

# **SYDNEY MODERN 1178**

## **CONSTRUCTION WASTE MANAGEMENT PLAN**

**12/02/2020**



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**CONSTRUCTIONS**



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# Revision

Rev Date	Revision Description	PM's Initials (i.e. acceptance of changes)
10/09/2019	Original Issue Rev 1	
8/10/2019	Reviewed by Coffey Rev 2	
05/11/2019	Reviewed by LCI Rev 3	
12/02/2020	Minor amendments, update	

# I Compliance matrix

SSD CONDITION B65 – WASTE MANAGEMENT PLAN (WMP)	WHERE ADDRESSED
Prior to the commencement any construction (including demolition), a Waste Management Plan (WMP) must be prepared and submitted to the Certifying Authority. The WMP must:	Note
a) demonstrate that an appropriate area will be provided for the storage of garbage bins and recycling containers and all waste and recyclable material generated by the works;	Section 3.2
b) provide details demonstrating compliance with the relevant legislation, particularly with regard to the removal of asbestos and hazardous waste, the method of containment and control of emission of fibres to the air;	Section 5
c) require that all waste generated during the project is assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste";	Section 3.1
d) require that the body of any vehicle or trailer used to transport waste or excavation spoil from the Subject Site, is covered before leaving the Subject Site to prevent any spill, or escape of any dust, waste, or spoil from the vehicle or trailer;	Section 5
e) require that mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant leaving the Subject Site, is removed before the vehicle, trailer or motorised plant leaves the Subject Site;	Section 5
f) require that concrete waste and rinse water are not disposed on the site and are prevented from entering Sydney Harbour; and	Section 5
The design and management of waste must comply with the requirements of City of Sydney Development Control Plan 2012.	See below Table

SYDNEY DEVELOPMENT CONTROL PLAN 2012 – 3.14.2 CONSTRUCTION AND DEMOLITION WASTE	WHERE ADDRESSED
(1) The Waste and Recycling Management Plan is to address construction and demolition waste and include:	Note
(a) details regarding how waste is to be minimised within a development;	Section 3
(b) estimations of quantities and types of materials to be re-used or left over for removal from the site;	Section 8
(c) details regarding the types of waste and likely quantities of waste to be produced;	Section 8
(d) a site plan showing storage areas away from public access for reusable materials and recyclables during demolition and construction and the vehicle access to these areas;	Section 3.2
(e) targets for recycling and reuse;	Section 8
(f) nomination of the role/person responsible for ensuring targets are met and the person responsible for retaining waste dockets from facilities appropriately licensed to receive the development's construction and demolition waste;	Section 4

SYDNEY DEVELOPMENT CONTROL PLAN 2012 – 3.14.2 CONSTRUCTION AND DEMOLITION WASTE	WHERE ADDRESSED
(g) confirmation that all waste going to landfill is not recyclable or hazardous; and	Section 6
(h) measures to reuse or recycle at least 90% of construction and demolition waste, either on site or diverted for reuse and recycling with receipts sufficient to demonstrate the target will be achieved.	Section 8 & 3

REF CONDITION 6.2 – WASTE MANAGEMENT PLAN (WMP)	WHERE ADDRESSED
A Construction Waste Management Plan shall be prepared by an appropriately qualified contractor prior to the commencement of works. The Waste Management Plan should be prepared in accordance with DECCW's "Waste Classification Guidelines (2008)" and the Protection of the Environment Operations Act 1997.	Note
The Construction Waste Management Plan is to include the following requirements and details:	Note
(a) The type and volume of all waste materials (e.g. bricks, concrete, timbers, plasterboard and metals) is to be estimated prior to the commencement of works, with the appropriate destination for each type of waste identified. Waste should be re-used or recycled as much as practicable. Where not practicable, the location of a suitable waste disposal facility is to be identified.	Section 7 & 8
(b) Non-recyclable waste and containers are to be regularly collected and disposed of at a licensed disposal site. Frequency of collection should be identified.	Section 7
(c) No burning or burying of waste is permitted on the site.	Section 7
(d) Any bulk garbage bins delivered by authorised waste contractors are to be placed and kept within the property boundary.	Section 7
All waste (including hazardous materials) must be stored appropriately on site by the head contractor and disposed of by a licensed waste contractor at a licensed facility which can receive such waste.	Section 7

## 2 Introduction

This Construction Waste Management Plan forms part of the Project Management Plan for the Sydney Modern Project. This report has been produced in response to State Significant Development (SSD) – 6741 Condition B65, Response to Environmental Factors (REF) Installation of a new temporary kiosk substation and undergrounding of powerlines at Lincoln Crescent, Woolloomooloo (Prepared by Architectus, December 2018) Condition 6.2 and City of Sydney Development Control Plan 2012.

### 2.1 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:

- Address SSD and REF conditions;
- Objectives and Targets;
- Operational Controls;
- Recording, Monitoring Corrective Action; and,
- Reporting.

### 2.2 Project Overview

The Art Gallery NSW (AGNSW) is developing a new exhibition space adjacent to the existing State art gallery in the Domain, Sydney. The proposed Sydney Modern Project development is considered to be consistent with:

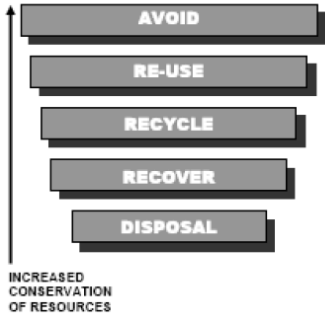
- State and local priorities for cultural and artistic infrastructure; and,
- Public expectations of a high quality architectural and landscaped space that respects the context of the site within the Domain and as the State art gallery on Central Sydney's eastern edge.

The Sydney Modern Project consists of a new stand-alone building north of the existing gallery, partly extending over the Eastern Distributor land bridge; conversion of disused WWII naval oil tanks located to the north east of this land bridge into a gallery space and back of house facilities; a covered Entry Plaza; exhibition spaces; roof terraces; landscaping and associated site works; loading and service areas; and services infrastructure of which RCC is the principal contractor.

### 3 RCC Objectives and Targets

RCC's overall objective is to achieve a minimum of (90%) 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 SafeWork NSW requirements.</p> <p>Develop project Waste Management Plan</p> <p>Try not to over-order on materials (initial waste avoidance).</p> <p>Communicate housekeeping &amp; 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><b>Waste Minimisation Hierarchy</b></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 &amp; cardboard, glass, appliance, carpet, vegetation, soil – to Recycled Facility</p> <p>Asbestos (ACM) to be removed by a licenced contractor &amp; managed in accordance with WHS Act &amp; Regulation 2012 and EPA requirements.</p> <p>Lead paints &amp; 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).</p> <p>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>

Operational Controls		Method of Recording
Consider recycling reprocessing	Where practicable: Timber for reuse or mulching Aluminium wall frames – reprocess Plasterboard – recycled or use as soil improvers Steel – reprocess Toughened Glass – reprocess Carpet & underlay – reprocess & mulch mats	Monthly Waste Report
Product Stewardship	Investigate returning waste to the supplier (e.g. plasterboard, packaging)	Contract/ Supply agreements
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 “Waste Classification Guidelines, Part 1: Classifying waste” (November 2014) – <a href="https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines">https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines</a> .	Remediation & Validation Report Waste classification certificates Waste Records Disposal Dockets
Virgin Excavated Natural Materials (VENM)	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. VENM, an appropriate resource recovery exemption and contamination limits appropriate to the development.	Test Reports Waste Records Disposal Dockets
Acid Sulfate Soils (ASS)	Potential for acid sulfate 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 Sulfate Soil Management Plan (ASSMP).  Excavation and neutralisation to be supervised by consultants as per ASSMP. If removal from site is required, treated ASS will be classified in accordance with EPA guidelines “Waste Classification Guidelines, Part 4: Acid sulfate soils” (November 2014) – <a href="https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines">https://www.epa.nsw.gov.au/your-environment/waste/classifying-waste/waste-classification-guidelines</a> .	ASSMP Test Reports Product delivery (lime) dockets Waste classification certificates 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



Operational Controls		Method of Recording
Reporting	Waste reports/management plans indicate estimated waste min (90%) 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

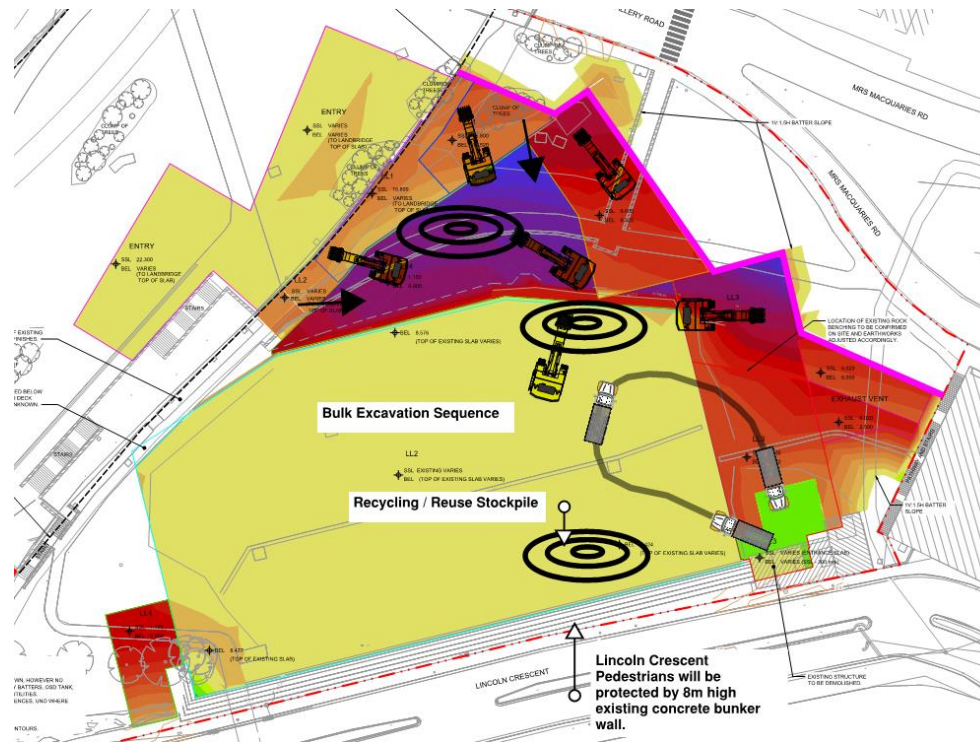
### 3.1 Classification of waste

All waste generated from the site will be assessed, classified and managed in accordance with the EPA's "Waste Classification Guidelines Part 1: Classifying Waste". If relevant, treated ASS will be classified in accordance with EPA's "Waste Classification Guidelines, Part 4: Acid sulfate soils.

### 3.2 Storage of Waste & Stockpiling

#### Demolition and Earthworks

During demolition and earthworks, RCC will temporary stockpile all reusable and recyclable materials to enable sorting and classification. The stockpiles will be located as indicated on the site plan below. This location has been selected to provide close easy access via the Lincoln Crescent access and it provides adequate protection to the public by utilising the existing bunker wall as a barrier.



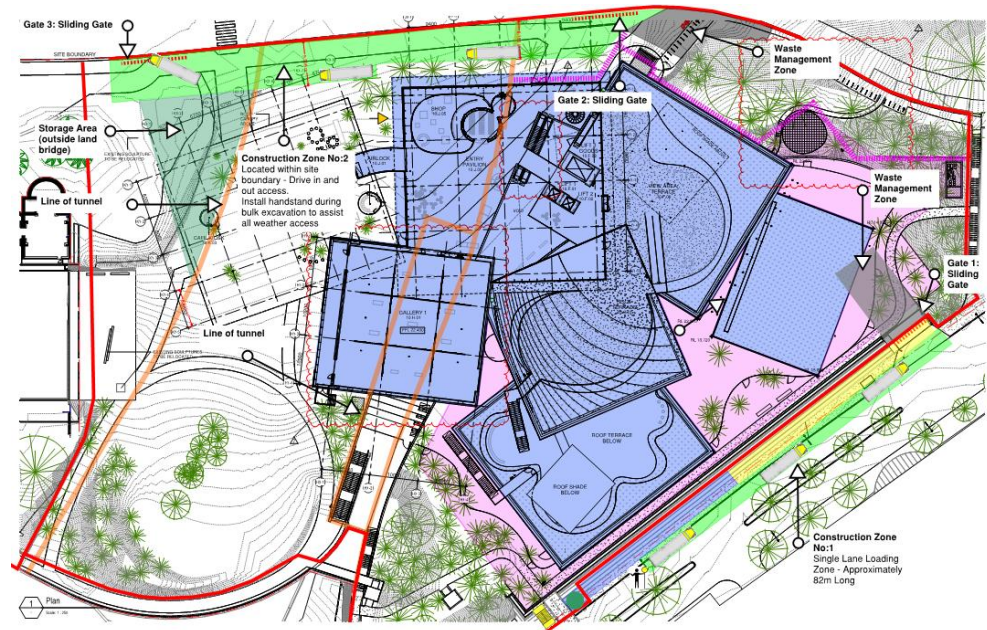
**Site Plan - Demolition and Earthworks Stockpiling**

### Construction

During construction, RCC will provide a waste management area within the site adjacent to our Art Gallery Road Construction Zone No:2 (refer to below markup) that will house large construction waste bins (non-putrescible), recycling bins (as required) and general waste (putrescible) bins for all food scraps and alike from the project's site accommodation.

In addition, there will be a waste management zone located within the site adjacent to the Construction Zone No:1 accessed via gate 1 (Lincoln Crescent) once the formwork is stripped on LL3, refer to below mark up.

RCC will subcontract all waste disposal to a suitable waste disposal company. This subcontractor will sort all waste offsite where waste cannot be practically separated onsite and generate monthly recycling and reuse reports to track all waste generated by the site and to comply with the EPA guidelines.



Site Plan - Construction Waste Management Zones



Example - General Waste Bins



Example - Construction Waste Bins with Cover

During construction wet trade waste will be managed by utilising wash box stations onsite for the treatment of wash water. Waste inputs are captured by the filtration system whilst the system water is mostly recycled by the washbox. The advantages of this system is there is no sewer connection required, and the system is portable enable it to be moved around to suit site activities.



Example - GeoSentinel Washbox



Example - Traditional Washout



### 3.3 Estimated Waste Quantities: Use This to Estimate the Waste Quantities

**Table 22.1: Waste Volume to Weight Conversion Factors**

Material	Density (tonne/m <sup>3</sup> )	Material	Density (tonne/m <sup>3</sup> )
Aluminium cans - whole	0.026	Insulation	0.05
Aluminium cans - flattened	0.087	Litter trap	0.75
Aluminium cans - baled	0.154	Metals	0.9
Asphalt / Bitumen	0.8	Oil	0.8
Bricks	1.2	Other Textiles	0.15
Car Batteries	0.375	Others	0.3
Carpets	0.3	Paint	0.8
Cement Sheet	0.5	Paper / Cardboard	0.1
Ceramics	1	Plasterboard	0.2
Clean Soil	1.6	Plastic containers - whole	0.01
Cobbles / Boulders	1.4	Plastic containers - whole, some flattened	0.013
Commingled containers (plastic, glass, steel and aluminium cans)	0.063	Plastic containers - baled	0.139
Concrete	1.5	Rubber	0.3
Garbage	0.15	Soil / Rubble<150mm	1.4
Garden / Vegetation	0.15	Steel cans - whole	0.052
Glass bottles - whole	0.174	Steel cans - flattened	0.13
Glass bottles - semi-crushed	0.347	Steel cans - baled	0.226
Hazardous Wastes	0.2	Wood / Timber	0.3

Source – Converting Volumes to Tonnes – Western Australia Waste Authority

## 4 Reporting and Compliance

### Green Star and general waste reporting

RCC will collect monthly waste reports that measure the weight of waste generated of material by classification, total weight of waste, percentage by weight recycled and percentage by weight to landfill.

All Waste Contractors, including the demolition contractor, and Waste Processing Facilities are required to demonstrate their compliance with the *Green Star Construction and Demolition Waste Reporting Criteria* through either of the following:

- A **Compliance Verification Summary** that has been signed and dated by a Suitably Qualified Auditor. A Compliance Verification Summary is valid for 12 months from the date of issue and must be current for the duration of time that an auditee is providing waste services and waste reports to a Green Star project; or
- A **Disclosure Statement** outlining how much of the 'Reporting Criteria' has been implemented. This statement must also indicate the expected timeline for implementation of at least Part 1 of the Waste Contractors section of the reporting criteria.

## 5 Additional Requirements of SSD 674I – Condition B65

### Removal of Asbestos

Any asbestos found onsite will be managed by RCC's Asbestos Management Plan and unexpected finds protocol.

RCC will engage the services of a qualified subcontractor and occupational hygienist to test and classify the waste, develop method statements to ensure methods of containment and removal are in accordance with all legislative requirements. Prior to returning to work, the occupational hygienist will issue a clearance certificate.

### Protection of Loads

All vehicles or trailers used to transport waste or excavation spoil from the Sydney Modern Project will be covered using appropriate means prior to leaving the site, to prevent any spill, or escape of any dust, waste, or spoil from the vehicle or trailer.

### Cleanliness of Vehicles Exiting Site

Prior to exiting site, all vehicles will be inspected for mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorised plant.

If material is found it will be removed prior to vehicle exiting site, to ensure roads are kept clean. In the event of loose materials being tracked onto the road network, immediate clean up will be undertaken to ensure all material is adequately cleaned and no material enters the stormwater system.

In addition, shaker grids will be installed at all entry/exit points to assist in removal of dust from all vehicles, trailers or motorised plant prior to exiting site.

#### Management of Concrete Waste

All left over concrete will be sent back to the concrete plant from disposal and concrete truck wash out. Concrete slurry is required to primer concrete pump lines prior to concrete placement, this material will be discharged into a concrete waste tray and left to cure. Once the concrete has cured it will be removed for recycling by the waste removal subcontractor via concrete waste bin.

## 6 Additional Requirements of Sydney Development Control Plan 2012 – 3.14.2 Construction and Demolition Waste

#### Compliance Statement

RCC confirms all waste generated by the project that is being sent to landfill, will not be recyclable or hazardous. This will be achieved by utilising a subcontractor to sort all general and construction waste offsite; the identification of suitable tipping facilities prior to the waste being generated to ensure compliance; and monitoring and reporting as specified by this report.

## 7 Additional Requirements of REF Condition 6.2

The Review of Environmental Factors (REF) works are limited to the construction of a new temporary substation located on Lincoln Crescent, and the undergrounding of the overhead power lines.

Giving the scope of the works approved under the REF, there will be minimal construction waste generated by the works. The majority of the waste will be spoil generated by trench excavation. This material will be progressively removed. Where construction waste bins are required to removal waste, these will be delivered to site and removed at the end of each day, this is due to the existing structures located on the boundary and no access to store bins onsite.

All waste (including hazardous material) will be classified in situ and disposed of at an appropriate tipping facility in line with this waste management plan and EPA guidelines, no burning and burying of any waste will be permitted.

## 8 Estimated Quantities

The Waste Management Plan construction chart is an estimate of the core waste streams that will be removed from the Sydney Modern Project, waste to be removed will be assessed for reuse & recycling content and disposal to landfill.



## 18.2b Waste Management Plan - Construction

Project: Sydney Modern Project

Project No. 1178

TYPE OF WASTE ONSITE		REUSE & RECYCLING			DISPOSAL
Type of Material	Estimated Volume	ONSITE	OFFSITE	Accumulated Volume (update Bi-monthly)	Accumulated Volume (update Bi-monthly)
Contaminated soils	500m3	Nil	Nil		
Excavated VENM	29237m3	Nil	Beneficial reuse		
Excavated ENM	6679m3	Nil	Beneficial reuse		
Bitumen – Demolition	125 m3	Nil	Nil		
Sandstone Cladding – Demolition	12.3m3	Nil	Reuse by RMS		
Sandstone Cladding – Construction	20m3	Nil	Recycling		
Sandstone Kerb – Demolition	1.1m3	Reuse as kerb.	Nil		
Green Waste (Trees)	2400m3	Nil	Green waste facility		
Bricks – Demolition (Substation, Pump Station and Misc)	20m3	Nil	Recycling		
Concrete – Demolition	1557m3	Nil	Recycling		
Concrete – Construction	50m3	Nil	Recycling		
Timber Flooring – Construction	8m3	Nil	Recycling		
Timber Hoarding	25m3	Nil	Recycling		
Site Accommodation Decks	40m3	Nil	Recycling		
Plasterboard	80m3	Nil	Nil		

Metals	12m3	Nil	Recycling if quantity viable		
Other: General Waste	6200m3	Nil	Nil		
<b>Total</b>	55767 m3		<b>Total</b>		

% WASTE REUSED (TARGET 90%)	90%		% WASTE REUSED (TARGET 90%)	
% WASTE DISPOSAL TO LANDFILL	10%		% WASTE DISPOSAL TO LANDFILL	

