longer fit for purpose.
- Reuse of materials for alternative purposes,
- Finally, the product can be transported offsite for further processing and recycling by the licensed waste contactor.

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2.3. Aspects requiring management.

Commercial processes within occupied buildings have the potential to produce a large amount of solid waste; Therefore, it is important to properly design & manage the waste flow. Potential aspects of waste management include:

- Generation of solid wastes, such as plastics, paper and aluminium cans, by visitors may impact the surrounding environment if they are not contained and properly managed;
- Waste not properly contained may attract unwanted feral animals & odours;
- Bin storage designs, their maintenance, access & locations.
    - Volume of waste & recyclables
    - Access to bin storage & transferal to collection point;
    - Frequency of collection
    - Safety of waste operatives & members of the public
    - Truck access to roads & site. (turning curves & bin sizes)
    - Amenity (plant machine noise and waste odours)
    - Local Government requirements
    - General waste, generated on the site is transferred to the bin store via staff.
    - Recycled commingled waste & general waste is deposited in the bins by staff.
    - Spare food waste streams can be donated to food bank or other charities from the canteen. Packaging can be returned to supplier or separated for clean / dry recycling.

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2.4. Objectives, Targets & KPI's

Objective	Target	Key Performance Indicator
Solid waste to be disposed of as per regulatory requirements.	All waste to be disposed of by a licensed waste contractor. (Private or Council).	Onsite waste disposal facilities kept clean & odour free. Any moving parts separated from public.
Client aim to maximise landfill diversion	Recycle commingled waste bins used	Commingled bins not contaminated
No waste to affect nearby premises or tenants	Limited complaints relating to waste	No. of complaints relating to waste

2.5. Building Management Actions

Parameter	Action	Timing	Responsibility
Induction	During inductions all maintenance personnel shall be made aware of individual responsibilities in regards to waste management, including the understanding that all personal rubbish and maintenance rubbish generated is to be properly disposed of in designated disposal facilities	Establishment of a permit to work or similar maintenance systems.	All contractors & sub contractors, Building Supervisor
Waste Management Plan	Maintenance subcontractors will be required to comply with the Waste Management Plan for their Scope of Work. Detailing the type of waste generated, waste avoidance / reduction / reuse / recycling strategies if required.	Establishment of landscape contract	Maintenance & landscaping contractors. Building Supervisor
Waste Disposal	Secure appropriate waste disposal facilities (wheelie bins) shall be provided in strategic locations onsite. Waste bins shall be located such that they do not affect the community and not too close to surrounding premises. Separation of waste for recycling will be enforced and monitored at Car Park recycling points.	Occupancy	Building Supervisor
Waste Disposal: Storage & transfer of waste to a collection point	Waste disposal facilities shall be regularly collected or emptied by a licensed waste collector in accordance with Local Council Health Laws.	Occupancy	Building Supervisor
Storage Area design	Where possible a secure storage area allocated for the collection & recycling of waste will be established.	Design	Designer & or Architect
See next page for more parameters			

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Parameter	Action	Timing	Responsibility
Waste Contractors	Licensed contractors shall be engaged to remove waste.	Handover from construction project team to maintenance team	Project Team & Maintenance team
Putrescibles Waste	All putrescibles waste to be placed in a lidded bin and removed separately if it becomes a condition of local government.	Occupancy	Building Supervisor
Recycling / Waste Reduction	Recycling initiatives will be investigated and implemented on site if required.	Occupancy	Building Supervisor
Site Maintenance office or Building Supervisors' stores	The site supervisors' office shall implement office waste minimisation techniques: • Reuse methods where possible. • Using electronic documents to reduce use of paper • Purchasing products in bulk to reduce packaging	Establishment	Building Supervisor
Hazardous Waste	Hazardous waste will be managed and disposed of as per the Material Safety Data Sheet requirements and Environmental Protection (Controlled Waste)	End of Defect works (Construction), Maintenance teams & Building Supervisor	Sub Contractors & Building Supervisor, medical staff or nurse for sharps.
Servicing & cleaning of bin store	Where practicable bin storage plant will be serviced by licenced contactors to reduce the risk of waste onsite and potential for chemicals spills.	Maintenance	Building Supervisor

2.6. Monitoring the Actions of Building users

Type of Monitoring / Reporting	Timing	Responsibility	Record
Measure the diversion from landfill of recycled waste streams	Monthly	Building Supervisor	Internal record keeping
Measure the amount of General waste	Monthly	Building Supervisor	Internal record keeping
On site segregated waste (if required). Appropriate, secure waste placement	Daily	Building Supervisor	Internal record keeping

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Appendix I

School waste management:

Separation of waste at point of generation: Recommend that two or more separate bins to be incorporated into all the areas where waste and recyclables are generated. If contamination is a problem then limit access to recyclable waste streams by students and non-conforming guests.

Bin store & recycling collection point design considerations:

Size: The size of the area set aside for the management of waste is sufficient to accommodate the number of bins required (based on the calculations used and the collection regime provided).

Ventilation and odour: The design of the bin store will provide for adequate natural ventilation through ventilated doors which will be permanent, unobstructed natural ventilation openings direct to the external air, not less than one-twentieth i.e. 5% of the floor area.

Lighting: Artificial light controlled by switches will be located both outside and inside the room.

Noise: Waste and recyclables will be collected from the waste collection point on the ground level. Commingled recycled waste can be gathered for collection on each floor and transferred to bins store.

Signage: Clear and easy to read “NO STANDING” signs and “DANGER” warning signs for children will be fixed to the external face of each waste and recycling room where appropriate and signage designating the storage of RECYCLABLES will be fixed to the internal wall(s). Pictures used for signs.

Aesthetics: The bin store has been designed within the development and as such will be consistent with the overall aesthetics. The waste collection point is located away from the front or main entrances to the building and avoids setting bins out along the external walls of the building.

Protection from Fire, theft and vandalism: The bin store is located on the ground level and access will be restricted to only the Site Supervisor and the approved building user & maintenance staff.

Vermin: On the ground floor self-closing door to eliminate access to vermin will be installed.

Washing bins and waste storage area: The bin store will have bin-washing facilities including an adequate supply of hot and cold water mixed through a centralised mixing valve with hose cock and have floor drainage installed. The site supervisor will be responsible for washing bins (or contracting the waste and recycling service provider to wash bins) and for maintenance of the bin store. The walls, floors and ceilings of the waste room(s), recycling room(s) and service compartment(s) will be finished with a light colour.

Distance from service area & truck access: Reasonably level ground, with flat trafficable (bin width) access paths from the bin store to the presentation area are required. Ideally store and collection area are the same place with limited access to the public and staff. Only cleaners, caretakers and maintenance staff need access the bin store during term time.

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Appendix II

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Bin Vehicle Specifications Provided for reference only,

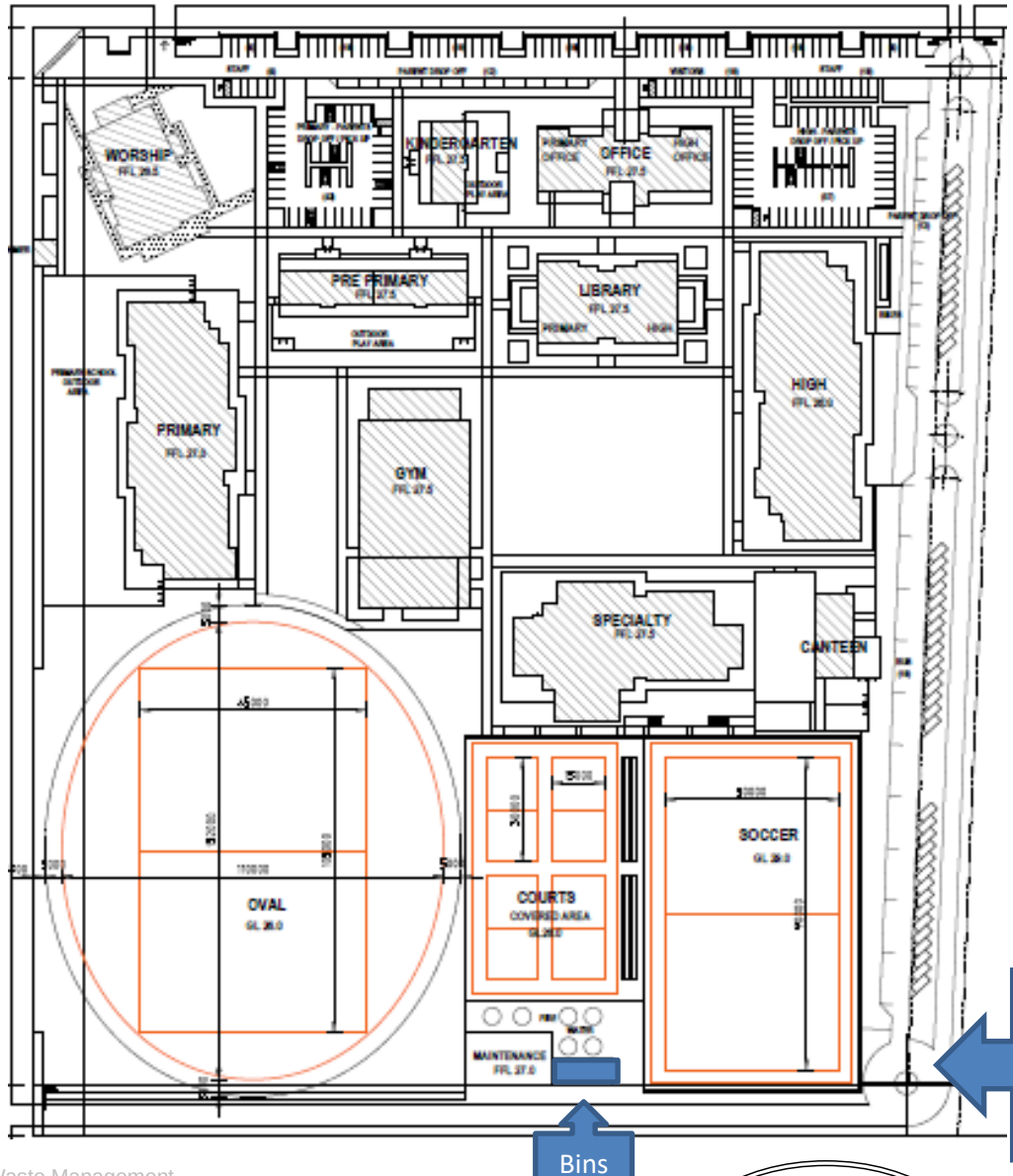
See traffic management if required.

Bin Specifications

Note alternative bin providers might have small differences in size.

Capacity	120L	240L	360L	660L	1100L	3000L	4500L
Depth	0.620m	0.715m	0.900m	0.765m	1.070m	1.505m	1.605m
Width	0.540m	0.580m	0.580m	1.360m	1.360m	1.805m	1.805m
Height	0.920m	1.075m	1.075m	1.235m	1.485m	1.225m	1.570m

Site layout with internal bin store marked in blue.



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Appendix III

Relevant documents:

- Elevation & Plan Drawings Rev 2 dated 3rd March 2021.
- Yield schedule from May 2021 emails.
- Estimated number of students from conversations with design team June 2021.
- Drawings of Bin Storage area.
- Bin transfer to presentation point to be managed by the caretaker.
- Typical truck data flyers & bin sizes available on website &/or provided by Council.
- Drawings to scale showing bin store and development.
- City of Melbourne waste management planning guidelines.

Disclaimer:

The information contained in this entire Waste Management Plan & the attached documents are provided in good faith. The company believes the information to be accurate and current at the date of publication (June / July 2021). The company does not guarantee or warrant the accuracy, completeness or currency of the information provided. All care and no responsibility has been taken in the creation of this Waste Management Plan.
No Professional liability can be passed onto the author.

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