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Wyong Hospital Expansion Stage 3

Review of Environmental Factors

Construction Waste Management Plan

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1 Introduction

This Construction Waste Management Plan (CWMP) report has been prepared by Waste Audit & Consultancy Services for Colliers International Project Management and Health Infrastructure NSW for the Wyong Hospital Redevelopment Stage 3 Refurbishment project located at 664 Pacific Highway, Hamlyn Terrace, NSW.

This CWMP report provides details of predicted general waste and recycling generation generated during the project's construction phase; equipment and storage requirements; recommended resource management systems; staff education programs; and waste contractor standards.

We would like to thank all those whose knowledge and insights contributed towards production of this report.

2 Project Overview

The Wyong Hospital Redevelopment Stage 3 Refurbishment works comprises adaptive reuse of the existing decanted spaces within both blocks B and C.

- Block B will be refurbished to accommodate the following departments:
 - Nunyara Aboriginal Health Unit
 - Wyong Women's Centre Clinics
 - Medical Staff Workspace
 - New South Wales Health Pathology
- Block C will be refurbished to accommodate the following departments:
 - Expanded Cancer Day Unit
 - Carer Support Unit

3 Key Legislation, Standards & Guidelines

This Waste Management Plan has been prepared in accordance with the requirements of the following legislation, standards, and guidelines:

- NSW EPA *Protection of the Environment Operations Act 1997 and Amendment Act 2011, and Protection of the Environment Operations (Waste) Regulation 2014, Part 11*
- NSW Health *Clinical and Related Waste Management for Health Services Policy*, August 2017
- Australian Government Department of Environment, Climate Change and Water *Waste Classification Guideline 2009*
- Australian Standards for Clinical Waste Management and Sharps Management (AS3816, AS4031 and AS 4939)
- Waste Management Association of Australia, *Biohazardous Waste Industry Group, Manual for the Management of Biohazardous Waste*, 7th edition, 2014
- Safe Work Australia July 2012 *Construction Work Code of Practice*.

4 Waste Generated from Construction

Table 1 lists expected materials types, estimated volumes, and recommended treatment processes. The nominated construction contractor will be responsible for keeping detailed records of materials disposed of, recycled, or reused.

Construction waste materials will be combined in mixed content skips and sent to a licensed recycling facility for processing. Detailed estimates of materials generated, and processing facility details, will be specified once the lead contractor has been appointed for the project.

5 Objectives & Targets

The project's waste management objectives will include:

- Meeting all waste management standards while ensuring the health and safety of workers on the project
- Maximising diversion from landfill by reusing, recycling and reprocessing on and off-site
- Disposal of no more than 20% of residual waste materials to a licensed landfill in accordance with both regulatory and legal requirements
- The diversion from landfill of 80% of construction waste by weight, to meet the criteria of the NSW State Government's waste legislation, policy settings and regulatory regime

Management strategies and responsibilities for ensuring these objectives are achieved are detailed in Section 6.

6 Management Strategies

The following will operate over the design, procurement, and construction/fitout stages:

Table 1: Management Strategies

Management Strategies	Responsibilities
Design: Use of modular components in design Use of prefabricated components in design Design for materials to standard sizes Design for operational waste minimisation	Architect & Engineer Architect, Builder, Subcontractors Architect, Subcontractors Architect & Builder
Procurement: Select recycled and reprocessed materials Select components that are reusable after deconstruction	Architect, Engineer, Builder, Subcontractors Architect, Engineer & Builder
Construction On-Site: Use the waste hierarchy principles of avoidance, reuse, reduction, and recycling Minimisation of recurring packaging materials Returning packaging to the supplier Separation and recycling of materials off site Monitor and audit correct usage of bins Monitor and audit waste contractor(s)	Builder & Waste Contractor Subcontractors Builder & Subcontractors Waste Contractor Builder & Waste Contractor Builder

7 Construction Waste Volumes

To calculate construction waste volumes, we have used standard Green Building Council Australia (GBCA) calculations of 5 kilograms of waste (of all kinds) per square metre of constructed area and reduced this to 2 kilograms per square metre to reflect the type of construction work taking place (adaptive reuse/refurbishment rather than new build), and varying levels of refurbishment (light, medium, medium/heavy, and heavy).

The total development floorspace used in our calculations is 3,999 square metres. Applying the 2 kilograms per square metre figure to this area produces a figure of 7,998 kg, which is then subdivided into the different types of waste typically produced from construction activities. Estimated weights and volumes of these materials are shown in Table 2 and include materials generated from deliveries, such as pallets, pallet wrap, cardboard packaging, and general waste and recyclables disposed of by contractor staff.

Specific disposal/recycling facilities have not been shown, as waste removal contractors have not yet been appointed at this stage of the project.

Table 2: Construction Waste - Expected Materials Streams

Type of Material	Estimated m ³	Estimated kg	Destination		
			Onsite (Reuse/Recycle)	Offsite (Reuse/Recycle)	Disposal (Landfill)
Pallets	16.0	1,600	Possible onsite reuse for covering building materials	Taken to recycling facility by waste contractor and processed for off-site resource recovery	No disposal to landfill
Cardboard Packaging	12.0	1,200	Reuse on site for materials storage		
Soft Plastics (pallet wrapping etc.)	8.0	400	Reuse cardboard boxes for storage where possible		
Plasterboard	5.3	800	No on-site reuse/recycling		
Floor Coverings	3.7	560	No on-site reuse/recycling		
Metal Offcuts, Wiring, etc.	2.4	480	No on-site reuse/recycling		
Timber Offcuts	2.9	1,440	Reuse for formwork where possible		
Concrete	0.6	800	No on-site reuse/recycling		
Glass (Excess)	0.3	160	No on-site reuse/recycling		
General Waste	8.0	560	No on-site reuse or recycling	Disposed of on-site in separate bins and collected by waste contractor for disposal to landfill	Disposal to landfill
TOTAL MATERIALS GENERATED	59.2 m³	7,998 kg	The development's construction stage will produce around 59.2 m ³ or 7,998 kg of waste materials, of which 51.2 m³ or 7,438 kg can potentially be diverted from landfill and recovered for on-site and/or off-site reuse/ reprocessing and resource recovery at licensed facilities.		
TOTAL MATERIALS RECOVERED	51.2 m³ (86.5%)	7,438 kg (93.0%)			

No hazardous materials or wastewater are expected to be generated during construction, based on the nature and extent of the works that will be undertaken.

In the unlikely event that any such materials are encountered or identified during refurbishment of Blocks B and C, these materials will be managed according to standard best practices for isolation, removal, and treatment of such materials as detailed in Safe Work Australia's July 2012 *Construction Work Code of Practice*.

Further guidance from NSW Health regarding specific materials and their management can be found at: <https://www.health.nsw.gov.au/environment/diy/Pages/building-hazards.aspx>.

8 Risk Management & Reporting

Construction contractors will be required to provide monthly reports to Health Infrastructure NSW on waste reused, re-processed/ recycled, and sent to landfill.

All reports will include the following information:

- Date and time material removed
- Material type and amount (in kg and/or cubic metres)
- Processing facility material taken to
- Processing facility licensing information
- Vehicle registration and waste contractor's company details

9 Material Separation & Collection

All materials will be classified in accordance with the NSW *Protection of the Environment Operations Act 1997* and the *Waste Classification Guidelines Part 1: Classifying Waste* before their removal from the site.

The materials listed in Table 2 will be collected in the following bin types, with exact sizing to be confirmed prior to commencement of construction works:

- Concrete - 1 cubic metre capacity bins
- Metals - 1-3 cubic metre capacity bin
- All other materials - 8 cubic metre mixed content bins

All materials will be taken to appropriately licenced facilities for reprocessing by a qualified and licenced waste contractor. This includes mixed content bins, which will be sorted into their component materials at the contractor's processing facility/facilities.

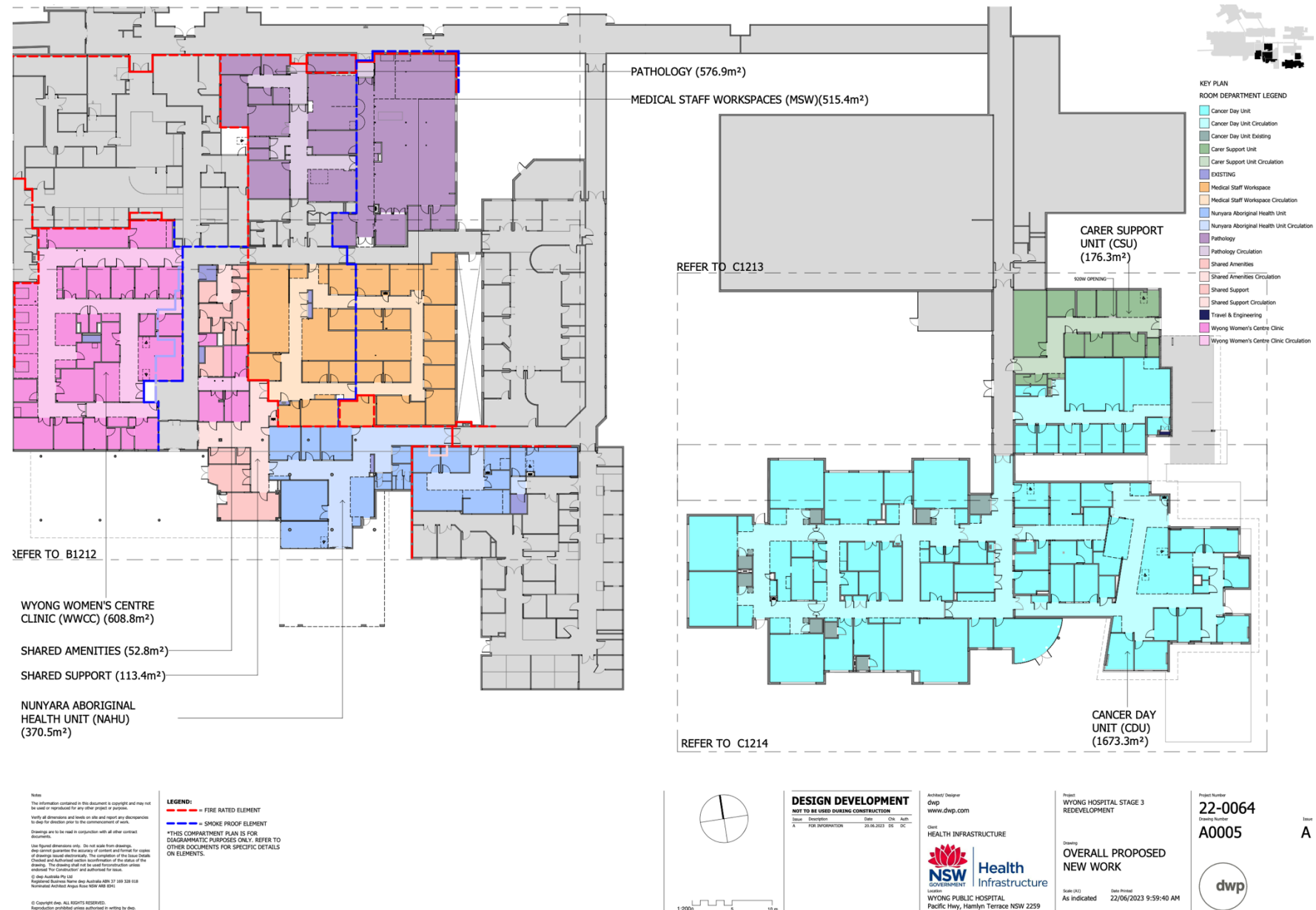
Once the development's head contractor for the construction phase has been appointed, the relevant authorities will be notified of the waste contractor and processing facilities to be used.

Construction works will take place in conformance with EPA NSW's time restrictions for waste collection, which are, typically:

- Monday-Friday 6:00 am to 6:00 pm
- Saturday 7:00 am to 1:00 pm

The expected locations of construction waste bins on the site are shown in Appendix 2.

Appendix 1: Scope of Proposed Refurbishment Works



Appendix 2: Construction Waste Bin Locations

Construction waste bins are shown in red adjacent to the roadway immediately south of Building C.

