SMEC
Member of the Surbana Jurong Group

Waste Management Plan

Picton High School Redevelopment

Prepared for: Billard Leece Partnership
Reference No: 30013089
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Project Name:	Picton High School Redevelopment
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Prepared for:	Billard Leece Partnership on behalf of NSW Department of Education

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1. Introduction

1.1. Context

SMEC Australia Pty Ltd (SMEC) were engaged by Billard Leece Partnership Pty Ltd (BLP) on behalf of New South Wales (NSW) Department of Education (DoE) (the client) to develop a Waste Management Plan (WMP) for the demolition, construction and operations for the Picton High School Redevelopment, located at 480 Argyle Street Picton, NSW 2571 (the Project). This WMP forms part of the technical inputs to the Environmental Impact Statement (EIS) for the Project. The Project has been deemed State Significant Development (SSD 8640).

This WMP has been prepared to address the Secretary's Environmental Assessment Requirements (SEARs) and relevant legislation, policies and guidelines.

1.2. Site Description

The Project is a public high school and comprises various buildings including administration areas, offices, classrooms, gym/hall, workshops, amenities bocks, storage, covered outdoor learning area, walkways and agricultural plot. It is understood that the original school buildings were constructed around 1958 and various other buildings have been added throughout the 1960's, 1980's and 2000's. In addition to the permanent buildings there are around fourteen demountable buildings at the site. Picton High School will provide permanent teaching spaces (classroom space) for 1,500 students and core facilities (common amenities – library, hall, recreational facilities etc) are proposed for 2,000 students. Accordingly, the school would accommodate for a maximum 1,500 students at commencement of operation.

The site is bounded by residential properties to the north, south and west and commercial/industrial sites to the southeast. The land to the east and southwest appears vacant.

Numerous buildings (those highlighted in pink in Figure 1.1) will be demolished to facilitate the redevelopment of the site.

LEGEND

- Contours
- Project Location
- Demolition
- Existing Building
- Other Structures
- RMS Land
- Wollondilly Shire Council Land
- Extent of Proposed Works
- Cadastral Boundaries

Cut and Fill Depths (m)

- 1.6 to 0.0
- 0.0 to -2.0
- -2.0 to -2.2

FIG NO. 1-1 **FIGURE TITLE** Buildings to be Demolished

DATE 05/04/2018

0 10 20 40
1:1,500 Metres

PAGE SIZE A3

COORDINATE SYSTEM GDA 1994 MGA Zone 56

PROJECT NO. 30013089 **PROJECT TITLE** Picton High School Redevelopment - EIS

CREATED BY FA13847

SOURCES Roadnet MDS 2017, Public NSW
Imagery: © Department of Finance, Services & Innovation 2017

SMEC

Location: \\AUSYFSV001\Projects$\30013089 – Picton High School Redevelopment\100 Data\102 GIS\Maps\30013089_F01_Build_tbDemo.mxd

Last updated by: FA13847 on 5/04/2018 at 13:10

1.3. Background

The SEARs for the Project were issued on 17 August 2017 and reissued on 29 September 2017. The SEARs outline the requirements for waste management for the Project.

The WMP must provide information on the following:

- Identify, quantify and classify the likely waste streams to be generated during construction and operation
- Describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste.
- Identify where possible appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.

1.4. Environmental management systems overview

The Project's Construction Environmental Management Plan (CEMP) describes in detail the overall system for the project's environmental management during construction. That system forms part of the environmental management framework being delivered by NSW DoE.

Relevant management measures identified in this plan will be incorporated into site or activity specific Safe Work Method Statements (SWMS).

Contractor SWMS will be developed and approved by the DoE Environment Manager (or delegate) prior to commencement of works and demolition personnel will be required to undertake works in accordance with the identified mitigation and management measures.

Used together, the CEMP, strategies, procedures and SWMS form management guides that clearly identify required environmental management actions for reference by contractor personnel.

The review and document control processes for this plan are described in Section 10 of this WMP.

1.5. Hazardous Building Materials

A hazardous materials survey conducted by Douglas Partners in May 2017 identified the following (but not limited to) in relation to hazardous materials onsite:

- Asbestos Containing Materials (ACM) in the form of asbestos containing eaves, ceiling linings and gable verge linings, pipework in ceiling cavities, vinyl floor tiles, fibre cement debris in subfloor/ceiling voids and fibre cement packing materials in subfloor voids
- Synthetic Mineral Fibre (SMF) insulation materials in the form of loose fill and preformed batt insulation to cavities and roof/walls, suspended ceiling tiles, insulation to hot water pipes and various hot/boiling water units, insulation to air handling duct work and air conditioning plant
- Polychlorinated Biphenyls (PCBs) in the capacitors of fluorescent light/fan fittings
- Lead paints
- Elevated concentration of lead in dust in the older buildings (constructed around 1958) onsite
- Inaccessible areas should be assumed to contain hazardous building materials unless confirmed otherwise by a Competent Person.

Douglas Partners recommended that hazardous building materials be removed prior to any significant disturbance such as maintenance, refurbishment and demolition.

2. Purpose and Objectives

2.1. Purpose

The purpose of this plan is to describe how the client proposes to minimise the generation of waste, reduce the amount of waste for disposal, appropriately manage waste streams in accordance with legislation, policies and guidelines, and best practice during the proposed demolition, construction phases and ongoing operations at the site.

2.2. Objectives

The key objective of the WMP is to ensure that waste is minimised. To achieve this objective, the following will be undertaken:

- Ensure measures are identified and implemented to minimise and manage waste throughout the demolition, construction and operational phases of the project
- Ensure the preferred waste management hierarchy of avoidance, minimisation, reuse, recycling and finally disposal is followed
- Provide staff with an increased level of understanding and awareness of waste and resource use management issues
- Ensure appropriate measures are implemented to comply with relevant legislation and other requirements as described in Section 3.1 of this plan.

2.3. Targets

The following targets have been established for the management of waste during the project:

- Avoid the unnecessary production of waste where practical to do so
- Dispose of waste materials in accordance with legislative requirements
- Achieve the waste re-use / recycling targets specified in Appendix B for each waste stream.

3. Environmental Requirements

This chapter describes legislative, regulatory and guidance framework that applies to the Project.

3.1. Relevant Legislation and Guidelines

3.1.1. Legislation

Table 3-1 lists the principal legislation and regulations relevant to waste management.

Table 3-1: Principal legislation and regulation relevant to waste management

Legislation and regulation	Relevance
Environmental Planning and Assessment Act (Section 78A(8A)) *Environmental Planning and Assessment Regulation 2000 (Schedule 2)*	Secretary's Environmental Assessment Requirements have been prepared for the Project. The requirements outline the key issues that must be included in the EIS including waste management. Specifically, *17. Waste* *Identify, quantify and classify the likely waste streams to be generated during construction and operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.*
Protection of the Environment Operations Act 1997 (PEO Act)	Aims to reduce pollution and manage the storage, treatment and disposal of waste.
Protection of the Environment Operations (General) Regulation 2009	Contains penalty notice provisions for infringements of the Protection of the Environment Operations (Waste) Regulation 2005 (as amended) and the NSW PEO Act.
Protection of the Environment Operations (Waste) Regulation 2017	Provides regulations for the storage, management and transport of waste.
Waste Avoidance and Resource Recovery Act 2001 (WARR Act)	Supplementary legislation aimed at reducing waste and resource consumption, defining the waste hierarchy and promoting its adoption across NSW.
Environmentally Hazardous Chemicals Act 1985	Controls the movement, storage, and disposal of chemical waste. Administered by EPA and the Hazardous Chemicals Advisory Committee.

3.1.2. Policy/Strategy

Table 3-2 lists policies and strategies relevant to waste management

Table 3-2: Policies and strategies relevant to waste and energy management

Strategy	Relevance
Waste Avoidance and Resource Recovery Strategy (EPA, 2014)	Seeks to pave the way towards the targets waste reduction and materials reuse.

3.1.3. Guidelines and Standards

The main non-statutory guidelines, specifications and policy documents relevant to this plan include:

- Waste Classification Guidelines 2014 (NSW EPA Publication)
- Best Practice Waste Reduction Guidelines for the Demolition and Demolition Industry (tools for Practice), Natural Heritage Trust, 2000
- Waste Reduction and Purchasing Policy 2011-2014 (WRAPP), NSW Government
- Code of Practice for the Management and Control of Asbestos in Workplaces [NOHSC: 2018 (2005)]
- Code of Practice for the Safe Removal of Asbestos [NOHSC: 2002(2005)]
- Code of Practice for Synthetic Mineral Fibres [NOHSC: 2004(1990)]
- Code of Practice for the Safe Use of Synthetic Mineral Fibres [NOHSC: 2006 (1990)]
- Guidelines for Consultants Reporting on Contaminated Sites (NSW EPA, 2000)
- Australian Standard, Guide to Lead Paint Management, Part 2: Residential and Commercial Buildings (AS 4361.2 -1998)
- Identification of PCB-Containing Capacitors (ANZECC 1997)
- Guidelines on Resource Recovery Exemptions - Land Application of Waste Materials as Fill (2011, DECCW)
- Storing and Handling Liquids, Environmental Protection: Participants Manual (NSW DECC, 2007)
- Excavated Natural Material orders and resource recovery exemptions 2014 (NSW EPA, 2014)
- Excavated Public Road Material orders and resource recovery exemptions 2014 (NSW EPA, 2014)
- Raw Mulch orders and resource recovery exemptions 2014 (NSW EPA, 2014)
- Reclaimed Asphalt Pavement orders and resource recovery exemptions 2014 (NSW EPA, 2014).

4. Environmental Aspects and Impacts

4.1. Waste throughout Phases

4.1.1. Demolition

Table 4-1 outlines the major waste streams expected to be generated from the Project.

Table 4-1: Demolition waste streams.

Demolition activity	Waste type
Demolition	• Existing structures – bricks, tiles and porcelain, concrete and masonry, scrap metal, timber, wood waste, plasterboard, glass, plastics, wiring, cardboard and paper • Existing structures – hazardous materials: ACM, synthetic mineral fibres (SMF), lead contaminated waste (including lead paint systems and dust), light/fan fittings containing PCB capacitors (if any) • Road/driveway pavement – concrete, asphalt, gravel and road base • Redundant utilities
Excavation and earthworks	• Top soil –uncontaminated and contaminated with weeds • VENM/ENM • Unsuitable spoil • Potentially contaminated fill soils
Clearing and grubbing	• Green waste – timber, vegetation and weeds

4.1.2. Construction

Table 4-2 outlines the major waste streams through the construction phase of the Project.

- Packaging materials associated with items delivered to site such as pallets, crates, cartons, plastics and wrapping materials
- Wastes produced from the maintenance of various heavy construction equipment including liquid hazardous wastes from cleaning, repairing and maintenance
- Non-hazardous wastes would be generated through the use of worker's facilities such as toilets
- General wastes including office wastes, scrap materials and biodegradable wastes.

4.1.3. Operational

The principles of the WMP for the operational phase are described below.

General Strategy: The overall strategy is to provide a waste management system that:

Minimises the generation of waste through avoid-reduce-reuse-recycle policies;

- Will provide the opportunity to educate students in waste management and resource recovery, set an example
- Meets regulatory guidelines
- Is 'hands on' but safe, (students/staff segregate their wastes into different receptacles at source (where it is generated: yard, inside, office, workshops, tea rooms, …)

- Provides flexibility to be adapted to future developments in management practices (dedicated spaces rather than built in fixtures)
- Is cost effective.

System Components:

- Purchasing policies, education programs
- Internal Bins (eg. 30L) at source (two or three bin system for most areas, potentially more bins in kitchen and office areas)
- External Bins (240L) per area(s), inside Bin Enclosures
- Special Bins for special purposes (eg. workshop, kitchen, …)
- Bin Holding Areas, for the storage of full bins and "Stand-by Bins"
- Bin Collection Areas, where bins are collected during non-student times.

The Segregation and Collection Process:

- Waste is placed by staff/students into separate Internal Bins (paper/cardboard, other recyclables comingled, remaining general waste. Food waste from kitchens and generally may be collected separately once a separate food waste collection service is in place.
- From the Internal Bins the material is transferred to the 240L External Bins located in the assigned External Bin Enclosures by cleaning staff.
- On collection day full bins will be placed in the Collection Area (TBD) by cleaning staff from where they will be emptied by a suitable vehicle, outside student attendance times.
- The actual filling rates for all collection containers will be monitored, and appropriate bin numbers, volumes and collection frequencies will be adopted. It may be necessary to initiate additional, extraordinary collections to service extraordinary events held at the site.

Note: access to the collection areas has to be designed to allow commercial collection vehicles to enter and exit safely. It has been assumed that garbage collection would occur via the proposed new deliveries access road off Wonga Road to the rear of the site where a loading zone is proposed adjacent to the Design and Technology facilities.

4.2. Impacts

4.2.1. Demolition

The potential environmental impacts associated with demolition waste generation include:

- Generation of large volumes of building materials
- Inappropriate disposal of wastes
- Litter from work related activities and inappropriate disposal of domestic waste from demolition personnel
- Water pollution due to sediment runoff from soil excavation and excess spoil storage
- The mismanagement of waste streams has the potential to result in the following impacts
- Excessive waste being directed to landfill
- Various type of wast being generated and stored onsite, with the potential for misclassification
- Water pollution
- Land contamination
- Health risks to site personnel and future site users.

A full list of management measures is included in Section 6 of this Plan.

4.2.2. Construction

The potential environmental impacts associated with construction waste generation include:

- Generation of construction waste, such as excavated soil and rock
- Generation of vegetation waste from corridor clearing
- Generation of domestic waste from construction personnel
- Inappropriate disposal of hazardous waste
- Generation or spread of contaminated waste/soils, e.g. groundwater, used or expired chemicals, or construction materials
- Water pollution due to sediment runoff from soil excavation and excess spoil storage
- Weed infestation from dispersion of seeds and so forth during clearing and access upgrading activities.

4.2.3. Operational

The potential environmental impacts associated with operational waste generation include

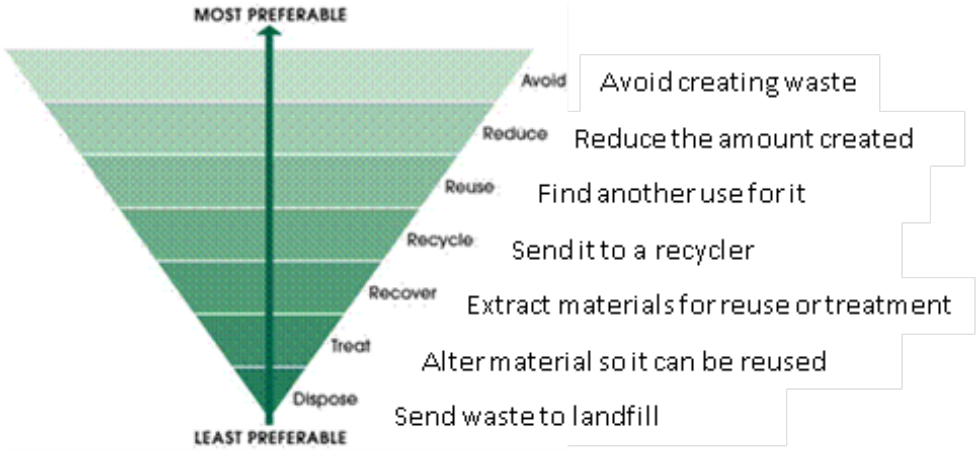
- Litter and waste spillage due to undersized bin infrastructure
- Poor recycle rates
- Cross contamination of recycled materials and non-recyclable wastes
- Waste services infrastructure not being compatible with waste vessels

5. Waste Management

5.1. Classification of Waste Streams

Figure 5.1 illustrates the waste hierarchy that should be followed to reduce the generation of waste and limit the amount of waste to disposal. Where waste cannot be avoided, reused or recycled it will be classified and appropriate disposal will then occur.

Figure 5.1: Waste hierarchy



The classification of waste is undertaken in accordance with the NSW EPA, Waste Classification Guidelines Part 1: Classifying Waste (2014). This document identifies six classes of waste: Special, Liquid, Hazardous, Restricted Solid, General Solid (putrescible) and General Solid (non-putrescible), and describes a six step process to classifying waste. That process is described below:

Step 1: Is it 'special waste'?

Establish if the waste should be classified as special waste. Special wastes are clinical and related, asbestos, waste tyres. Definitions are provided in the guidelines.

Asbestos and clinical wastes must be managed in accordance with the requirements of Clauses 42 and 43 of the Protection of the *Environment Operations (Waste) Regulation 2014.*

Step 2: If not special, is it 'liquid waste'?

If it is established that the waste is not special waste, it must be decided whether it is 'liquid waste'. Liquid waste means any waste that: has an angle of repose of less than 5° above horizontal becomes free-flowing at or below 60° Celsius or when it is transported is generally not capable of being picked up by a spade or shovel.

Liquid wastes are sub-classified into:

- Sewer and stormwater effluent
- Trackable liquid waste according to Protection of the Environment Operations (Waste) Regulation 2005 Schedule 1 Waste to which waste tracking requirements apply
- Non-trackable liquid waste.

Step 3: If not liquid, has the waste already been pre-classified by the NSW EPA?

The EPA has pre-classified several commonly generated wastes in the categories of hazardous, general solid waste (putrescibles) and general solid waste (non-putrescibles). If a waste is listed as 'pre-classified', no further assessment is required.

Step 4: If not pre-classified, is the waste hazardous?

If the waste is not special waste (other than asbestos waste), liquid waste or pre-classified, establish if it has certain hazardous characteristics and can therefore be classified as hazardous waste.

Hazardous waste includes items such as explosives, flammable solids, and substances liable to spontaneous combustion, oxidizing agents, toxic substances and corrosive substances.

Step 5: If the waste does not have hazardous characteristics, undertake chemical assessment to determine classification.

If the waste does not possess hazardous characteristics, it needs to be chemically assessed to determine whether it is hazardous, restricted solid or general solid waste (putrescible and non-putrescible). If the waste is not chemically assessed, it must be treated as hazardous.

Waste is assessed by comparing Specific Contaminant Concentrations (SCC) of each chemical contaminant, and where required the leachable concentration using the Toxicity Characteristics Leaching Procedure (TCLP), against Contaminant Thresholds (CT).

Step 6: Is the general solid waste putrescible or non-putrescible?

If the waste is chemically assessed as general solid waste, a further assessment is available to determine whether the waste is putrescible or non-putrescible. The assessment determines whether the waste is capable of significant biological transformation. If this assessment is not undertaken, the waste must be managed as general solid waste (putrescible).

5.2. Resource recovery orders and exemptions

Resource recovery orders include conditions which generators and processors of waste must meet to supply the waste material for the purposes described above. These conditions may include material specifications, processing specifications, record-keeping, reporting and other requirements.

Resource recovery exemptions contain the conditions which consumers must meet to use waste for the purposes described above. These conditions may include requirements on how to re-use or apply the waste, as well as record-keeping, reporting and other requirements..

The EPA has issued general exemptions for a range of commonly recovered, high volume and well characterised waste materials that allow their use as fill or fertiliser at unlicensed, off-site facilities. The general 'Resource Recovery Exemptions may be applicable to this work are defined in Table 5-1 below. These are general gazette exemptions that do not require approval. A specific exemption may be granted where an application is made to the EPA.

Table 5-1: Resource recovery exemptions

Exemption	General conditions
Excavated Natural Material Exemption 2014	At the time the excavated natural material is received at the premises, the material must meet all chemical and other material requirements for excavated natural material which are required on or before the supply of excavated natural material under 'the excavated natural material order 2014'. The excavated natural material can only be applied to land as engineering fill or for use in earthworks. The consumer must keep a written record of the following for a period of six years: • the quantity of any excavated natural material received • the name and address of the supplier of the excavated natural material received. The consumer must make any records required to be kept under this exemption available to authorised officers of the EPA on request. The consumer must ensure that any application of excavated natural material to land must occur within a reasonable period of time after its receipt.
Excavated Public Road Material Exemption 2014	The excavated public road material can only be applied to land within the road corridor for public related activities including road demolition, maintenance and installation of road infrastructure facilities. The excavated public road material can only be stored within the road corridor at the site where it is to be applied to land. The excavated public road material cannot be applied to private land. The consumer must ensure that any application of excavated public road material to land must occur within a reasonable period of time after its receipt
The recovered aggregate exemption 2014	This exemption applies to recovered aggregate that is, or is intended to be, applied to land for road making activities, building, landscaping and construction works. Recovered aggregate is a material comprising of concrete, brick, ceramics, natural rock and asphalt processed into an engineered material. This does not include refractory bricks or associated refractory materials, or asphalt that contains coal tar. The recovered aggregate can only be applied to land in road making activities, building, landscaping and construction works.

5.3. Classification of Potential Waste Streams

The demolition aspects and types of wastes that may be generated during demolition, are outlined and classified in Appendix B.

5.4. Reuse and Recycling

Waste separation and segregation will be promoted on-site to facilitate reuse and recycling as a priority of the waste management program as follows:

- Waste segregation onsite – Waste materials, including demolition waste and spoil, will be separated onsite into dedicated areas for collection by a waste contractor and transport to offsite facilities
- Waste separation offsite – where space is not available for separation onsite, the waste is to be sorted at a suitable offsite location by the waste contractor.

Where sections of the existing local roads are excavated, this material will be reused in accordance with the conditions attached to the general resource recovery exemption, Excavated Public Road Material Exemption 2014 (EPA, 2014). Where this material has not been subjected to potentially contaminating sources, it can be reused within the road corridor without further testing or any

specific licensing requirements. Where this material is suspected of being subject to contamination, testing and classification of this material will be undertaken.

Where materials cannot be reused and recycled, all waste would be handled and disposed in accordance with the PEO Act.

5.5. Waste Handling and Storage

Where waste is required to be handled and stored onsite prior to onsite reuse or offsite recycling/disposal, the following measures apply:

- All recyclable or non-recyclable wastes are to be suitably stockpiled in appropriate locations onsite and contractors commissioned to regularly remove the waste to approved disposal or recycling facilities.
- Spoil, topsoil and mulch are to be stockpiled onsite in allocated areas, where appropriate, and mitigation measures for dust control and surface water management will be implemented, including the Stockpile Management Protocol
- Liquid wastes are to be stored in appropriate containers in bunded areas until transported offsite. Bunded areas will have the capacity to hold 110 per cent of the liquid waste volume for bulk storage or 120 per cent of the volume of the largest container for smaller packaged storage
- Hazardous waste will be managed by appropriately qualified and licensed contractors, in accordance with the requirements of the *Environmentally Hazardous Chemicals Act 1985*, EPA waste disposal guidelines.

5.6. Waste Disposal

Waste (and spoil) disposal is to be in accordance with the PEO Act and the WARR Act. Wastes that are unable to be reused or recycled will be disposed of offsite to an EPA approved waste management facility following classification (refer to Section 5.1). Example locations of waste management / disposal facilities are included in Appendix A.

Details of waste types, volumes and destinations are to be recorded in the Waste Management Register (Appendix D).

Where possible wastes will be removed off-site to a recycling facility or will be disposed of at a licensed waste facility.

5.7. Vegetation Waste

Vegetation clearing that occurs during demolition works may generate a large amount of green waste, especially in areas where the establish trees encroach on the demolitions zones required. Large trees would be felled and mulched and where possible reused on site or transported to other sections of the Project. DoE will manage the quantities and reuse requirements of vegetation waste.

A hierarchy will be used to identify the most appropriate use for vegetation waste and reduce the need for transportation:

1. Vegetation would be mulched and re-used for revegetation and landscaping
2. Transported to nearby approved environmental recovery projects
3. Given to local councils and businesses.

6. Environmental Mitigation and Management Measures

A range of environmental requirements are identified in the various environmental documents, including the Local Environment Plan and from recent experience on similar residential and commercial demolition projects. Specific measures and requirements to address waste management and energy use issues are outlined in Table 6-1.

The responsibilities of the roles identified in Table 6-1 would be detailed in the Project CEMP.

Table 6-1: Management and mitigation measures

ID	Measure / Requirement	When to implement	Responsibility
GENERAL			
G1	The NSW Governments Waste Management Hierarchy of "avoid-reduce-reuse- recycle- dispose" would be followed as the framework of waste management throughout the project. The reuse and/or recycling of waste materials generated on site shall be maximised as far as practicable, to minimise the need for treatment or disposal of those materials off site.	Pre-demolition Demolition	DoE Environment Manager Project Contractor's Environmental Representative Project Contractor Project Engineer
G2	Relevant waste management measures from this WMP would be included in relevant Environmental Work Method Statements to be developed prior to the commencement of specific activities	Pre-demolition / Demolition	DoE Environment Manager Project Contractor's Environmental Representative
G3	All staff and subcontractors would undergo a site induction and ongoing toolbox talks that will detail waste minimisation and reuse management measures, including the requirements of the waste management hierarchy.	Demolition	DoE Environment Manager Project Contractor's Environmental Representative
G4	Sediment recovered from erosion and sediment control devices would be reused on site as general fill material or it will be incorporated within landscaping materials where possible and stabilised.	Demolition	DoE Supervisor Project Contractors Project Engineer/Foreman
G5	All waste material generated on-site (including chemical, fuel and lubricant containers, and solid and liquid waste) would be classified and disposed of in accordance with the *Protection of the Environment Operations Act* 1997 and *Waste Classification Guidelines* Part 1: Classifying Waste (DECCW, 2009), or any superseding document. Waste generated outside the site shall not be received at the site for storage, treatment, processing, reprocessing, or disposal on the site, except as expressly permitted by a licence or waste exemption under the *Protection of the Environment Operations Act 1997*, if such a licence is required in relation to that waste.	Demolition	DoE Supervisor Project Contractors Project Engineer Project Contractor's Environmental Representative
G6	Waste minimisation and management measures would be developed based on the principles in the *Waste Avoidance and Resource Recovery Act 2001*, the NSW Government's Waste Reduction and Purchasing Policy, and waste exemptions including: • Excavated Natural Material Exemption (EPA, 2014)). • Excavated Public Road Material Exemption (EPA, 2014)) • Raw Mulch Exemption (EPA, 2014) • Reclaimed Asphalt Pavement Exemption (EPA, 2014)	Pre-demolition / Demolition	DoE Environment Manager Project Contractors Project Engineer Project Contractor's Environmental Representative

ID	Measure / Requirement	When to implement	Responsibility
	• Recovered Aggregate Exemption (EPA, 2014) • Stormwater Exemption (EPA, 2014) Recycled material would be considered for use in all aspects of the project where feasible and reasonable and measures will seek to avoid, minimise, re-use, recycle, treat or dispose of waste streams during demolition and address transport and disposal arrangements.		
G7	Regular visual inspections would be conducted to ensure that work sites are kept tidy and to identify opportunities for reuse and recycling.	Demolition	DoE Supervisor Project Contractor's Environmental Representative Project Contractor Project Engineer/Foreman
G8	Water captured in excavations would be required to be either: • Managed in accordance with the demolition Soil and Water Management Plan • Transferred to a licensed sediment basin, treated and discharged in accordance with any licence conditions that apply to the discharge of water, or • Re-used for demolition water or dust suppression.	Demolition	DoE Supervisor Project Contractor's Environmental Representative Project Contractor Project Engineer/
G9	Topsoil (weed free) would be stockpiled in accordance with RMS criteria in allocated areas and reused for landscaping.	Demolition	Project Contractor's Environmental Representative Project Contractor Project Engineer/Foreman in consultation with DoE Package Engineer
G10	Any contaminated waste would be handled, separated, contained, managed and disposed of to prevent migration and further contamination.	Demolition	DoE Supervisor Project Contractor Project Engineer/Foreman Waste Contractor
G11	A waste register would be maintained, detailing types of waste collected, amounts, date/time and details of disposal.	Demolition	DoE Environment Manager Project Contractor Project Engineer/ Project Contractor's Environmental Representative Waste Contractor
G12	Waste would be managed and disposed of in accordance with the PoEO Act and the WRAPP. Wastes that are unable to be reused or recycled would be disposed of offsite at a licensed waste management facility, or premises lawfully permitted to accept the materials following classification.	Demolition	DoE Environment Manager Project Contractor Project Engineer/ Project Contractor's Environmental Representative Waste Contractor

ID	Measure / Requirement	When to implement	Responsibility
G13	Oils and other hazardous liquids would be labelled and stored in a sealed container within a bunded area. Material collected from within bunded areas will be disposed of offsite at an appropriately licenced waste facility	Demolition	DoE Environment Manager Project Contractor Project Engineer/ Project Contractor's Environmental Representative Waste Contractor
G14	The relevant licences of waste facilities utilised for the disposal of project waste would be obtained (on a regular basis if necessary) to ensure they are legally able to accept that waste.	Pre-demolition / Demolition	DoE Environment Manager Project Contractor Project Engineer/Project Contractor's Environmental Representative
G15	The disposal of chemical, fuel and lubricant containers, solid and liquid wastes must be in accordance with the requirements of the local Council or the EPA.	Demolition	DoE Planning and Approvals Leader Waste Contractor
G16	All trucks transporting wastes off site would be appropriately licensed to carry the materials to appropriately licensed waste facilities.	Demolition	DoE Planning and Approvals Leader Waste Contractor
G17	Procurement of materials will be planned and managed to avoid the over-ordering of products and minimise excess packaging is to be carried out.	Construction	Site Engineer / Foreman
G18	Cleared vegetation will be reused or recycled to the greatest extent practicable for example: • Mulching of vegetation for use in landscaping • Spreading of vegetation for fauna habitat in suitable areas where agreements are made for this (eg mulch, small timber, hollow logs) • Donation of other timber to community or environmental groups.	Construction	Environment Manager
G19	Weeds will be managed, handled and disposed of in accordance to The Weed Management Strategy (refer to the FFMP). If disposal is appropriate, the weed material will be transferred to a licensed waste facility.	Construction	Foreman
G20	Concrete, asphalt, bricks/masonry and steel products are to be reused on site where possible. Alternatively, they will be sent off-site for recycling.	Construction	Foreman
G21	All trucks transporting wastes off site will be appropriately licensed to carry the materials to appropriately licensed waste facilities.	Construction	Site Engineer / Foreman

7. Record Keeping Requirements

7.1. Asbestos Register

Any person with management or control of a facility/workplace must ensure an asbestos register is prepared and kept at the facility/workplace. The asbestos register must be maintained, to ensure the information in the register is up-to-date.

The Asbestos Register is a summary of the visual inspection carried out on a property. The register should contain the following information as a minimum:

- Section 1 – Working documents including a drawing, detailed location schedules with specific and general notes.
- Section 2 – Work Access Procedures – management forms which need to be completed when working with or exposed to Asbestos.
- Section 3 – A Hazard Management Plan.
- Section 4 – Asbestos training information.
- Section 5 – Reference to any applicable NSW state legislation and glossary of terms.
- Section 6 – Information on any sampling process, criteria and limitations of sampling and laboratory analysis.

Contractors should be aware that previously unidentified Asbestos Containing Materials (ACM) may be encountered in the building when carrying out demolition, excavation, building works, or accessing ceiling, confined spaces in inaccessible or inconspicuous areas.

Prior to demolition work starting, contractors must review the asbestos register for the site and ensure all asbestos that is likely to be disturbed is identified and removed so far as is reasonably practicable.

7.2. Offsite Waste Disposal Documentation

In accordance with the *Protection of the Environment Operations (Waste) Regulation 2005* the following records must be kept in relation to offsite waste disposal:

A consignor of waste must keep copies of each waste transport certificate, required to be completed by the consignor, for a period of at least 4 years.

A transporter of waste must retain copies of each waste transport certificate, required to be completed by the transporter, for a period of at least 6 years.

Each waste classification and authorised waste receiver document should also be retained as proof of appropriate offsite disposal of any waste from the site.

7.3. Hazardous Materials Register

Hazardous materials are not expected to remain onsite after the demolition works. However, if hazardous materials do remain onsite following the building demolition works, a hazardous materials register should be developed and maintained for the site. The register should detail the location and condition of all hazardous materials remaining at the site. Inspections should be conducted on a regular basis and the hazardous materials register updated accordingly.

Any works identified/required as a result of the inspections should be undertaken immediately. The hazardous materials register should be made available to any site occupant or contractor that may come into contact with hazardous materials remaining onsite.

8. Compliance Management

DoE will manage the environmental performance and compliance of the work by undertaking independent waste inspections and audits, and reviewing reports submitted by both the demolition contractors and waste contractors. DoE will report relevant government bodies as required, to provide evidence of the works compliance with legislative requirements, conditions of approval and standards and guidelines.

8.1. Roles and Responsibilities

The organisational structure and overall roles and responsibilities for DoE would be outlined in relevant sections of the project CEMP. Specific responsibilities for the implementation of environmental controls are detailed in Chapter 6 of this plan.

8.2. Procurement of Waste Contractors

DoE will engage waste contractors to manage the collection, recycling or disposal of waste that cannot be reused onsite. A number of different waste contractors will be required to appropriately manage the different waste streams generated onsite. To ensure the selection of reliable and experienced contractors, DoE will request the following information that will be included in any contract information:

- Experience
- Historical performance with each waste stream and similar projects
- Any non-conformance notices or environmental offences, penalties or notices
- Copies of licenses and permits for handling, transporting and disposing waste
- Management systems and policies (health and safety, environment and sustainability)
- Proof of compliance with legislation and guidelines
- Cost for collection, processing and recycling/disposal
- Destination of each waste stream
- Processing techniques
- Expected recovery rates of each waste streams.

Project Contractors will be required to submit their own Environmental Management Plan (Project Contractors EMP) which will be required to include waste, resource and energy management and mitigation measures for their works. They will only be required to submit a plan tailored to their works that will include specific mitigations from this management plan pertinent to the subset of works that they will be carrying out for the project.

The submission of the Project Contractors EMP will be a hold point prior to the commencement of any works onsite.

8.3. Training

The Project Contractors will carry out regular monitoring and inspections. DoE will also conduct independent inspections to confirm the contractor's compliance with waste management requirements.

Table 8-1 outlines the monitoring and inspection activities that will be undertaken during demolition by waste contractors, demolition contractors and DoE.

Table 8-1: Program for monitoring and inspections during construction.

Item	Frequency
DoE	
Undertake weekly waste inspections and record on the environment checklist	Weekly
Carry out waste management audits to assess extent of waste hierarchy. This should be undertaken at fortnightly intervals during the demolition stage of the work and will be used to assess compliance with waste targets / performance criteria	Fortnightly
Keep records of waste contractors and landfill facilities used to ensure waste management can be traced from cradle to grave	Monthly
Verify licences and permits for handling, transporting and disposal of wastes	Provision of waste contractor agreement
Collate Project Contractor waste disposal data and maintain the project waste register.	Report monthly
Project Contractor	
Undertake weekly waste inspections and record on the environment checklist	Weekly
Maintain and document the types and volumes of wastes generated, re-used, recycled and disposed of	Daily/ as required
Document the locations of stockpiled and stored waste	Daily/ as required
A Waste Management Register of all waste collected for disposal and/or recycling will be maintained on a monthly basis until final completion	Monthly
Waste Contractor	
Maintain and document the types and volumes of wastes collected recycled and disposed of. Provide monthly reports on waste removal and disposal activities.	When waste is collected and report on a monthly basis

8.4. Auditing

Audits will be undertaken by DoE and third party external auditors to assess the effectiveness of environmental mitigation and management measures, compliance with this plan, and other relevant approvals, licenses and guidelines.

8.5. Reporting

Waste contractors and demolition contractors will report regularly to DoE on their waste management practices. DoE will review these reports; compare results between the various entities, and any data collected by DoE personnel. DoE will then relay the required information in the form of regular reporting to stakeholders as required. Table 8-2 outlines the reporting requirements for waste contractors, demolition contractors and DoE.

Table 8-2: Reporting requirements for waste contractors, demolition contractors and DoE

Item	Frequency
Demolition Contractor	
Monthly waste register provided to DoE (Appendix D)	Monthly
Waste Contractor	
Monthly service provider waste reports provided to DoE (Appendix C)	Monthly

9. Contingency Planning

9.1. Handling of Unexpected Finds

Appropriate professional advice should be sought immediately, should previously unidentified waste/materials of a suspected harmful or contaminating nature be identified during site demolition works.

10. Review and Improvement

10.1. Continuous Improvement

DoE will review waste reports submitted by the demolition contractor and waste contractors and identify areas for improvement. DoE, in consultation with contractors, will evaluate the project's environmental management performance against environmental policies, objectives and targets for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of environmental management and performance
- Determine the cause or causes of non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets.

Appendix A Example Locations of Waste Facilities

Local Government Area	Facility Name	Waste Type	Contact Details
Camden Council	SUEZ Spring Farm Resource Recovery Park	• Building materials • Batteries (only vehicles batteries – lead acid batteries) • Paint/oil (waste motor oil up to 20L per customer) • Cardboard • E-waste • Glass • Garden waste • Mattresses • Metal • Food waste • Paper • Plastic • White goods • Wood • Tyres • Rubber	275 Richardson Road, Spring Farm NSW 2570 1300 651 116
Wollondilly Shire Council	Bargo Waste Management Facility	Commercial • Garden Organics • Bricks • Ceramics • Concrete • Soil/clay – VENM & ENM • Timber - Untreated	Anthony Road, Bargo NSW 2574 0419 490 599

Appendix B Demolition Waste Management Strategy

Materials On site		Waste Classification	Destination		
Indicative total only			Reuse and Recycling		Disposal
Type of Material	Estimated Qty [m^2]		ON-SITE	OFF-SITE	
Bricks (external and internal)	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Bricks would be recycled offsite Contractor: TBA Facility: TBA	Nil to landfill
Tiles and Porcelain (toilets, urinals, sinks, walls and other various tiled areas)	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Concrete that cannot be reused on site will be recycled off-site. Contractor: TBA Facility: TBA	Nil to landfill
Concrete, Masonry (Internal walls, stairs, and other concreted areas)	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	Concrete may be re-used as drainage fill on site where possible	Concrete that cannot be reused on site will be recycled off-site. Contractor: TBA Facility: TBA	Nil to landfill
Timber - plywood, stud walls, battens, skirting, doors, stairs etc.	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Timber will be transported to a timber recycling yard where possible. Contractor: TBA Facility: TBA	Timber that cannot be recycled will be disposed at an appropriate waste facility Contractor: TBA Facility: TBA
Plasterboard (Various internal areas)	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Clean plaster board will be transported to a soil conditioning yard where possible. Contractor: TBA Facility: TBA	Plaster Board that cannot be recycled will be disposed at an appropriate waste facility Contractor: TBA Facility: TBA

Materials On site		Waste Classification	Destination		
Metals	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	All steel materials will be separated transported to a metal recycling yard Contractor: TBA Facility: TBA	Nil to landfill
Asbestos Containing Material (ACM)	TBC (by Quantity Surveyor / Demolition contractor)	Special Waste	NA	NA	To be disposed of at appropriate licensed waste facility Contractor: TBA Facility: TBA
Lead Contaminated Wastes (including lead paint)	TBC (by Quantity Surveyor / Demolition contractor)	Special Waste	NA	NA	To be disposed of at appropriate licenced waste facility. Contractor: TBA Facility: TBA
Light fittings containing PCB capacitors (if any)	TBC (by Quantity Surveyor / Demolition contractor)	Special Waste	NA	NA	To be disposed of at appropriate licensed waste facility Contractor: TBA Facility: TBA
Synthetic Mineral Fibres (SMF)	TBC (by Quantity Surveyor / Demolition contractor)		NA	NA	To be disposed of at appropriate licensed waste facility Contractor: TBA Facility: TBA

Materials On site		Waste Classification	Destination		
Glass	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Glass will be segregated from other material where possible, and recycled. Contractor: TBA Facility: TBA	Nil to landfill
Plastics, PVC tubing, electrical wiring etc.	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Such materials will be segregated from other material where possible, and recycled. Contractor: TBA Facility: TBA	Material that cannot be recycled will be disposed at an appropriate waste facility Contractor: TBA Facility: TBA
Cardboard/Paper	TBC (by Quantity Surveyor / Demolition contractor)	General solid waste (non-putrescible)	NA	Cardboard will be segregated from other material and recycled where possible. Contractor: TBA Facility: TBA	Cardboard that cannot be recycled will be disposed at an appropriate waste facility Contractor: TBA Facility: TBA

Appendix C Example Waste Service Provider Report

Monthly waste service provider report											
Waste Service Provider Name:											
Reporting Period:											
Report Prepared By:											
Date / Time	Description of waste (e.g. concrete, asphalt, vegetation)	Waste Classification	Type (skip, front lift, wheelie bin, pump out)	Container Size (M^3 or Lt)	Number of containers	Amount of spoil or waste collected		Quantity to be recycled	Quantity to be sent to landfill for disposal	Facility to receive	Invoice No / Tip Docket Ref
						Weight (tonnes)	Total Volume (m^3)				

Appendix D Example Waste Management Register for Demolition Contractor

Waste management register for demolition contractor

Date / Time	Description of waste (e.g. concrete, asphalt, vegetation)	Waste Classification	Type (skip, front lift, wheelie bin, pump out)	Container Size (M^3 or Lt)	Number of containers	Amount of spoil or waste collected		Quantity reuse on site	Quantity sent for recycling	Quantity sent to landfill for disposal	Transporter	Facility to receive	Invoice No / Tip Docket Ref
						Weight (tonnes)	Volume (m^3)						