

RICHARD CROOKES

CONSTRUCTIONS

MELONBA EDUCATION CAMPUS - 1311
SSD - 41372302

CONSTRUCTION WASTE MANAGEMENT PLAN

28 September 2023



This plan has been approved for use by the following:

Approved by / Date



28/09/2023

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CWMSP COMPLIANCE TABLE

CONDITION	CONDITION REQUIREMENTS	DOCUMENT/SUB-PLAN REFERENCE
B17	The construction waste management sub-plan (CWPMSP) must address, but not be limited to, the procedures for the management of waste including the following:	
	(a) the recording of quantities, classification (for materials to be removed) and validation (for materials to remain) of each type of waste generated during construction and proposed use for materials to remain;	Page 15
	(b) information regarding the recycling and disposal locations; and	Table 7, Page 13

CONTENTS

1	INTRODUCTION	5
1.1	PURPOSE OF THE PLAN	5
1.2	SITE SUMMARY	5
1.3	GUIDANCE AND LEGISLATION	6
2	RCC OBJECTIVES AND TARGETS	7
2.1	RECYLCYING AND REUSE OPPORTUNIES	9
2.2	MANAGEMENT OF HAZARDOUS WASTE MATERIALS	10
2.3	MANAGEMENT OF EXCAVATION WASTE	10
3	SITE SPECIFIC WASTE MANAGEMENT	11
3.1	DEMOLITION WASTE VOLUMES AND MANAGEMENT	11
3.2	CONSTRUCTION WASTE VOLUMES AND MANAGEMENT	11
3.3	RECYLCING DIRECTORY	13
3.4	WASTE AND RECYCLING RECEPTACLES	14
3.5	LIMITATIONS	14
4	REPORTING	15
5	ESTIMATED QUANTITIES	16

INTRODUCTION

This Construction Waste Management Sub-Plan (CWMSP) forms part of the Project Management Plan and satisfies Condition B18. of the SSD Pre-Construction Conditions for Melonba Education Campus. This management sub-plan refers to the construction and demolition phases of Melonba Education Campus only.

PURPOSE OF THE PLAN

Richard Crookes Constructions (RCC) recognises the importance of promoting building design and construction techniques which minimise waste and provides an efficient recycle procedure for all waste material.

The purpose of this plan is to outline processes for:

- Objectives and Targets;
- Operational Controls;
- Recording, Monitoring Corrective Action; and,
- Reporting.

SITE SUMMARY

The proposed development falls under the LGA of Blacktown City Council. The site is currently vacant land. The development will consist of the Construction of two new schools, new high school in Marsden Park and new primary school in Melonba, located at 20 Kaluta Avenue and 10 Swallowtail Street, Melonba.

Marsden Park new high school is a new secondary school comprising:

- 97 general learning spaces (GLS) and specialist teaching spaces;
- Three supported education learning unit (SELU) rooms;
- School hall, and lecture and movement studio;
- Administration spaces;
- Staff and student facilities;
- Library;
- Canteen;
- Sports courts;
- Playing field;
- Landscaping and outdoor learning areas;
- Covered outdoor learning area (COLA); and
- Car parking (shared with Melonba new primary school).

Melonba new primary school will comprise:

- 44 GLS;
- Three SELU rooms;
- Administration and staff facilities;

- Canteen;
- Multi-purpose hall;
- Library;
- Out of School Hours Care (OSHC);
- COLA;
- Outdoor play areas including sports courts; and
- Landscaped outdoor learning areas.



GUIDANCE AND LEGISLATION

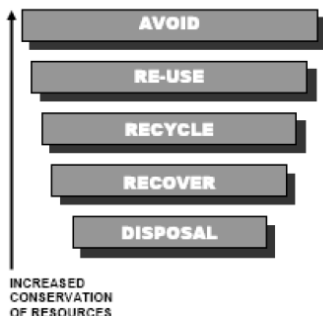
The information and guidance provided in this management sub-plan is derived from a range of construction and demolition waste management sources, at local, state, and federal levels including:

- Blacktown City Council Growth Centre Precincts DCP
- Australian Government, Department of Sustainability, Environment, Water, Population and Communities. Construction and Demolition Waste Guide – Recycling and Re-use Across the Supply Chain. (2014, November).
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- Australia's National Waste Policy 2018

RCC OBJECTIVES AND TARGETS

RCC's overall objective is to achieve a minimum of (80%) for recycled waste (by weight) generated by the Project.

The Operational Controls implemented to achieve this include:

Operational Controls		Method of Recording
General	<p>Identify any hazardous and toxic materials (e.g. asbestos) and comply with WorkCover requirements.</p> <p>Develop project Waste Management Plan</p> <p>Try not to over-order on materials (initial waste avoidance).</p> <p>Communicate housekeeping & litter reduction rules with subcontractors during contract letting and site inductions.</p>	<p>Hazardous substance survey</p> <p>Waste Records</p> <p>Inductions</p>
Implement the waste hierarchy – avoid, reuse, recycle and lastly disposal to landfill.		
<p>Waste Minimisation Hierarchy</p>  <p>The diagram illustrates the Waste Minimisation Hierarchy as a series of five horizontal bars of decreasing length, stacked vertically. From top to bottom, the bars are labeled: AVOID, RE-USE, RECYCLE, RECOVER, and DISPOSAL. To the left of the bars is a vertical arrow pointing upwards, with the text 'INCREASED CONSERVATION OF RESOURCES' at its base.</p>		
Demolition Plan	<p>Demolition disposal for concrete, bricks, plasterboard, timber, tiles, PVC, metal, paper & cardboard, glass, appliance, carpet, vegetation, soil – to Recycled Facility</p> <p>Asbestos ACM to be removed by a licenced contractor (up to 30 June 2007 >200m², 1 July 2007 > 50m³, from 1 Jan 2008 > 10m² of bonded asbestos) & managed in accordance with WHS Act & Regulation 2012 and EPA requirements.</p> <p>Lead paints & dusts will be removed using wet sanding and vacuum techniques (cleaners which comply with AS/NZS 3544 Industrial vacuum cleaners for particulates hazardous to health). Waste will be contained within sealed plastic bags for disposal. Clean up with a wet mop.</p>	<p>Monthly Waste Report</p> <p>Disposal dockets</p>
Consider recycling reprocessing	<p>Where practicable:</p> <p>Timber for reuse or mulching</p> <p>Aluminium wall frames – reprocess</p> <p>Plasterboard – recycled or use as soil improvers</p> <p>Steel – reprocess</p> <p>Toughened Glass – reprocess</p>	<p>Monthly Waste Report</p>

Operational Controls		Method of Recording
	Carpet & underlay – reprocess & mulch mats	
Product Stewardship	Investigate returning waste to the supplier? (e.g. plasterboard, packaging)	Contract/ Supply agreem'ts
Putrescibles Waste	Putrescible waste is to be contained in bins and collected by licenced contractor for disposal	Invoices
Contaminated Soils	Contaminated soils will be excavated and classified in accordance with EPA guidelines "Environmental Guidelines: Assessment, Classification & Management of Liquid & Non-Liquid Wastes" (June 2004) – www.environment.nsw.gov.au/waste/envguidlns/index.htm .	RAP Reports Test Reports Waste Records Disposal Dockets
Virgin Excavated Natural Materials (VEMN)	VENM excavated from site with suitable compaction qualities will be beneficially re-used on other construction sites whenever possible. Disposal to landfill will be the last option. No fill will be received on site that does not comply with EPA guidelines i.e. Contamination limits appropriate to the development.	Test Reports Waste Records Disposal Dockets
Acid Sulphate Soils (ASS)	Potential for acid sulphate soils ASS will be assessed based on the sites proximity to low-lying coastal areas e.g. coastal plains, wetlands and mangroves where the surface elevation is less than five metres above mean sea level. If suspected, consultant to prepare Acid Sulphate Soil Management Plan (ASSMP). Excavation and neutralisation to be supervised by consultants as per ASSMP.	ASSMP Test Reports Product delivery (lime) dockets Site Plans
Monitoring	Bin(s) with heavy lids shall be provided for putrescibles waste Daily inspections shall be carried out to ensure the worksite is litter free.	Env. Inspection Checklist
Reporting	Waste reports/management plans indicate estimated waste min (80%) of accumulated totals for the project.	Monthly Reports
Non-Compliance	Generation of water pollution and/or air pollution from onsite waste storage Inappropriate/illegal off-site disposal of waste materials Asbestos & CCA treated timber contamination of recoverable waste stream thereby requiring landfill disposal.	Env. Inspection Checklist Incident Report, NCRS
Emergency Response	No specific requirements associated with waste management Scenarios such as spill, fires, explosions covered by the project emergency response plans.	Incident Report

RECYCLING AND REUSE OPPORTUNITIES

There are many opportunities to minimise the volume of waste generated during construction. The adaptive reuse of building materials is encouraged, with significant consideration given to methods of reusing or recycling materials onsite.

The table below gives examples of potential reuse and recycling options for the materials likely to be used/generated in construction and demolition at this development:

Materials	Recycling/Reuse Potential
Asphalt	Hot in-place recycling or reprocessed into Reclaimed Asphalt Pavement (RAP).
Bricks	Cleaned and/or rendered for reuse, crushed for fill, sold or provided to a recycled materials yard.
Cardboard Packaging	Recycled at a paper/cardboard recycling facility.
Carpet	Cleaned and reused for the same purpose, reused in landscaping or garages/sheds, recycled at an appropriate processing facility.
Concrete, Masonry, Spoil	Reused on-site as fill, levelling or crushed for road base.
Doors, Windows, Fitting	Reused in new or existing buildings or sent to second-hand supplier.
Glass	Recycled at a glass recycling facility, aggregate for concrete production, or reused as glazing.
Green Waste (Organics)	Mulched, composted for reuse, trees chipped for use in landscaping or removed carefully and reused onsite or sold
Hardwood Beams	Reused as floorboards, fencing, furniture or sent to second-hand timber supplier.
Insulation Material	Reprocessed to remove impurities and reused for the same purpose or as off-cuts, compressed for ceiling tile manufacture
Metal, Steel/Copper Pipe	Recycled at a metal recycling facility, melted into secondary materials for structural steel, roofing, piping etc. copper sold for re-use.
Other Timber	Reused in formwork, ground into mulch for garden or sent to second-hand timber supplier.
Plasterboard	Crushed for reuse in manufacture of new plasterboard, returned to supplier or used in landscaping.
Plastics	Reused as secondary materials for playgrounds, park benches etc.
Roof Tiles	Cleaned and reused, crushed for reuse for landscaping and driveways or sold or provided to a recycled materials yard
Soil	Stockpiled onsite for reuse as fill.
Synthetic and Recycled Rubber	Reused for the same purpose or reprocessed for use in manufacture/construction of safety barriers, speed humps.
Topsoil	Stockpiled onsite for reuse in landscaped areas.

Table 2: Potential Reuse/recycling Options for Construction Materials

MANAGEMENT OF HAZARDOUS WASTE MATERIALS

For the purpose of this Construction Waste Management Sub-Plan, hazardous materials may include any waste that poses a hazard or potential harm to human health or the environment, particularly asbestos waste and asbestos containing material (ACM).

RCC will ensure that qualified and certified contractors are engaged to remove contaminated/hazardous waste at an appropriately licenced facility, where applicable.

If hazardous materials are unexpectedly uncovered during excavation works, the unexpected finds procedure produced by RCC is expected to be followed by the site manager, site supervisors and workers.

MANAGEMENT OF EXCAVATION SPOIL

For the purpose of this Construction Waste Management Sub-Plan, excavation spoil consists of any unwanted material generated from excavation activities such as reduced level dig, site preparation and levelling and the excavation of foundations, basements, tunnels and service trenches. This will typically consist of soil and rock.

All excavated material generated on this site may be re-used in the landscaping or used on other sites as fill material. If sandstone is found to be present, this may be sold or incorporated into the building design.

Excess spoil will be removed from site in compliance with all relevant legislation.

The following measures and safeguards will apply to the development for excavated material:

- Wherever practical, excavation material will be reused as part of the development;
- Excavation material that is not natural (virgin) material will be transported to an approved landfill site or off-site recycling depot;
- A waste classification assessment of the fill material should be undertaken prior to it being acceptable for waste disposal purposes.

SITE SPECIFIC WASTE MANAGEMENT

DEMOLITION WASTE VOLUMES AND MANAGEMENT

The table below illustrates the approximate and anticipated volumes of materials generated at Melonba Education Campus during the demolition stage.

Material	Volume (m3)	Tonnes (t)	Approximate % Recovered
Excavation Material	22036	22036	100%
Green waste	6363.2	954.48	80%
Concrete	15	45	100%
Timber	0	0	33%
Plasterboard	0	0	50%
Metals	0	0	100%
Asbestos	0	0	0%
Totals	28,399.2	22,990.48	

Table 3: Construction waste conversion

*The conversion of materials from volume to tonnes is based on the information provided in a consultation paper published by WA Department of Water and Environmental Regulation

<https://www.der.wa.gov.au/images/documents/our-work/consultation/current-consultation/Consultation%20Sheet%20-Approved%20method%20for%20recyclers.pdf>

**The percentage of recycled demolition waste is estimated by BINGO and is based on the average quantities of materials received and recovered at their facilities.

		How Waste will be Managed			
Type of Material	Estimated Tonnage	Reuse on-Site	Recycle	Landfill	Estimated Tonnage Diverted from Landfill
Excavation Material	22036	×	□	□	17630
Green Waste	954.48	□	×	×	954.48
Total	22,981.48	Total			18583.28
		Total Diversion of Waste from Landfill			81%

Table 4: Construction Waste Management

CONSTRUCTION WASTE VOLUMES AND MANAGEMENT

RCC and trade partners will manage the waste generated during the construction stage of the development, with materials being reduced and reused where feasible. Where the reuse and recycling of materials is not feasible, waste will be disposed of a general waste at a licensed landfill site.

Recyclable material generated during construction will largely consist of off-cuts and discarded bricks, timber, steel, concrete, tiles, plasterboard, and piping, as well as packaging materials.

The below table demonstrates the approximate and anticipated volumes of material waste generated at the Melonba Education Campus project.

Table 5: Construction Waste Conversion

Material	Volume (m3)	Tonnes (t)	Approximate % Recovered
Excavation Material	0	0	100%
Green waste	0	0	80%
Bricks	12	14.4	100%
Tiles	0.75	0.76	100%
Concrete	24.6	36.9	100%
Timber	0.51	0.1	33%
Plasterboard	24.71	4.9	50%
Metals	0.8	0.4	100%
Other Waste	22.1	6.63	0%
Totals	85.47	64.09	

*The conversion of materials from volume to tonnes is based on the information provided in a consultation paper published by WA Department of Water and Environmental Regulation

<https://www.der.wa.gov.au/images/documents/our-work/consultation/current-consultation/Consultation%20Sheet%20Approved%20method%20for%20recyclers.pdf>

**The percentage of recycled demolition waste is estimated by BINGO and is based on the average quantities of materials received and recovered at their facilities.

The below table demonstrates how the construction materials will be managed, and estimated percentage of materials diverted from landfill.

			How Waste will be Managed			
Type of Material	Less than 10m3	Estimated Tonnage	Reuse on-Site	Recycle	Landfill	Estimated Tonnage Diverted from Landfill
Bricks	□	14.4	□	×	□	14.4
Tiles	×	0.76	□	×	□	0.76
Concrete	□	36.9	□	×	□	36.9
Timber	×	0.1	□	×	×	0.03
Plasterboard	□	4.9	□	×	□	4.9
Metals	×	0.4	□	×	□	0.4
Other	□	6.63	□	×	□	1.99
Total		64.09	Total			62.11
			Total Diversion of Waste from Landfill			96.9%

Table 6: Construction Waste Management

RECYCLING DIRECTORY

Construction materials removed from site must be managed in accordance with current legislation and may include segregation by material type.

Please see below recommendations of recycling facility locations for materials likely to be generated at Melonba Education Campus.

	Business Name	Suburb	Distance (km)
Excavation Material	Bingo Industries Recycling Ecology Park (& landfill)	Eastern Creek	14.3
	Recycle Assist Australia	Emu Heights	15.6
Green Waste	SUEZ Eastern Creek Customer Service	Eastern Creek	15.8
	Wetherill Park SUEZ Recycling Centre	Wetherill Park	21.3
	Bingo Recycling Centre	Auburn	28.1
Bricks	Bingo Recycling Centre	St Marys	8.1
	Bingo Industries Recycling Ecology Park (& landfill)	Eastern Creek	14.3
	Recycle Assist Australia	Emu Heights	15.6
Tiles	Bingo Recycling Centre	St Marys	8.1
	Bingo Industries Recycling Ecology Park (& landfill)	Eastern Creek	14.3
	Recycle Assist Australia	Emu Heights	15.6
Concrete	Bingo Recycling Centre	St Marys	8.1
	Bingo Industries Recycling Ecology Park (& landfill)	Eastern Creek	14.3
	Recycle Assist Australia	Emu Heights	15.6
Timber	Redirect Recycling	St Marys	8
	Bingo Recycling Centre	St Marys	8.1
	Bingo Industries Recycling Ecology Park (& landfill)	Eastern Creek	14.3
Plasterboard	Bingo Recycling Centre	St Marys	8.1
	Bingo Industries Recycling Ecology Park (& landfill)	Eastern Creek	14.3
	Recycle Assist Australia	Emu Heights	15.6
Metals	Bingo Recycling Centre	St Marys	8.1
	SUEZ Eastern Creek Customer Service	Eastern Creek	15.8

Table 7: Specified Materials Recycling Directory

WASTE AND RECYCLING RECEPTACLES

The frequency of waste removal from Melonba Education Campus will be determined by the volume of materials deposited into the dedicated skip bins. Skip bins will be monitored daily by the Site Manager to ensure they do not overflow. If skip bins are reaching capacity, removal and replacement will be organised within 24 hours.

All skip bins leaving the site will be covered with a suitable tarpaulin to reduce spillage of waste while in transit.

All waste collection for construction works will be conducted between approved hours as per Council requirements. All waste generated on site will be transported to an approved and appropriately licensed resource recovery facility and/or landfill site.

LIMITATIONS

- The calculations presented in the report are estimates only. The amount of waste generated will be dependent on the approach taken by site supervisors, including the levels of training and education offered to site workers and the actions and attitudes of workers themselves.
- The site manager will make adjustments as required based on actual waste volumes (e.g. if waste volumes are greater than estimated, then waste storage capacity and collection frequencies will increase accordingly) and increase the amount of waste storage and collection frequency accordingly;

REPORTING

Greenstar:

The Project Green Star Administrator will be responsible for collecting monthly waste reports (Form 18.1) or utilising the waste subcontractor reporting format and issuing them to the Project Manager and Client Representative.

These reports will measure the weight of waste generated of material by classification, total weight of waste, percentage by weight recycled and percentage by weight to landfill.

General waste reporting:

Nominated member of the project team will be responsible for collecting monthly waste reports and issuing them to the Project Manager and Client Representative.

These reports will measure the weight of waste generated of material by classification, total weight of waste, percentage by weight recycled and percentage by weight to landfill.

ESTIMATED QUANTITIES

The Waste management plan – Construction chart (Form 18.2b) is an estimate of the core waste streams that will be removed from the Melonba Education Campus Project waste to be removed will be assessed for the Reuse & recycling content and the Disposal to landfill.



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