

BARANGAROO SOUTH – BUILDING C1 WASTE MANAGEMENT PLAN

15/06/2018 | Revision No: 1



Sub Plan Revision Status				
Date	Revision	Purpose and Summary of Amendments	Reviewed by	Approved by
2010-2015	A-K	Previous LL format	WD	PC
04/09/2017	L	Revised issue for additional approvals and requirements, updated format	WD	DE
15/06/2018	4	Updated to address relevant conditions of SSD 8529	WD	DE

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WASTE RELATED ACRONYMS & GLOSSARY

CFEMP	Construction Framework Environmental Management Plan
COA	Development Consent Conditions of Approval
DP&E	NSW Department of Planning and Environment (formerly DP&I).
ESD	Ecologically Sustainable Development
EPA	Environment Protection Authority (formerly EPA, DECCW)
EPL	Environment Protection Licence
HHERA	Human Health & Environment Risk Assessment
EPA	NSW Office of Environment and Heritage
POEO Act	NSW Protection of the Environment Operations Act, 1997.
RAP	Remedial Action Plan
Secretary	Secretary of DP&E
SoC	Statement of Commitments
Special Waste (Asbestos)	Any waste that contains asbestos, including Asbestos Containing Material.

1. SCOPE OF PROJECT AND SUB-PLAN

Project specific information	
Scope:	<p>This <i>waste management sub-plan</i> details management measures for waste generation during construction of Commercial Building C1 Barangaroo South within Stage 1A. It defines mitigation measures to be implemented to meet requirements and achieve objectives concerning construction waste.</p> <p>This sub-plan forms part of the Lendlease Building (LLB) EHS management system and the C1 Barangaroo South EHS Management Plan, which has been updated to include requirements of the Construction Environmental Management Plan (CEMP) outlined within Condition C3 of development consent SSD 8529.</p> <p>This sub-plan must be read in conjunction with the Lendlease GMRs, the Project EHS Plan, and the Lendlease Building Workplace Delivery Code. These documents detail Lendlease's approach and commitment to pro-active and responsible site management.</p>
Objective:	<ul style="list-style-type: none"> • To adopt the reduce, reuse, recycle, dispose hierarchy. • To minimise impacts from waste generation. • Achieve Green Star requirements for waste management and recycling, during construction.
Key issues & Risks:	<p>Several waste streams will be generated during construction of Commercial Building C1 Barangaroo South.</p> <p>Appendix D presents an overview of the major waste streams that are expected.</p> <p>Waste types likely to be generated during construction, along with waste classification and storage / disposal requirements, are presented in Appendix E.</p>
Key Legislation / Standards / Guidance	<p>Waste is regulated by the EPA and the Conditions of Approval (COA) requirements.</p> <p><i>Protection of the Environment Operations Act 1997 (NSW) (POEO Act)</i></p> <p>The POEO Act covers the requirements for waste generators in terms of storage and correct disposal of waste and establishes the waste generator as having responsibility for the correct management of waste, including final disposal.</p> <p><i>Protection of the Environment Operations (General) Regulation 2009</i></p> <p>The Regulation contains provisions relating to:</p> <ul style="list-style-type: none"> • environment protection licences, • the issuing of penalty notices under the Act and certain related environmental legislation, • the appropriate regulatory authority for certain type of activities, • notification of pollution incidents. <p><i>Protection of the Environment Operations (Waste) Regulation 2014</i></p> <p>Makes requirements relating to non-licenced waste activities and non-licenced waste transporting, for example the way in which waste must be stored or transported, reporting and record-keeping requirements. The regulation exempts certain waste streams from the full waste tracking and recordkeeping requirements and allows the EPA to approve the immobilisation of contaminants in waste.</p> <p><i>Waste Avoidance and Resource Recovery Act 2001</i></p> <p>The objective of the Act is to encourage the most efficient use of resources, to reduce environmental harm, and to provide for the continual reduction in waste generation in line with the principles of ecologically sustainable development (ESD). The following hierarchy for managing waste, from most desirable to least desirable, meets the objects of the Act:</p>

	<ul style="list-style-type: none">• Avoid unnecessary resource consumption;• Recover resources (including reuse, reprocessing, recycling and energy recovery); and• Dispose (as a last resort).
Site Control Measures:	Site-specific controls, monitoring, reporting and performance measurements identified in this sub-plan to minimise adverse impacts of waste generation. These are as described in the Mitigation Measures table below. All controls are compliant with Lendlease GMRs.

2. MITIGATION MEASURES

Ref.	Mitigation Measure	Design	Construction	Relevant Location / Activity	Relevant Approval Conditions	Responsibility	Timing
General							
1.	Consider recycled materials in the design of concrete, road base, asphalt and other construction materials.	■		Entire project	General	Project Engineers	Design
2.	Design and manage waste management areas to prevent sediment runoff and dust generation, prevent double handling, and minimise vehicle movements.	■	■	Waste areas	General	Project Engineers	Throughout construction
3.	Construction and waste classification, transportation and management methods in accordance with the EPA's <i>Know Your Responsibilities: Managing Waste from Construction Sites</i> Guideline.	■	■	Entire project	General	Project Engineers	Throughout construction
Waste Avoidance, Reuse & Recycling							
4.	Purchase materials in bulk where possible to minimise packaging.	■	■	Entire project	General	Project Engineers	Throughout construction
5.	Store empty fuel, lubricant and chemical containers for collection by a drum recycler for cleaning and reuse.		■	Entire project	General	Construction Supervisor	Throughout construction
6.	Store waste oil, grease and lubricants in drums for collection by a waste oil recycler for treatment and reuse.		■	Entire project	General	Construction Supervisor	Throughout construction
7.	Where possible and cost effective, purchase and/or use recycled materials, or products with recycled content in place of new materials, especially where they are environmentally preferable to the non-recycled alternative.	■	■	Entire project	General	Construction Manager	Throughout construction
8.	Reuse wood packaging, pallet, plywood, formwork and off-cuts, and cardboards wrapping on-site wherever possible.		■	Entire project	General	Construction Supervisor	Throughout construction
9.	Segregate scrap metal for recycling.		■	Entire project	General	Construction Supervisor	Throughout construction
Waste Disposal							
10.	Classify waste that cannot be reused or recycled for disposal at approved disposal facilities in accordance with <i>Waste Classification Guidelines (2014)</i> .		■	Entire project	Determination Report	EHS Manager	Throughout construction
11.	Maintain all waste sampling and classification results, and waste transfer docket / receipts for the life of the project.		■	Entire project	Determination Report	EHS Manager	Throughout construction

12.	Provide receptacles including rubbish skips in appropriate locations on site and ensure a contractor is commissioned to regularly remove/empty the bins.		■	Entire project	General	Construction Manager	Throughout construction
13.	Place chemical wastes in sealed drums in designated, bunded areas. Prior to transportation of such material for disposal, check whether the waste requires waste tracking in accordance with the Waste Regulations.		■	Entire project	General	Construction Supervisor	Throughout construction
14.	Dispose of liquid wastes by tankering off-site to a suitably licenced facility.		■	Earthworks	General	Construction Manager	Throughout construction
Waste Transportation							
15.	Ensure waste truck loads are covered and tailgates secure prior to leaving site.		■	Entire project	General	Construction Supervisor	Throughout construction
16.	Ensure all trucks transporting waste off-site are appropriately licenced to carry the materials to appropriately licenced waste facilities. Record waste type and destination on a waste manifest/docket system and in the Waste Register (example in Appendix 3).		■	Entire project	General	Construction Supervisor	Throughout construction

3. MONITORING

Detail	Frequency	Applicable standards	Reporting	Responsibility
Record off-site waste disposal and recycling (type, quantities, destination) using the Waste Register Form (or similar) in Appendix F, waste contractor's systems, or the EPA online trackable waste system for any wastes classified as asbestos, restricted or hazardous.	Daily input and monthly reporting	As per Waste Register Form or EPA online system	Contractor to complete daily as required. Information to be uploaded to document management system.	Contractor / EHS Manager / Project Engineers
Retain dockets / manifests to record the date of waste removal and identify the waste transport contractor and destination of the wastes taken from site.	Monthly	All required wastes are tracked and records retained	Dockets to be uploaded to document management system.	EHS Manager / Project Engineers
Weekly inspections by the Site Manager or nominated representative.	Weekly	As per checklists	Daily Hazard ID and SWMS Review and Weekly Site CEHS Assessment Checklist	Site Manager

APPENDIX A: BACKGROUND

Barangaroo is located on the north western edge of the Sydney Central Business District (CBD). The redevelopment is bounded by Sydney Harbour to the west and north, the historic precinct of Millers Point and The Rocks to the east; and by a range of new commercial development to the south.

The Barangaroo site has been divided into three distinct redevelopment areas – Headland Park, Barangaroo Central and Barangaroo South. Lendlease Millers Point (LLMP) was successfully appointed to develop Barangaroo South in 2009. Barangaroo Central and Headland Park are being managed separately by the BDA.

The footprint of Commercial Building C1 is entirely within the Stage 1A area of Barangaroo South.

No hazardous materials or dangerous goods are planned to be stored on-site.

This management sub-plan covers construction of building C1, and is updated when needed to reflect the various stages of work. The current scope of this management sub-plan is summarised below.

Approval	Phase	Construction Activities	Incl. in sub-plan	Status
SSD 8529	Building C1	<ul style="list-style-type: none"> Construction of a seven-storey commercial building (maximum height RL 33.2), comprising retail on the ground floor and commercial on levels one to six; Provision of an outdoor terrace on level 6 of the building; Installation of photovoltaic cells on the rooftop of the building; Business and building identification signage zones; Allocation and use of 18 car spaces within the approved basement below and provision of end-of-trip facilities Public domain works; and Alterations to basement structures below. 	Yes	Pending construction certificate

APPENDIX B: PLANNING APPROVAL REQUIREMENTS

DEVELOPMENT CONSENTS:

RETAIL BUILDING C1 (SSD 8529)

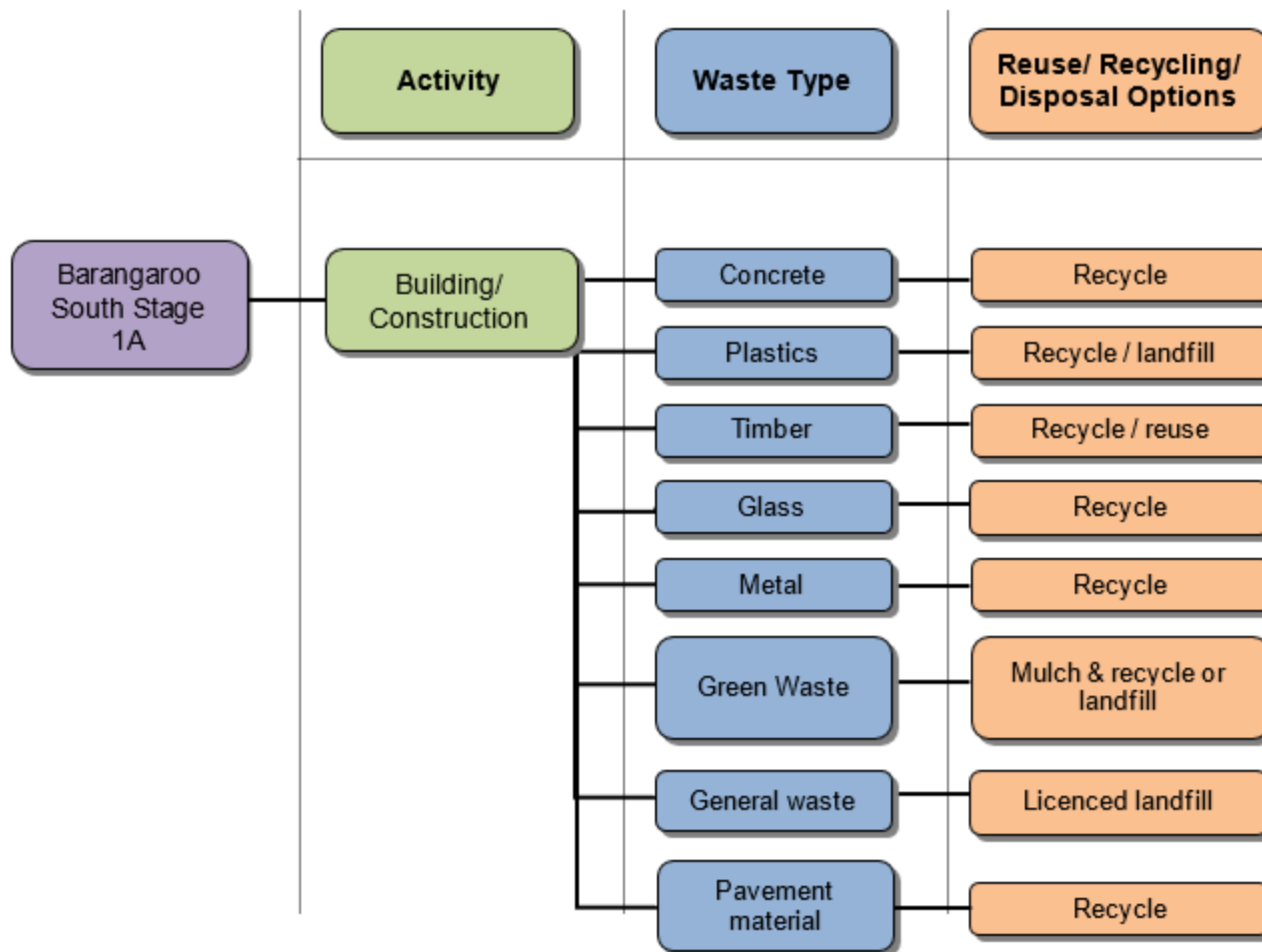
No.	Original Ref.	Relevant Requirement	Reference
1.	C7	<p>Prior to the issue of a relevant Construction Certificate, a Waste Management Plan for Building C1 prepared by a suitably qualified person shall be submitted to the PCA. Barangaroo South prepared by a suitably qualified person shall be submitted to the EPA for review and submitted to the PCA.</p> <p>A copy of the WMP must be submitted to the Barangaroo Delivery Authority and Secretary.</p> <p>Prior to the commencement of works, a copy of the CSWMP must be submitted to the Secretary.</p>	This sub-plan
2.	D13	The Applicant must ensure the requirements of the Construction Environmental Management Plan, Construction Noise and Vibration Management Plan, Air Quality Management Plan, Waste Management Plan, Construction Pedestrian Traffic Management Plan and Erosion Sediment Control Plan required by Part C of this consent are implemented during construction.	This sub-plan
3.	D14	All materials requiring removal from the site must be classified in accordance with Waste Classification Guidelines (NSW EPA, 2014). The Applicant must ensure that demolition works are undertaken so that cross—contamination of the site does not occur.	Mitigation measures
4.	D15	Removal of any other hazardous building materials must be undertaken by a suitably licensed contractor.	Mitigation measures
5.	D22	Construction waste should be managed generally in accordance with the EPA's brochure entitled "Know your responsibilities: managing waste from construction sites".	Mitigation measures
6.	D23	The Applicant must ensure that all waste generated by the development is classified in accordance with the EPA's Waste Classification Guidelines 2014 and disposed of at a facility that may lawfully accept that waste.	Mitigation measures

APPENDIX C: OTHER COMMITMENTS

No.	Original Ref.	Relevant Requirement	Reference
Relevant Precinct Initiatives – Commercial Building C1 Barangaroo South			
1.	Section 3.0 Zero Waste Initiative	<ul style="list-style-type: none"> Recycling of construction waste in accordance with the Barangaroo South (Stage 1) Waste Management Plan to target 97% diversion of construction waste. Operational waste to landfill reduction strategies through onsite separation of waste. 	This sub-plan Waste recording / tracking
Design excellence report for planning application – Commercial Building C1 Barangaroo South			
2.	Section 1.2.1 State Significant Precincts SEPP, Schedule 3, Part 12, Clause 19(02)(c)	Commercial Building C1 has been designed to achieve a 6-star Green Star rating (version D.A.B. v1.1) and achieves the sustainability objectives set out in the design excellence strategy and detailed in the ESD Report submitted at Appendix O of the EIS, including: targeting carbon neutral, capable of being water positive, targeting net zero waste to landfill, planning for climate change, design with dignity, safety in design, green travel plan, ecology, and leaving a positive legacy.	This sub-plan
3.	Section 4.1 Sustainability Waste & Recycling	<ul style="list-style-type: none"> Use of recycled timber for some structural and cladding elements, extending the life span of the material which has already provided structural capacity for wharfs and bridges Recycling of construction waste in accordance with the Barangaroo South (Stage 1) Waste Management Plan to target 90%+ diversion of construction waste Precinct wide aspiration to achieve zero waste by 2025 	This sub-plan

APPENDIX D: OVERVIEW OF EXPECTED MAJOR WASTE STREAMS

The diagram below presents an overview of the major waste streams that are expected during the remaining Stage 1A construction work.



APPENDIX E: WASTE STORAGE AND DISPOSAL STRATEGY

All waste will be removed within and from the site via trucks.

Management of Key Waste Streams

Key Waste Stream	Segregation Areas / Containers Commonly Available	Re-use/ Recycling/ Disposal Method	Waste Type (from Waste Classification Guidelines, DECCW 2014)
Construction Sites			
Concrete Wastes (solids)	10m ³ bins	Reused in temporary works or site levelling where practicable, or sent off site for recycling as building and demolition waste.	General Solid Waste (non-putrescible)
Scrap metal	10m ³ bins	Off-site recycling	General Solid Waste (non-putrescible)
Sanitary wastes where sewerage facilities unavailable	Portaloos	Licensed contractor	Liquid Waste
Organic food scraps	240L bins	Off-site to landfill with other non-recyclable municipal waste	General Solid Waste (putrescible)
Food packaging / cans / bottles / wrappers	240L bins	Recyclables sorted for off-site recycling	General Solid Waste (non-putrescible)
Paper and / or other office based wastes from onsite offices	240L bins	Off-site recycling	General Solid Waste (non-putrescible)
Asphalt	10m ³ bins	Reused in temporary works or site levelling where practicable, or sent off site for recycling or disposal	General Solid Waste (non-putrescible)
Green waste	Woodchipped (trucks)	Green waste to external recycling centre	General Solid Waste (non-putrescible)
Cables and parts	10m ³ bins with other miscellaneous construction wastes	Any metal components are to be segregated and the remainder taken off-site to landfill	General Solid Waste (non-putrescible)
Timber	10m ³ bins	Timber is to be segregated and recycled off-site or disposed	General Solid Waste (non-putrescible)
Sediment controls	Stored on site	Reuse controls where possible on other sites	General Solid Waste (non-putrescible)
Sediment build up behind erosion and sediment control structures	Keep behind control structures until they are at capacity	Respread on site, unless obvious contamination with hydrocarbons or other chemicals evident (by sight / smell)	General Solid Waste (non-putrescible)

Chemicals Storage and Management			
Drums and containers (empty and containing no residue)	Stored in bunded areas.	Taken off-site by licenced contractor for suitable rinsing and disposal at licenced landfill	General Solid Waste (non-putrescible)
Waste oil, grease, lubricants	Sealed drums / containers in bunded area	Off-site recycling by licenced waste oil recycler	Liquid Waste
Oily rags and filters	200L (or thereabouts) bins	Off-site recycling by licenced waste oil recycler	General Solid Waste (non-putrescible)
Used spill management materials such as absorbent pads / booms, used absorbent materials used to mop up oil spills / contaminated dirt from dripping machinery or other hydrocarbon / chemical sources	Bins and / or tanks suitably bunded	Taken off-site to landfill.	General Solid Waste (non-putrescible)
Site Office & Worksites			
Glass/plastic/ cans/paper/ cardboard – potentially recyclable	240L bins specified for 'Recyclables Only' as per domestic recycling bins	Off-site recycling	General Solid Waste (non-putrescible)
Plastic wrapping/containers– collected and littered	240L bins – general waste or into recycling bin as appropriate	Off-site recycling or landfill as appropriate	General Solid Waste (non-putrescible)
General domestic wastes	240L bins	Taken off site for recycling or landfill as appropriate	General Solid Waste (putrescible)
Printer Cartridges	Bin provided (capacity 20 – 25 standard cartridges)	Off-site recycling	Hazardous Waste

APPENDIX F: EXAMPLE WASTE REGISTER FORM

Site:		Contractor:	
Location:		Date:	

Date	Time	Waste Type**	Quantity: Volume or Weight	Mode of Transport	Number Plate	Name of Waste Removal Contractor	Receiving Landfill or Transfer Station	Matched to Receipt/Docket No.

NOTES:
 ** Waste types:
 Special (asbestos, tyres), Liquid waste, Vegetation waste; Concrete; Fill; Asphalt; Timber; VENM, ENM; Bricks and roof tiles; Glass; Plasterboard; Steel; Non-ferrous metal; Mixed waste; recyclable).