

Operational Waste Management Plan (Preliminary)

Cowra Hospital Redevelopment

Rev_0

Project No. 22-1383

CWPM, on behalf of

NSW Health Infrastructure

22 December 2022





Encycle Consulting Pty Ltd

ABN 41 129 141 484

PO Box 6044

East Perth WA 6892

t: +61 8 9444 7668

www.encycle.com.au

dladle@encycle.com.au

Revision	Drafted by	Reviewed by	Date issued
Rev_0	D Ladle	J Campbell	21 December 2022

Copyright

All intellectual property rights and copyright associated with Encycle Consulting services and publications shall remain vested in and the property of Encycle Consulting. Advice and material contained within this document may be used exclusively by the Company named as the recipient of this work solely for use as specified in this document. Reproduction, publication or distribution of this work without prior written permission from Encycle Consulting is strictly prohibited.

Disclaimer

While steps have been taken to ensure the accuracy of this document, Encycle Consulting cannot accept responsibility or be held liable to any person for any loss or damage arising out of or in connection with this information being accurate, incomplete or misleading.

Table of contents

1	Introduction	4
1.1	Review of Environmental Factors	5
1.2	Context	6
2	Description of the redevelopment at Cowra Hospital	7
3	Waste management principles	10
4	Operational Waste Management Plan.....	12
4.1	Waste streams	12
4.2	Estimated waste and recycling generation.....	12
4.2.1	Dirty utility rooms.....	14
5	Bin store and collection area	18
5.1	Bin store amenity.....	18
6	Internal transfer	21
6.1	Clinical waste transfer	21
7	Collection and vehicle access	23
8	Ongoing communication and management	24
8.1	Waste management communication	24
8.2	Waste management education.....	24
8.3	Ongoing management	25
	Appendix A: Glossary of terms and acronyms	26
	Appendix B: Guidance documents	29

1 Introduction

This Operational Waste Management Plan (OWMP) has been prepared by Encycle Consulting (Encycle) for the following project:

Project name / address	Cowra Hospital Redevelopment, 64 Liverpool St, Cowra, NSW
Client	NSW Health Infrastructure (NSW HI)
Architect	DJRD Architects
Project manager	CWPM
Main point of contact	Sophie Smith, CWPM
Planning status	Review of Environmental Factors (REF) submission date December 2022
Green rating / sustainability objectives	Ecologically Sustainable Design framework, which is comparable to a Green Star rating
Overview of development	<p>Redevelopment of Cowra Hospital to deliver the following health services:</p> <ul style="list-style-type: none">• Emergency Department• General Inpatient ward• Peri-operative suite• Maternity and birthing services, with Tresillian rooms• Ambulatory care• Renal dialysis• Chemotherapy• Oral Health• Mental health• Mortuary with viewing room• Pharmacy• Integrated outpatient and community clinic rooms and treatment spaces, including medical imaging <p>The project will involve the construction of a new hospital comprised of 2 levels, adjacent the existing Cowra Hospital site.</p>
Architectural plans / area schedule / development information	<ul style="list-style-type: none">• Waste Management Consultant Request for Quote, received 11 October 2022• 'CHR Option E 220711 with area table' architectural drawings received 7 November 2022

	<ul style="list-style-type: none"> • Area schedule, received 11 November 2022 • Current and future service capacity summary, email from Sophie Smith, CWPM, received 7 November 2022 • Waste data, email from Sharla Seckold, Western NSW LHD, received 10 November 2022, attached: <ul style="list-style-type: none"> ◦ WasteWeights YTD • Waste data, email from Lisa Eastaway, Western NSW LHD, received 16 November 2022, attached: <ul style="list-style-type: none"> ◦ 'Current Waste Practices' ◦ 'Cowra District Hospital - July 2021 to June 2022' ◦ Photos of Cowra hospital • Waste data, email from Sharla Seckold, Western NSW LHD, received 18 November 2022, attached: <ul style="list-style-type: none"> ◦ Waste Info • Online meeting with Lisa Eastaway and hospital maintenance staff, 22 November, 2022 • Site plans and department plans, received DJRD architects, 28 November 2022 • Project stakeholder meetings, 28 and 29 November 2022 • PUG – Waste meeting, 30 November 2022 • Schedule of Accommodation, received 5 December 2022 • Occupied bed days, received Fiona Ostini, Western NSW LHD 5 and 15 December 2022 • Architectural drawings, received 21 December 2022
Local Government Authority	Cowra Shire Council

1.1 Review of Environmental Factors

This Operational Waste Management Plan (OWMP) details the management of waste generated during the operational phase of the Cowra Hospital redevelopment. This is a preliminary OWMP and will be reviewed and updated prior to the hospital becoming operational.

This OWMP has been prepared by Encycle Consulting to address the Review of Environmental Factors (REF) in accordance with the relevant provisions of the *Environmental Planning and Assessment Act 1979* (EP&A Act) and Schedule 2 of the *Environmental Planning and Assessment Regulation 2021* (EP&A Regulation).

The Review of Environmental Factors (REF) has been separated into Early Works and Main Works. The Early Works mainly consisted of demolition to prepare for the Main Works and was submitted in September 2022. The scope of this OWMP falls under the Main Works and consists of the construction of a new two level hospital at the existing site.

This OWMP has been developed to include waste management strategies that reflect current best-practice requirements (to the extent possible with the recycling services available in Cowra) and relevant Sections of the Protection of the Environment Operations Act 1997 and the NSW Environment Protection Authority Waste Classification Guidelines, Part 1: Classifying Waste. This OWMP is consistent with the aims, objectives and guidance in the NSW Waste Avoidance and Resource Recovery Strategy 2014-2021.

1.2 Context

This OWMP:

- Provides a description of the likely waste streams to be generated by the hospital as a whole, including the existing buildings and the redevelopment;
- Describes the measures to be implemented to manage, reuse, recycle and safely dispose of all waste, recycling and Clinical & Related Waste (CRW); and
- Identifies appropriate servicing arrangement for the site.

To assist management in achieving effective waste and recycling management, this OWMP has two key objectives:

- i. **To reduce the impacts of the hospital's operations on the environment** – this will be achieved by diversion of waste from landfill where possible, correct segregation of materials into appropriate management streams, awareness among staff, patients and visitors of waste avoidance practices, and correct containerisation and transport of materials; and
- ii. **To minimise the impact of the management of waste within the development on local residents** – this will be achieved by ensuring waste is managed so as to avoid odour and litter, as well as noise by being collected during suitable times.

2 Description of the redevelopment at Cowra Hospital

Cowra Hospital is a procedural hospital with an emergency service and palliative care within the Western NSW Local Health District (WNSWLHD). The hospital is located in central NSW, 310 kilometres west of Sydney. The hospital acts as a hub for some specialist services for its wider catchment population such as maternity, surgery, renal dialysis, and chemotherapy.

The current facility is approximately 60 years old and located on the same site as earlier hospital buildings. The existing buildings are aged and have a number of functional and structural problems that need to be addressed.

The redevelopment project involves the construction of a new hospital at the existing site, comprised of two levels (Figure 1, over). The redevelopment will provide the following services (refer also Table 1 below):

- Emergency Department
- General inpatient ward
- Peri-operative suite
- Maternity and birthing services, with Tresillian rooms
- Ambulatory care
- Renal dialysis
- Chemotherapy
- Oral Health
- Mental health
- Mortuary with viewing room
- Integrated outpatient and community clinic rooms and treatment spaces, including medical imaging

The hospital is supported by onsite pharmacy and pathology.

Table 1: Future bed numbers at Cowra Hospital

Service		Bed numbers
IPU beds	Acute/Subacute Beds	30
IPU beds	Maternity	2
IPU beds	Tresillian	2
Birthing	Delivery suites	2
Emergency Department	Treatment bay	4
Emergency Department	Resuscitation bay	1
Emergency Department	Isolation room	1
Emergency Department	Safe assessment room	1

Service		Bed numbers
Operating Theatres	Operating Theatres/ Procedure Rooms	2
Operating Theatres	Recovery Spaces	6
Ambulatory care	Chemotherapy Chairs	6
Ambulatory care	Renal Dialysis Chairs	8
Ambulatory care	General Chairs (infusion, ambulatory care)	2
Ambulatory care	Oral Health	5

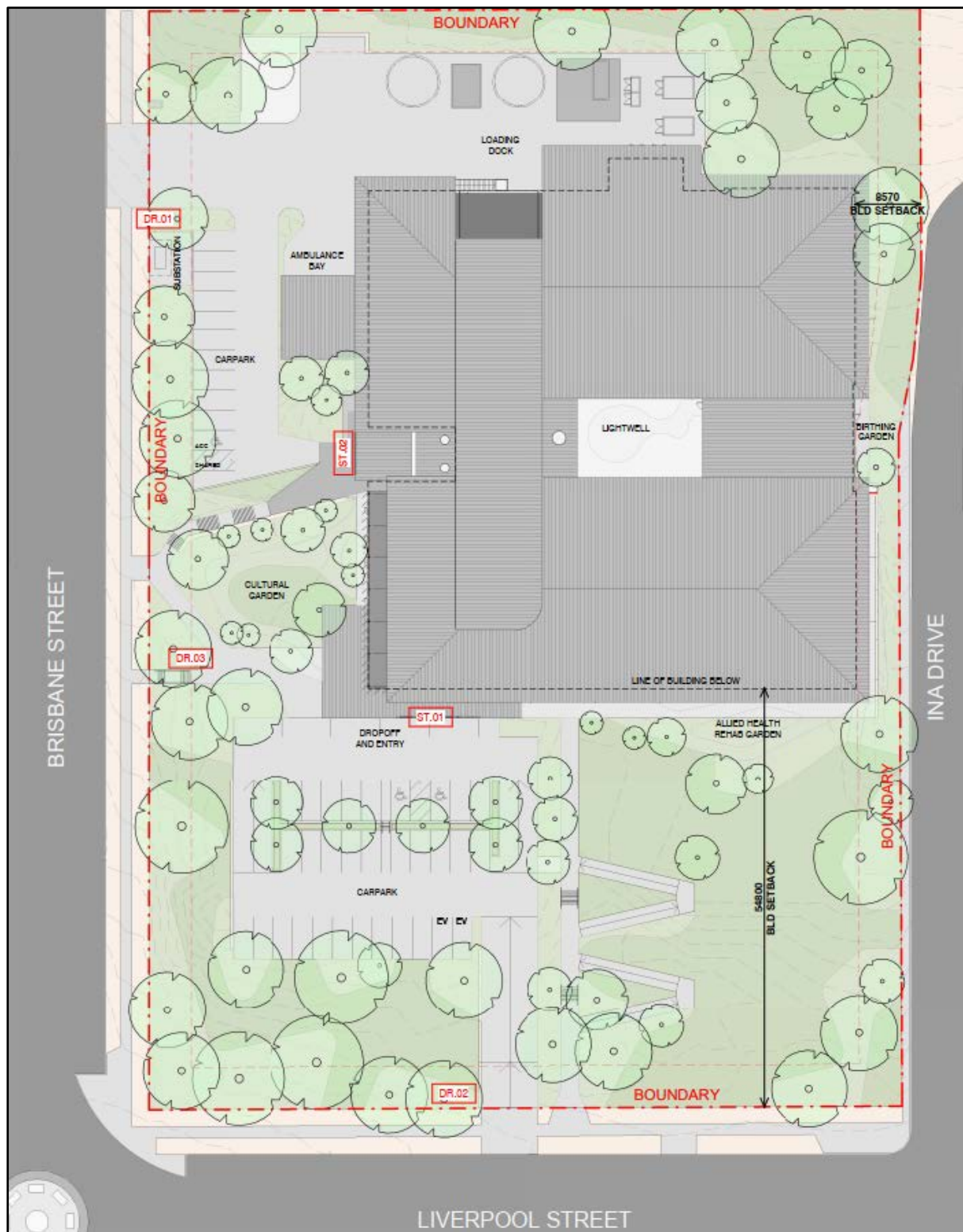
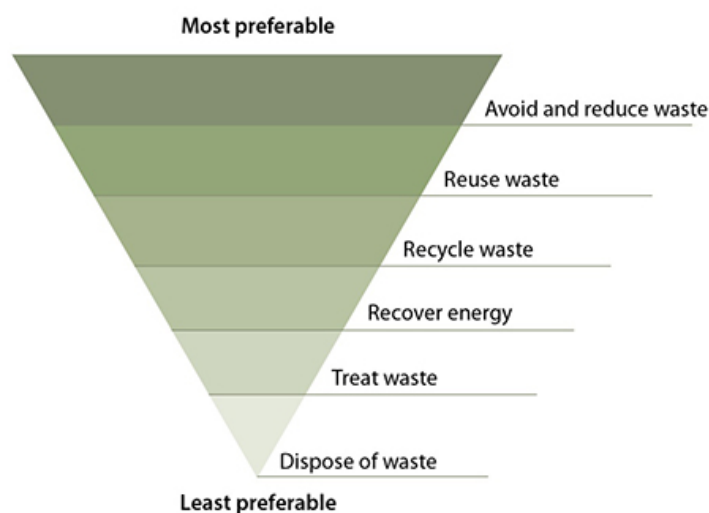


Figure 1: Proposed redevelopment at Cowra Hospital – site plan

3 Waste management principles

The following waste management hierarchy¹ has been used as a guiding principle in the development of this OWMP:



It is recognised within the healthcare sector that there are a number of issues that need to be factored into the decision making process in regards to the resultant generation and management of waste. These include:

- Patient treatment regimes
- Infection control
- Workplace health & safety for staff, patients and visitors as well as waste management contractors
- Availability of alternative products
- Costs for products and waste management services.

Opportunities and requirements for managing waste will include:

- Staff education programs
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut, or fabricated
- Not over ordering products and materials
- Identifying all waste products that can be reused
- Implementing systems to separate and store reusable items
- Identifying the potential applications for reuse both onsite and offsite and facilitating reuse

¹ <https://www.epa.nsw.gov.au/your-environment/recycling-and-reuse/warr-strategy/the-waste-hierarchy>

- Identifying all recyclable waste products that will be produced on site
- Providing systems for separating and storing recyclables prior to collection
- Providing clear signage to ensure recyclable materials are correctly separated
- Ensuring the chosen waste disposal contractor(s) comply with regulatory requirements
- Implementing regular collection of bins.

4 Operational Waste Management Plan

4.1 Waste streams

Current waste streams at Cowra Hospital are:

- General waste
- Commingled recycling including non-confidential paper and small cardboard items
- Bulk cardboard recycling
- Confidential documents
- Clinical and related waste (CRW)
- Sharps
- Anatomical waste
- Pharmaceutical waste
- Cytotoxic waste
- Green (garden) waste
- Batteries
- Toner cartridge recycling
- Bulk waste (e.g. broken furniture and equipment)

4.2 Estimated waste and recycling generation

The estimated waste generation data for the redeveloped hospital is calculated based on the data provided by the current waste contractors, information provided by staff, and industry standards. The existing hospital has 30 beds, plus another 24 bed equivalents from treatments bays, operative theatres, treatment chairs and oral health. The future hospital will have 34 beds, plus another 38 bed equivalents. The volume of each waste stream has been calculated based on maximum occupancy of 72 bed equivalents (Table 2).

Table 2: Estimated current and future waste generation for Cowra Hospital

Waste/recycling stream	Annual generation – current (L)	Annual generation – future (L)
General waste	468,000	761,748
Commingled recycling incl. bulk cardboard	542,880	883,116
CRW	26,208	42,664
Sharps	3,952	6,433

Waste/recycling stream	Annual generation – current (L)	Annual generation – future (L)
Pharmaceutical waste	1,680	2,734
Cytotoxic waste	3,328	5,418

The number and size of bins anticipated to be generated following the redevelopment is set out in Table 3.

Note that the actual types and volumes of the various waste streams will be dependent on the type of patient services as well as treatments delivered, number of inpatients (occupied bed days), and number of outpatients. With healthcare, this can fluctuate according to time of year and changes in treatments and services.

General waste, commingled recycling and cardboard skip bins will be stored in an external loading area, screened from public view. A bin lifter will be included, allowing the 240 L waste and recycling bins stored in the dirty utility rooms and administration areas of the hospital to be tipped into the relevant skip bin when full and reduce/avoid manual handling.

The general waste and recycling bin store will include swap out bins, space for bulky general waste and clean/spare sanitary bins. Used/full sanitary bins are collected directly from their location within the hospital and serviced.

CRW will be stored in a separate and secure bin store room. There will be clear delineation between the clean (empty) bins and dirty (full) bins in the CRW bin store to reduce contamination and odours.

Table 3: Estimated bin numbers and equipment for Cowra Hospital

Waste/recycling stream	Bin size	Number of bins (dirty)	Number of bins (clean)	Collection frequency by service provider
Loading area (external)				
General waste	4.5 m ³	1	N/A	Mon, Wed, Fri
Commingled recycling	4.5 m ³	1	N/A	Mon, Wed, Fri
Bulk cardboard	3 m ³	1	N/A	Weekly
Waste and recycling bin store				
General waste	240 L	N/A	4 (1 per DU room)	Swap out bins
Commingled recycling	240 L	N/A	4 (1 per DU room)	Swap out bins

Bulky general waste	3 m ³ space	1	N/A	As required
Clean/spare sanitary bins*	20 L	N/A	4	As required
CRW bin store				
CRW	240 L	2	2	Fortnightly
CRW	64 L	15	15	Fortnightly
Sharps	32 L	8	8	Fortnightly
Anatomical waste	64 L	1	1	Fortnightly
Pharmaceutical waste	120 L	1	1	Fortnightly
Cytotoxic waste	64 L	3	3	Fortnightly

4.2.1 Dirty utility rooms

The design for the new hospital will include dirty utility rooms on each level. Each dirty utility room will receive waste and recycling generated from within the surrounding ward.

Based on current waste streams at Cowra Hospital, the following waste streams are expected to be generated in the new hospital, and will require bins in the respective dirty utility rooms (note, not all of these streams will be required in each dirty utility room):

- General waste
- Commingled recycling
- CRW
- Sharps
- Anatomical waste / cytotoxic waste depending on the services provided
- Small fridge for placenta waste, maternity dirty utility only

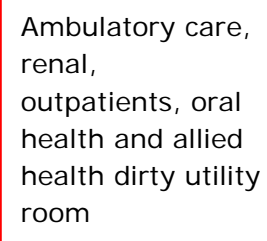
Table 4 outlines the proposed waste receptacles for dirty utility rooms in Cowra Hospital. Shelving or wall mounts will be installed in the dirty utility to accommodate smaller bins, for example sharps.

Table 4: Number of bins to be stored dirty utility rooms

DU room	Stream	Bin size (L)	Number of bins
Inpatient unit and birthing unit	General waste	240	2
	Commingled recycling	240	1

DU room	Stream	Bin size (L)	Number of bins
	Confidential documents	240	1
	Clinical and related waste (CRW)	240	1
	Sharps	32	1 (on bench or wall mounted)
	Placenta fridge	TBC	1
Emergency Department	General waste	240	1
	Commingled recycling	240	1
	Confidential documents	240	1
	Clinical and related waste (CRW)	64	1
	Sharps	32	1 (on bench or wall mounted)
Perioperative Services	General waste	240	1
	Commingled recycling	240	1
	Confidential documents	240	1
	Clinical and related waste (CRW)	64	1
	Sharps	32	1 (on bench or wall mounted)
	Anatomical waste	64	1
Ambulatory care, renal, outpatients, oral health and allied health	General waste	240	1
	Commingled recycling	240	1
	Confidential documents	240	1
	Clinical and related waste (CRW)	64	1
	Sharps	32	1 (on bench or wall mounted)
	Cytotoxic waste	64	1, as required depending on the services provided

Figures 2 and 3 show the locations and indicative sizing of the dirty utility rooms on each level of the new hospital.



Page 16

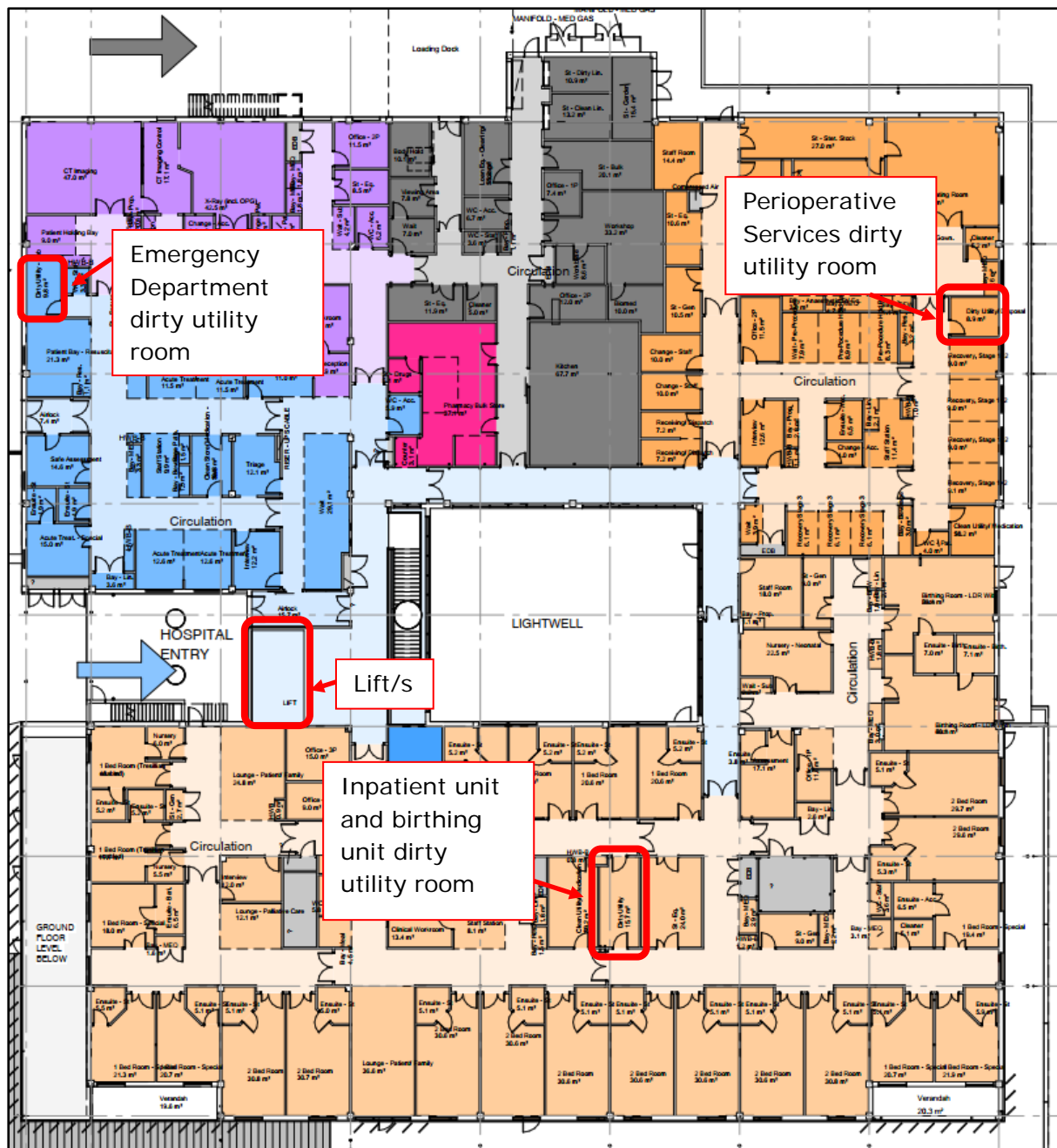


Figure 3: First floor layout showing dirty utility rooms

5 Bin store and collection area

Figure 4 shows the location of the loading dock, which will include the 4.5m³ and 3m³ skip bins and associated equipment, and the adjacent back-of-house area which will include the general waste and recycling bin store and CRW bin store.



Figure 4: Loading dock layout

5.1 Bin store amenity

Bin store	
Screened	The skip bins will be covered and screened to reduce access to vermin and for aesthetics.
Fully enclosed	The bin stores will be fully enclosed and only accessible by cleaners, hospital staff and the waste service providers.
CRW	<p>CRW will be stored in a secure bin store dedicated to biohazardous waste storage to avoid it mixing with other stored materials and wastes. The CRW bin store will be inaccessible to the public and with limited access to authorised persons. It will include labelling appropriate to the types of waste stored.</p> <p>The CRW bin store will have separate space for storing 'clean' (empty) and 'dirty' (full) bins and will be a cool/temperature controlled room.</p>

Bund	The CRW bin store will have an impervious base surrounded by an appropriate bund to contain any spills.
Spill kit	A spill kit will be available in the CRW bin store and contain items necessary to clean up spills of biohazard waste.
Aisle door and lift width	All doors, corridors and lifts on the transfer route will fit the largest bin (i.e. be at least 1100 mm wide).
Access for personnel	Routes between point of waste generation and bin stores will be free from steps/hazards. Personnel access ways will be a minimum of 800mm wide.
Doors	Doors/access for bin stores will be at least the size of the largest bin to enable bins to be easily wheeled into and out. Internal and external doors will be ventilated. Doors will be self-closing to eliminate access to vermin. Doors can be locked open to facilitate transport of bins in and out.
Walls and ceilings	Bin store internal walls will be cement rendered (solid and impervious) to enable easy cleaning. Ceilings will be finished with a smooth faced, non-absorbent material capable of being easily cleaned and walls and ceilings finished/painted in a light colour.
Floors	Floors will be constructed in concrete in accordance with AS 2870, with a slab thickness minimum of 100 mm, be impervious and have a brush finish treatment. Floors in the general waste/recycling bin store will be evenly graded to an approved liquid refuse disposal system.
Bin wash	Bin wash area will have impermeable walls and floors grading to an industrial floor waste (including a charged 'water-trap' connected to sewer or an approved septic system), with a hose cock to enable bins and/or the enclosures to be washed out and a 100 mm floor waste gully to waste outlet. Both hot and cold water will be available.
	The secure (CRW) bin store will drain to a sump or sewer to collect spills and wash waters. No liquid waste, washdown waters or stormwater contaminated with biohazardous waste are disposed of via the stormwater drainage system.
Ventilation and odour	Bin stores will include an adequate separate ventilation system that complies with Australian Standard 1668 (AS1668). Ventilation outlet will not be in the vicinity of windows or intake vents associated with other ventilation systems.
Lighting	Bin stores will have sensor or switch controlled artificial lighting both internally and externally to the room.
Noise	Noise will be minimised through the location of the bin store and collection point and the timing of collections to prevent disruption to hospital patients and neighbours.
Signage	Visual aids and signage will be provided to ensure that the area works as intended.

	The secure (CRW) bin store will be signposted with the biohazard symbol and other labelling appropriate to the types of waste stored within.
Grease trap	Grease trap will be located within 10 m to 40 m of the tanker vehicle so that the hose can reach.
Aesthetics	Bin stores will be consistent with the overall aesthetics of the development.

6 Internal transfer

Internal bins will be swapped out when full. This will require spare/empty 240 L bins to be stored in the bin store, ready to swap out with full 240L bins in DU rooms/administration areas. The full bins will be taken directly to be tipped into the skip bins and returned empty to the bin store where they will be washed. This will reduce/eliminate manual handling.

Clean/empty clinical and related waste stream bins will be stored in the 'clean' CRW bin store and swapped out for full CRW bins in the DU rooms. Full CRW bins from the DU rooms will be taken directly to the CRW bin room and stored awaiting collection. The exception is placenta waste, this is stored in a fridge in the maternity dirty utility room and transferred to anatomical bins on the day of collection.

Waste from the ground floor is to be taken from the dirty utility rooms/administration areas, through the hospital corridors to the nearest lift to be transported to the bin store area in the back-of-house of the first floor. Waste from the first floor is to then be taken directly to the bin store area.

Access requirements	
Health and safety (moving bins)	Waste systems are designed to ensure that bins (particularly when full) are not moved manually over significant distances, avoid all stairs and steep ramps (grade of slope <1:14) and other potential hazards between points of waste generation, storage and collection.
Health and safety (manual handling)	Manual handling of waste in garbage bags is excluded from the waste management systems where possible.
Aisle door and lift width	All doors, corridors and lifts on the transfer route are designed fit the largest bin.
Walkways	Safe access walkways are provided to reduce the risk of accidents.

6.1 Clinical waste transfer

Due to the risks involved with the generation and handling of clinical and related wastes, extreme care must be maintained when handling, packaging, transporting and disposing of these materials. Consequently, there are strict requirements for all generators, transporters and disposal site operators to ensure that there is protection to the community and the environment.

Clinical and related waste:

- Must be handled by staff with knowledge and access to appropriate Personal Protective Equipment
- Must be packaged so that there is no risk of waste escaping

- Must be transported and disposed of in accordance with NSW EPA legislation and guidelines and relevant Codes of Practice
- Must be stored in uniquely identified receptacles located in separate rooms from all other wastes and recyclables, and disposed of according to designated Clinical and Hazardous Waste Procedures
- Sharps containers should be placed within “arms reach” of where the sharp is generated
- Hospital staff will service the sharps containers/bins from their place of use within the hospital and replace them at the same time with empty containers/bins
- All containers must meet the required Australian Standard in terms of construction and colour coding etc.

7 Collection and vehicle access

A range of private service providers currently service the hospital, and will continue to be in place following the completion of the redevelopment:

- Cleanaway: general waste, commingled recycling, bulk cardboard recycling, bulk waste
- Grace Document Services: confidential documents
- Cleanaway Daniels: CRW, anatomical waste, pharmaceutical waste, cytotoxic waste

On collection days, front-lift collection vehicles for waste and recycling streams, flat-bed trucks for CRW and confidential documents, and a tanker for the grease trap will enter the loading dock from Brisbane Street.

The front-lift vehicles will stop in front of the skip bins and manoeuvre to allow the vehicle 'forks' at the front of the vehicle to align with the 'sleeves' on the front lift bin. The bin is then lifted over the cabin and the waste is emptied into the top of the truck.

The flat-bed trucks will stop outside the bin store and operatives will enter the bin store to retrieve full CRW bins from the 'dirty' area. Clean bins will be placed in the 'clean' area. The 'dirty' bins will be transported to a licenced treatment facility.

The access road will be shared with the ambulance service approaching the Emergency Department and the Fire Department accessing the fire hydrant booster. Sufficient space has been allowed for waste vehicles to stop and service the bins without impacting on ambulance services.

Swept path analysis for vehicle ingress and egress has been completed accommodating a HRV with a turning radius of 12.5m (see Figure 5). Waste collection vehicles can safely enter, operate and exit the loading dock following a 'hammerhead' pattern of manoeuvring.

****awaiting****

Figure 5: Swept path analysis showing access to bin store for waste collection vehicles

8 Ongoing communication and management

8.1 Waste management communication

Each waste stream will be located in a designated area in the dirty utility and the loading dock/bin store. This will assist in easy identification of correct bins by hospital staff.

All waste areas and waste and recycling bins/equipment will be clearly differentiated through appropriate signage and colour coding to Australian Standards (AS/NZS 4123:2006) to reflect the materials contained.

Signage will be a crucial element of the waste management system. The waste contractors can provide signage for bins and walls in waste storage rooms. Below are examples² of the types of signage that can be used.



8.2 Waste management education

Waste management strategies (particularly resource management programs) rely on all staff to participate and co-operate in order to ensure that objectives are met. Staff therefore must receive appropriate training/education in order to understand their waste management responsibilities.

²<https://www2.health.vic.gov.au/hospitals-and-health-services/planning-infrastructure/sustainability/waste/waste-and-recycling-signage>

All staff will receive information appropriate to their role regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Facilities management will have the responsibility for this task.

8.3 Ongoing management

Having suitable systems in place is only one element of an effective waste management system. Compliance by all stakeholders is essential:

Cleaners and HSA (health and security assistants):

Cleaners and HSA will be required to provide feedback to management about any non-compliance issues they observe during their cleaning activities, such as contamination, non-participation, or missing or damaged bins. This allows issues to be dealt with promptly by management.

Waste contractors:

The waste/recycling contractor will be required to report actual quantities collected by stream so that management can monitor performance and feed this back to staff. Specific Key Performance Indicators for performance should be included in waste and recycling contracts.

The waste contractor should also be required to participate in ongoing reviews and provide updates on new opportunities that may allow the hospital to further increase their diversion from landfill.

Appendix A: Glossary of terms and acronyms

Anatomical Waste	Limbs, organs, placenta, pathological specimens, biopsy specimens, and body tissue taken during laboratory testing, surgery or autopsy and/ or resulting from investigation or treatment of a patient. It does not include corpses.
Bulk waste	Large refuse items, e.g. broken furniture or equipment.
Clinical and related waste (CRW)	<p>Clinical and related waste means:</p> <ul style="list-style-type: none"> a) clinical waste, or b) cytotoxic waste, or c) pharmaceutical, drug or medicine waste, or d) sharps waste. <p>Clinical waste is any waste resulting from medical, nursing, dental, pharmaceutical, skin penetration or other related clinical activity, being waste that has the potential to cause injury, infection or offense and includes waste containing any of the following:</p> <ul style="list-style-type: none"> • human tissue (other than hair, teeth and nails) • bulk body fluids or blood • visibly blood-stained body fluids, materials or equipment • laboratory specimens or cultures • animal tissue, carcasses or other waste from animals used for medical research. <p>Under the Protection of the Environment Operations Act 1997, clinical waste does not include any waste that has been treated by a method approved in writing by the Secretary of NSW Health.</p>
Commingled recycling	Common recyclables, mostly packaging; such as glass, plastics, aluminium, steel, and liquid paper board (milk cartons). Commingled recycling may include paper but often, and particularly in offices, paper and cardboard are often collected separately.
Cytotoxic waste	Material which is, or may be, contaminated with a cytotoxic drug during preparation, transport, or administration of cytotoxic therapy. This includes any residual cytotoxic drug remaining after administration to patients, equipment used in the administration of cytotoxic drugs, disposable protective equipment (PPE) used in administration of cytotoxic therapy or in handling cytotoxic waste, urine, faeces and vomitus of patients receiving cytotoxic therapy, and any used or expired cytotoxic drugs.
Dirty Utility room	Rooms within a hospital ward or floor to contain products that have been used on patients, including bins for various waste streams and used linen.
E-waste	Discarded electronic appliances such as mobile phones, computers, and televisions.
Green (garden organics) waste	Separated 'green' material (e.g. grass clippings or vegetation prunings).
General waste	Any waste not included in other waste categories, which is not capable of being composted, recycled, reprocessed or reused. Examples of this stream in a

	hospital setting include incontinent pads (unless blood contaminated), stoma bags, urinary catheters, suction catheters, gloves, hand towels, medical disposals, and disposal nappies.
Grease trap	<p>Collection of solid greases and oils in a tanker system to remove this material from water discharged to sewer from commercial kitchens or food processing facilities.</p> <p>Grease trap collection vehicle requirements can be included in the Waste Management Plan where relevant. Encycle are not hydraulics engineers and do not specify or advise on grease trap systems.</p>
Pharmaceutical Waste	Pharmaceutical substances include expired or discarded pharmaceuticals, those no longer required by patients or departments and waste materials/substances generated during the manufacture and administration of pharmaceuticals.
Recyclable products	Items that are composed of materials, components or compounds, capable of being remanufactured or reused i.e. plastic bottles, cans, cardboard boxes, glass, clean office paper (that is not confidential). Items are considered recyclable if facilities are available to collect and reprocess them.
Recycling	Where a material or product undergoes a form of processing to produce a feedstock suitable for the manufacture of new products.
Sharps	<p>Any object capable of inflicting a penetrating injury, which may or may not be contaminated with blood and/or body substances. This includes needles and any other sharp objects or instruments designed to perform penetrating procedures. Sharps include:</p> <ul style="list-style-type: none"> • Glass ampoules • Needles • Glucometer lancets • Scalpel blades • Razor blades • Stitch cutters • Suture needles • Syringes with needles attached • IV tubing spikes.
Waste	<p>The term 'waste' is defined as:</p> <ol style="list-style-type: none"> a) any substance (whether solid, liquid or gaseous) that is discharged, emitted or deposited in the environment in such volume, constituency or manner as to cause an alteration in the environment, or b) any discarded, rejected, unwanted, surplus or abandoned substance, or c) any otherwise discarded, rejected, unwanted, surplus or abandoned substance intended for sale or for recycling, processing, recovery or purification by a separate operation from that which produced the substance, or

	<ul style="list-style-type: none">d) any processed, recycled, re-used or recovered substance produced wholly or partly from waste that is applied to land, or used as fuel, but only in the circumstances prescribed by the regulations, ore) any substance prescribed by the regulations to be waste.
--	---

Appendix B: Guidance documents

The following guidance documents are relevant to waste management at Cowra Hospital:

- Western NSW Local Health District (WNSWLHD) Strategic Plan 2020-2025
- NSW Government Resource Efficiency Policy (GREP), 2019
- 2022 Cowra (Hospital) Waste Management Plan (revised 1 September 2021)
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-21
- NSW Health Policy Directive PD2017_026 Clinical and Related Waste Management for Health Services
- Australian Standard (AS3816:2018) Management of clinical and related wastes
- Protection of the Environment Operations Act 1997
- NSW Environment Protection Authority *Waste Classification Guidelines, Part 1: Classifying Waste*
- Australian Standard AS/NZ 4261 Reusable containers for the collection of sharp items used in human and animal medical applications
- Australian Standard AS4031, Non-reusable containers for the collection of sharp medical items used in health care areas
- Waste Management Association of Australia, Biohazardous Waste Industry Group, Manual for the Management of Biohazardous Waste, 7th edition, 2014
- Poisons and Therapeutic Goods Act, 1966
- PD2013_043 Medication Handling in NSW Public Health Facilities
- PD2020_049 Waste Management Guidelines for Health Care Facilities, Protection of the Environment Operations Act 2005