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Construction Waste Management Plan

Cessnock Hospital Redevelopment
Health Infrastructure and Hunter New England LHD

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Health Infrastructure and Hunter New England LHD

Cessnock Hospital Redevelopment

1 Introduction

1.1 Purpose

This Construction Waste Management Plan has been prepared by Turner and Townsend on behalf of Health Infrastructure to assess the potential environmental impacts that could arise from the redevelopment of the Cessnock Hospital health service at 24 View Street, Cessnock.

This report has been prepared to provide information for the construction phase of the development and will also be required to be updated by appropriate contractors during the construction stage.

It outlines the objectives, strategies, and guidelines for managing waste during the construction phase, including waste classification, handling procedures, and compliance with relevant regulations to minimize environmental impact.

The objectives and plan for the waste management during the construction of Cessnock Hospital

This report accompanies a Review of Environment Factors that seeks approval for the construction and operation of a new two-storey clinical services building and refurbishment works including:

- Demolition of select existing structures
- Construction of a new hospital building on the site's northern portion
- Realignment of internal roads and a new primary vehicular and pedestrian entrance to the hospital campus from Jurd Street
- Refurbishment of the existing at-grade car park
- Installation and realignment of selected services
- Installation of ancillary development including, but not limited to, lighting and signage.
- Landscaping.

For a detailed project description, refer to the Review of Environmental Factors prepared by Ethos Urban.

1.2 Project Overview

The Cessnock Hospital is a district level hospital within the Hunter New England Local Health District. It provides low acuity medical and sub-acute services to the local community and is networked with Maitland Hospital for higher acuity services, and John Hunter Hospital for Tertiary level services.

The clinical services provided by the project will be generally consistent with what is currently being provided at the Hospital, except changes in services where network efficiencies are identified.

The project scope includes the following clinical services:

- Emergency Department (ED)
- Medical Imaging
- Perioperative Suite
- Sterilizing Services Unit (SSU)
- 2 x 28 Bed Inpatient Units (IPUs)

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- Pharmacy
- Mortuary
- Front of House (FOH) services

The overall project scope also includes the following:

- Demolition of select existing structures.
- In-ground infrastructure and enabling works
- A new acute services building containing the above clinical services
- A new primary vehicular and pedestrian entrance to the hospital campus from Jurd Street
- New vehicular drop-off
- Refurbishment of the existing on-grade car park
- A new connection between the new hospital building and the existing
- Landscaping.

1.3 Location

The site is located at 24 View Street, Cessnock, in the Cessnock Local Government Area. It is occupied by Cessnock Hospital health service, a district-level hospital in the Hunter New England Local Health District. The site comprises the following lots.

- Lot 2 DP1173784
- Lot 7 DP13203
- Lot 8 DP13203
- Lot 1 DP103663
- Lot 10 DP5442
- Lot B DP103664
- Lot 2 Section 20 DP5442
- Lot 1 DP254743
- Lot 11 DP882585

An aerial image of the site is shown at **Figure 1**

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Figure 1: Site Aerial. Source: Nearmap

1.4 Statement of Significance

Based on the identification of potential issues and an assessment of the nature and extent of the impacts of the proposed development, it is determined that:

- The extent and nature of potential impacts are low and will not have significant adverse effects on the locality, community, and the environment.
- Potential impacts can be appropriately mitigated or managed to ensure that there is minimal effect on the locality, community.

1.5 Mitigation measures

Project Stage	Mitigation Measures	Relevant Section of Report
Design (D)	Implement efficient material use practices, accurate ordering, and careful handling	Section 2.1
Construction (C)	Establish on-site recycling stations and partner with local recycling facilities	Section 3.1
Construction (C)	Regularly review and update the CWMP to align with the latest regulations	Section 2.1
Operation (O)	Use eco-friendly materials, reduce energy consumption, and implement water-saving measures	Section 2.1
All Stages	Provide comprehensive waste management training to the project workforce in alignment with the measures and recommendations made in this plan	Section 2.1

Table 1: Mitigation measures

2 Waste Management Objectives and Guidelines

The Objectives of the CWMP include:

- Minimize Waste Generation:

Goal: Reduce overall waste generation by 20% compared to similar projects.

Strategy: Implement efficient material use practices, accurate ordering, and careful handling of materials to minimize waste.

- Maximize Recycling and Reuse:

Goal: Divert at least 75% of construction and demolition waste from landfills through recycling and reuse.

Strategy: Establish on-site recycling stations and partner with local recycling facilities to process materials such as concrete, metals, timber, and plastics.

- Ensure Compliance with Regulations:

Goal: Achieve 100% compliance with all relevant local, state, and federal waste management regulations.

Strategy: Regularly review and update the CWMP to align with the latest regulations and guidelines. Conduct compliance audits and obtain necessary permits.

- Promote Sustainable Practices:

Goal: Incorporate sustainable construction practices to reduce environmental impact.

Strategy: Use eco-friendly materials, reduce energy consumption, and implement water-saving measures on-site.

- Enhance Worker Training and Awareness:

Goal: Provide comprehensive waste management training to 100% of the project workforce.

Strategy: Develop and deliver training programs on waste segregation, handling procedures, and the importance of recycling and reuse. Conduct regular refresher courses.

- Monitor and Report Progress:

Goal: Establish a robust monitoring and reporting system to track waste management activities and progress towards goals.

Strategy: Implement a tracking system for waste generation, handling, and disposal. Prepare monthly reports on waste management activities and share them with stakeholders.

2.1 Key Legislation and Guidelines

Relevant key legislation and guidelines applicable to the project include:

- Protection of the Environment Operations Act 1997
- Protection of the Environment (General) Operations Act 1998
- Waste Avoidance and Resource Recovery Act 2014
- Protection of the Environment Operations (Waste) Regulation 2014
- Waste Classification Guidelines (EPA, 2014)
- State Environmental Planning Policy (Infrastructure) 2007
- Part C5 - Waste Management & Minimisation of the Cessnock Development Control Plan 2010

3 Waste Classification and Handling

3.1 Waste Classification and Handling

Waste Type	Sources	Handling Procedures
Concrete and Masonry	Demolition of existing structures, concrete formwork, excess concrete from pours	Segregate for recycling. Use designated bins or areas for collection.
Timber	Off-cuts from framing, formwork, temporary structures	Separate untreated timber for reuse or recycling. Dispose of treated timber according to local regulations.
Metals	Structural steel, rebar, metal studs, plumbing and electrical off-cuts	Collect in designated bins for recycling. Separate different types of metals (e.g., steel, aluminium, copper).
Plastics	Packaging materials, plastic piping, insulation	Segregate for recycling. Clean and compact large plastic items to save space.
Gypsum (Drywall)	Off-cuts from drywall installation, demolition of existing walls	Collect in designated bins. Recycle where possible or dispose of in accordance with local regulations.
Hazardous Materials	Asbestos, lead-based paints, chemicals, contaminated soil	Identify and segregate. Use appropriate containment and disposal methods as per NSW EPA guidelines. Ensure all personnel handling hazardous waste are trained and equipped with proper PPE.

Table 2: Waste Classification and Handling

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3.2 Site Specific Waste Management

Quantities of waste likely to be generated can be calculated based on benchmarks provided by the UK Building Research Establishment (See Table 1).

Project Type	Average volume (m3) of waste per 100m2
Residential	18.1
Public buildings	20.9
Leisure	14.4
Industrial Buildings	13.0
Healthcare	19.1
Education	20.7
Commercial other	17.4
Commercial Offices	19.8
Commercial Retail	20.9

Table 3: Average Volume of Waste Produced by Different Project Types. Source: BRE (2012)

If the average volumes in Table 2 are then cross referenced against ratios of likely waste streams provided by the Sustainability Victoria Waste Wise Tool Kit (2013) in Table 3 we can estimate the likely waste streams and quantities for the project.

Material	Estimated Waste %	Conversion Factor (Density) (Tonne per m3)
Hard material	32%	1.2
Timber	24%	0.3
Plastics	15%	0.13
Cement sheet	9%	0.5
Gypsum material	6%	0.2
Metals	6%	0.9
Paper/Card	4%	0.1
Vegetation	3%	0.15
Soil	1%	1.6
Other	0.3%	0.3

Table 4: Guideline to Waste Composition and Volumes - Construction

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In Table 4, we have cross referenced the area of the project with Tables 1 & 2 to provide the estimate of total quantity of waste for the project.

Material	Average Volume/ 100m ²	Total (m ³)	Total (t)
Hard Materials (32%)	6.10	409	490
Timber (24%)	4.60	308	92
Plastic (15%)	2.90	194	25
Cement Sheet (9%)	1.70	114	57
Gypsum Material (6%)	1.10	74	15
Metals (6%)	1.10	74	66
Paper/ Card (4%)	0.80	54	5
Vegetation (3%)	0.60	40	6
Soil (1%)	0.20	13	21
Other (0.3%)	0.03	2	1
Total Waste	19.10	1,280	780

Table 5: Likely Waste Quantities During Construction of Cessnock Hospital

Waste generated during the construction stage of the development will be managed by the principal contractor and sub-contractors, with materials being reused and recycled wherever possible. Where neither reuse nor recycling are possible, waste will be disposed at a licensed landfill site or facilities authorised to accept such waste.

Recyclable material generated during construction will largely consist of off-cuts and discarded bricks, timber, steel, concrete, tiles, plasterboard, and piping, as well as packaging materials.

It is important to note that source separation of waste on-site may offer cost savings when compared to the disposal of mixed waste at landfill sites. Further cost savings may be achieved through the use of reusable and recycled-content materials and by reusing materials salvaged from the demolition stage of the development.

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3.3 Management Strategies

Parameter	Action	Timing	Responsibility
Induction	During inductions, all personnel are to be made aware of individual responsibilities regarding waste management, including proper disposal of personal and construction rubbish in designated facilities.	Establishment	All subcontractors
Waste Reduction	Design in waste minimisation during the design phases by standard sizing of materials, using modular and prefabricated construction techniques. Stockpile clean fill during excavation for use as backfill on-site. Provide subcontractors with guidance for reducing packaging by accurate ordering and handling of materials. Specify reusable, stackable, and returnable packaging.	Establishment / Construction	Builder, Consultants, and Subcontractors
Waste Disposal Storage Area	Appropriate waste disposal facilities (e.g., bins) shall be provided in strategic locations onsite. Waste bins shall be located to avoid affecting the community and not close to surrounding premises. Separation of waste for recycling will be enforced and monitored. Waste disposal facilities shall be regularly collected or emptied by a licensed waste collector in accordance with Local Council Health Laws. Where possible, a storage area for the separation, collection, and recycling of wastes will be established.	Establishment / Construction	Builder
Waste Contractors	Licensed contractors shall be engaged to remove construction waste. A minimum target of 75% landfill waste diversion will be achieved.	Establishment	Builder
Putrescibles Waste (Organic Waste)	All putrescibles waste to be placed in a lidded bin and removed separately.	Establishment	Builder
Recycling / Waste Reduction	Waste contractors will collect the waste in a single stream (or two or three if separated on-site) and sort the waste at their processing yard. All waste stream quantities removed from the site will be tracked, including disposal dockets from licensed waste management facilities, and reported monthly. Reporting will detail the quantities of each waste type generated during construction. Cleared vegetation needs to be chipped for re-use on-site for ground stabilization and erosion control.	Establishment / Construction	Builder / All subcontractors

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Site Office	The site office shall implement the following waste minimisation techniques: Organising recycling paper bins, recycling toner cartridges, using electronic storage to reduce paper use, and purchasing products in bulk to reduce packaging.	Establishment	Builder
Hazardous Waste	Hazardous waste will be managed and disposed of as per Safety Data Sheet requirements and Environmental Protection (Controlled Waste) Regulations 2004. A site-specific Contamination Management Plan will be developed, including methods for containing air-borne fibre emissions (e.g., dust suppression of asbestos-contaminated soils). All hazardous waste will be disposed of at approved waste facilities in accordance with relevant legislation.	Construction	Builder / All subcontractors
Material Tracking Plan	A site-specific Material Tracking Plan will be developed to track all material from source to final placement, including interim movements, material descriptions, volumes, dates, and locations/movements. Material will be verified as uncontaminated.	Construction	Builder / Civil subcontractor
Servicing	Where practicable, plant will be serviced offsite to reduce the generation of hydrocarbon waste onsite and potential for spills.	Construction	All Subcontractors

Table 6: Management Strategies

3.4 Monitoring and Reporting

Type of Monitoring / Reporting	Timing	Responsibility	Record
Contaminated Material Notice	As required	Builder	Incident notification form
Percentage of diversion from landfill	Monthly	Builder	Monthly Waste Report
Health Infrastructure progress report	Every 2 months	Builder	Progress Waste Recycling and Purchasing Report
Health Infrastructure summary report	Before Completion	Builder	Summary Waste Recycling and Purchasing Report
Segregated waste and appropriate waste placement	Weekly	Builder	Environmental Site Inspection

Table 7: Monitoring and reporting