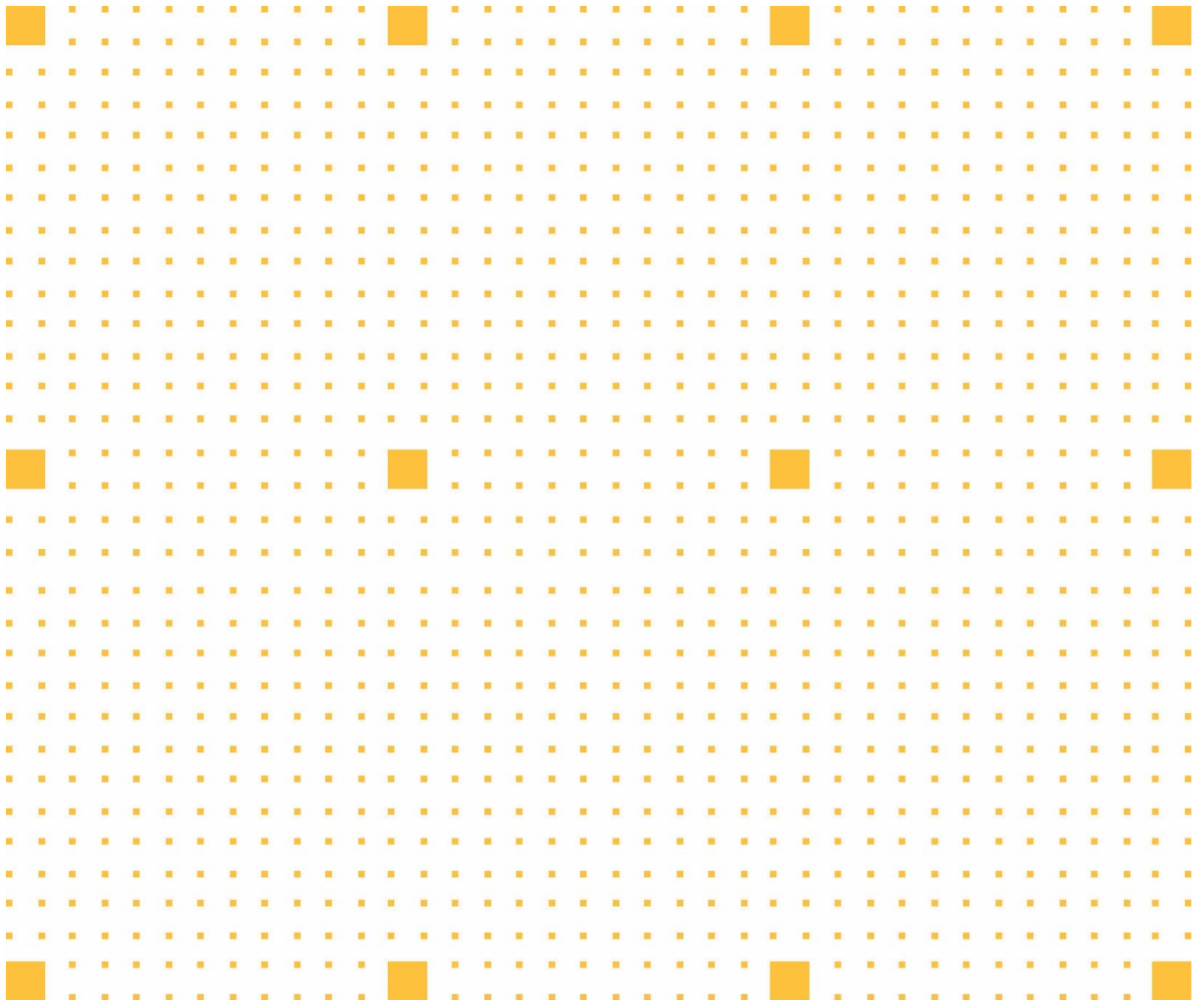


Waste Management Plan

Project: Newcastle High School Redevelopment

Job No: SN111



Rev: 1 – Jan 2024

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Hansen Yuncken would like to acknowledge the AWABAKAL people as the traditional custodians of the land where this project is located.

We honour elders; past, present and emerging whose knowledge and wisdom has and will ensure continuation of cultures and traditional practices.

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1 Document Information

1.1 Review and Approval

Position	Name	Sign	Date
Review			
Project Manager	Robert Petersen		
Site Manager	Chris Histon		
Contracts Administrator	Michael Pratt		
Contracts Administrator	Adam Rosandic		
Project Engineer	Jordan Watters		
Project Engineer	Giuseppe Carlomagno		
Site Engineer			
Site Supervisor			
Site Supervisor			
Cadet			
HSE Coordinator			
Approval			
Construction Manager			
HSE Manager	Pater Fay		

1.2 Document Control

Revision	Description	Issued by	Issue date
1	Revision 1	GC	15/01/2024

2 Definitions

The following definitions and abbreviations have been used in this Waste Management Plan. Further definitions and abbreviations are provided in referenced procedures and plans.

EPA	Environmental Protection Authority
HY	Hansen Yuncken
WMP	Waste Management Plan (this document)

3 Commitment & Policy

3.1 Purpose

To manage the construction waste including the re – use, recycle and dispose of all excavated material and other wastes generated on construction site.

This Plan has been prepared in accordance with City of Newcastle Council “Waste Management – Technical Manual”

This plan applies to the lawful disposal of construction materials on “The Project” development during the construction period.

3.2 Scope of Works

- Demolition of eight (8) buildings
- Services infrastructure upgrades
- Relocation of Building H
- Construction of a new three (3) storey learning hub on the southwestern corner of the campus, incorporating a new library, canteen, covered outdoor learning area (COLA), support learning unit, general learning spaces, hospitality teach spaces, and science labs
- Construction of a new multi-purpose facility on the north-eastern corner of the campus, incorporating a gymnasium, stage, fitness lab, flexible learning spaces, outdoor courts, and end-of-trip (EOT) facilities for staff.
- Internal refurbishment works within the administration building on Parkway Avenue to form a new student hub.
- Internal refurbishment of Building K to provide staff facilities
- New student entry from Parkway Avenue
- New sports courts, campus green and associated landscaping

3.3 Objectives

The objectives of this plan correspond with those set out in the City of Newcastle Council “Supplements Section 7.08 of the Newcastle DCP”

- Waste minimisation and resource recovery –
 - To avoid waste through design and ordering correct material quantities.
 - To encourage improved environmental outcomes through increased source separation of materials.
 - To ensure more efficient management of waste and recyclable materials.

- To maximise reuse and recycling of building construction materials, household generated waste and industrial commercial waste.
- Access – to ensure waste systems are easy to use and that collection vehicles are able to access buildings to remove waste safely and easily;
- Safety – to ensure safe practices for storage, handling and collection of waste and recycling;
- Pollution prevention – to prevent stormwater pollution that may occur as a result of poor waste storage and management practices;
- Ecologically Sustainable Development (ESD) – to promote the principles of ESD through resource recovery and recycling leading to a reduction in the consumption of finite natural resources;
- Hygiene – to ensure health and amenity for residents, visitors and workers
- Noise minimisation – to minimise noise during use by residents and collection of waste and recyclables.

4 Construction Waste

During construction it is anticipated that a variety of waste will be generated consistent with project scope and size. The major waste streams to be expected from the project are:

- Excavation:
 - General Spoil/Fill – landfill
 - Natural Material (VENM) – Recyclable
- Construction:
 - Concrete – Recyclable
 - Plastics – Recyclable
 - Timber – Recyclable
 - Glass – Recyclable
 - Metal – Recyclable
 - Tiles – Recyclable
 - General Waste – landfill

Hansen Yuncken's goal for building waste management is primarily the reduction of waste generated during construction activities. Waste reduction is the responsibility of all trades on site, as it relates to materials procurement, handling, storage and use. Waste generated during construction will be reused (where possible), recycled or disposed to landfill.

4.1 General Waste Management Strategies

Waste management activities are to be in accordance with:

- "Hansen Yuncken" Project Environmental Management plan; and
- City of Newcastle Council "Waste Management – Technical Manual"

The main goal in construction will be to reduce the total volume of waste produced, which is to be achieved by effective materials procurement, management and supply.

"Hansen Yuncken" shall focus on minimising waste by implementing the following:

4.1.1 Reducing Organic Waste

Organic waste consists of the following:

- Pruning and clippings
- Vegetation clearance
- Tree trunks and large branches from land clearance
- Weeds, leaf litter, mulch

To counter the amount of organic waste that will be encountered, it shall be chipped, mulched, composted and reused on site or sent to an off-site compost facility wherever possible.

4.1.2 Reducing solid waste

Solid waste consists of the following:

- Packaging from site materials
- Excess materials, unused products
- Soil from excavations
- Sediment retained in sediment traps

To counter the amount of solid waste that will be encountered, HY shall endeavour to:

- Buy materials with minimum packaging.
- Not over-order.
- Stockpile and reuse it on site.
- Recycle it off site or return to the supplier

4.1.3 Reducing liquid waste

Liquid waste can consist of the following:

- Site clean up
- Wash down areas
- Brick/tile /concrete cutting waste
- Dust control waste

To counter liquid waste, HY shall only discharge clean water into the stormwater. Where possible HY shall avoid generating any dirty water and when encountered, shall attempt to use such grey water for irrigation or as a means of suppressing dust.

HY shall also ensure that any waste stored for reuse, recycling or disposal cannot be washed or blown away.

4.1.4 Waste Minimisation

Major subcontractors will be encouraged to submit waste minimisation details including the following:

- Practical measures associated with their works to prevent waste entering the site
- Waste resulting from their work which can be recycled are to be actively managed as part of their waste reduction plan
- Alternative products containing recycled materials that could be utilised in their works which conform and meet the design specification
- Ordering the right quantities of materials and prefabrication of materials where possible
- Minimising site disturbance and to limit unnecessary excavation
- Careful sourcing separation of off-cuts to facilitate re-use, resale or efficient recycling

In order to reduce waste on site during the construction stage, all HY personnel and sub-contractors will be instructed to perform the following:

- Order materials to size
- Don't over-order
- Order pre-cut or prefabricated materials (where appropriate)
- Reduce packaging at source—buy materials with minimal packaging
- Separate reusable or recyclable materials from waste
- No rubbish is to be buried or burned on sit
- A designated concrete wash down area will be established on site for concrete trucks and pumps. Such an area will be adequately signed and designed so that any excess drainage from the area will be contained within the site boundaries
- Bins to be inspected regularly

4.1.5 Site Bin System

A site waste bin system will be achieved through the use of sealed bins for putrescible waste, separate portable bins for recyclable materials and non-recyclable waste materials.

Additional bins will be provided where practical to further separate waste between different recyclable materials.

Materials collected for recycling include:

- Glass
- Concrete, bricks and tiles
- Timber
- Aluminium
- Steel and other metals
- Plastic
- Plasterboard
- Paper, cardboard

The subcontractors will be responsible for the daily cleaning of their respective work areas and for placing all their waste in the nominated waste bins.

4.1.6 Packaging

All suppliers of building materials will be encouraged to nominate packaging minimisation and reuse initiatives. Bulk handling and reusable transport containers will be encouraged.

4.1.7 Waste Quantities:

The quantity of potential waste material is estimated by:

- Quantifying materials for the project
- Applying waste margins allowed in ordering materials
- Copying these amounts of waste into the waste management plan.

Normal waste percentages applicable to our work include:

- Timber 5 - 7%
- Plasterboard 5 - 15%
- Concrete 3%
- Bricks / Blocks 5%
- Tiles 5 – 10%

Conversion to volume of waste materials:

- Timber 0.5 tonne per m³
- Concrete 2.4 tonne per m³
- Bricks / Blocks 1.0 tonne per m³
- Tiles 0.75 tonne per m³
- Steel 2- 4 tonne per m³

4.1.8 Waste Management

Waste will be separated and / or stored onsite for re-use and recycling – where applicable.

Site operations will ensure minimal waste creation and maximum reuse and recycling by:

- Staff training
- Employment of a specialised waste Management contractor
- Recycled materials used in construction
- Waste management requirements stipulated in sub-contracts
- On-going checks by site supervisors
- Separate area or bins set aside for sorted waste
- Clear signage of waste areas.

4.1.9 Training and Consultation

Waste minimisation will be part of the site environmental awareness program that will be incorporated into the site induction program.

The responsibility to ensure that waste materials go into the correct bins will be with everyone on site.

4.1.10 Measure of Performance

A waste management contractor shall be involved in the project to ensure effective planning for waste management.

The Waste Management Contractor will coordinate waste recycling, measurement, recovery and disposal. HY shall ensure 80% or more (by mass) of all construction waste generated on this project is reused or recycled.

4.1.11 Monitoring

The Waste Management Contractor will be responsible for providing monthly reports to the Site Manager. These reports will measure the number and size of bins, waste type in each bin, total tonnage / cubic metres generated and total tonnage / cubic metres recycled.

Waste reports will be collated and uploaded onto HYway via BIM360 Field monthly waste reports. Cumulative summaries of generated waste and recycling statistics are readily available and auditable.

Regular project audits shall be conducted to ensure their compliance with this plan, standards, City of Newcastle requirements and the contract.

4.1.12 Corrective Actions

Where a subcontractor has caused a bin to be contaminated unduly, the Site Manager will be advised, by a non-conformance report procedure. All corrective actions taken by the subcontractor shall be monitored and recorded against the non-conformance procedure, all of which shall be at the cost of the offending subcontractor.

4.1.13 Disposal

Dispose of waste to landfill will be as a last resort only. Landfill sites or waste transfer stations will require correct handling for dusty or hazardous waste and offer discounts for sorted wastes such as brick, metal and timber.

Records of disposals shall be kept on site. Any disposal of waste that is deemed hazardous shall be disposed of by approved EPA hazardous disposal unit

4.1.14 Validation

The Remediation Contractor must be aware of and conduct all waste disposal in accordance with all relevant regulations. All waste tracking documentation including disposal dockets must be maintained by the Remediation Contractor and must be provided to the Site Contamination (Environmental) Consultant and the client for inclusion in the validation report.

Validation data is required to be collected to verify the effectiveness of the remedial works and document the final site conditions as being suitable for the proposed future use(s). Validation activities will be required for tracking the movement of waste materials requiring off-site disposal.

5 Waste Management Details

Table 3: Demolition Waste Conversion

Material	Volume (m3)	*Tonnes (t)	**Appx. Percentage Recovered
Bricks	1312	1574.4	100%
Tiles	24.04	24.04	100%
Concrete	2372	3558	100%
Timber	238.2	45.258	33%
Plasterboard	122.98	24.596	50%
Metals	269	134.5	100%
Asbestos	128.4	39.804	0%
Other waste	345.5	103.65	30%
Totals	4812.12	5504.248	

*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.

Table 4: Demolition Waste Management

Type of Material	Less than 10m ³	Estimated Tonnage	How Waste will be Managed			Estimated Tonnage of Material Diverted from Landfill
			Reuse On-Site	Recycle	Landfill	
Bricks	<input type="checkbox"/>	1574.4	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1574.4
Tiles	<input type="checkbox"/>	24.04	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	24.0
Concrete	<input type="checkbox"/>	3558	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	3558.0
Timber	<input type="checkbox"/>	45.258	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	14.9
Plasterboard	<input type="checkbox"/>	24.596	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12.3
Metals	<input type="checkbox"/>	134.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	134.5
Asbestos	<input type="checkbox"/>	39.804	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	0.0
Other Waste	<input type="checkbox"/>	103.65	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	31.1
Total		5504.248	Total			5349.3
Total Diversion of Waste from Landfill (Minimum 80%)						97.2%

Table 5: Construction Waste Conversion

Material	Volume (m3)	*Tonnes (t)	**Approx. Percentage Recovered
Excavation Material	911	911	99.8%
Bricks	40.4	48.5	100%
Tiles	1.1355	1.1	100%
Concrete	248.4	372.6	100%
Timber	0	0.0	33%
Plasterboard	594	118.8	50%
Metals	297	17.1	100%
Other Materials	136.65	40.995	30%
Totals	2228.586	1510.1	

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

Table 6: Construction Waste Management

Type of Material	Less than 10m ³	Estimated Tonnage	How Waste will be Managed			Estimated Tonnage of Material Diverted from Landfill
			Reuse On-Site	Recycle	Landfill	
Excavation Material	<input type="checkbox"/>	911	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	908.7225
Bricks	<input type="checkbox"/>	48.5	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	48.5
Tiles	<input checked="" type="checkbox"/>	1.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	1.1
Concrete	<input type="checkbox"/>	372.6	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	372.6
Plasterboard	<input type="checkbox"/>	118.8	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	59.4
Metals	<input type="checkbox"/>	17.1	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	17.1
Other	<input type="checkbox"/>	40.995	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	12.2985
Total		1510.1	Total			1419.7
Total Diversion of Waste from Landfill (Minimum 80%)						94%

	Business Name	Suburb	Distance (km)
Excavation Material	Benedict Recycling	Mayfield West	6 km
	Summerhill Waste Management	Mallsend	11.6km
	Bingo Recycling Centre	Tomago	12.7km
Green waste	Benedict Recycling	Mayfield West	6 km
	Summerhill Waste Management	Mallsend	11.6km
	Awaba Waste Management Facility	Awaba	22.8km
Bricks	SCE Recycling	Mayfield	4.1 km
	Boral Recycling	Kooragang	5.3 km
	Benedict Recycling	Mayfield West	6 km
Tiles	SCE Recycling	Mayfield	4.1 km
	Boral Recycling	Kooragang	5.3 km
	Benedict Recycling	Mayfield West	6 km
Concrete	SCE Recycling	Mayfield	4.1 km
	Boral Recycling	Kooragang	5.3 km
	Benedict Recycling	Mayfield West	6 km
Timber	Benedict Recycling	Mayfield West	6 km
	Summerhill Waste Management	Mallsend	11.6km
	Bingo Recycling Centre	Tomago	12.7km
Plasterboard	Benedict Recycling	Mayfield West	6 km
	Bingo Recycling Centre	Tomago	12.7km
Metals	InfraBuild Recycling	Hexham	10.5km
	Bingo Recycling Centre	Tomago	12.7km