Wagga Wagga Base Hospital (Stage 3 Redevelopment)

APRIL 2018

Operational & Construction Waste Management Plan

WASTE AUDIT AND CONSULTANCY SERVICES
Level 21 / 133 Castlereagh Street
Sydney, NSW 2000

Telephone (02) 9199 4521
www.wasteaudit.com.au

This report contains confidential information. It has been compiled by Waste Audit and Consultancy Services (Aust) Pty Ltd on behalf of Savills Australia for the Wagga Wagga Base Hospital Stage 3 Redevelopment.

This Waste Management Plan is not a substitute for legal advice on the relevant environmental legislation, which applies to Savills Australia, its contractors or other bodies. Accordingly, Waste Audit and Consultancy Services (Aust) Pty Ltd will not be liable for any loss or damage that may arise out of this project, other than loss or damage caused as a direct result of Waste Audit and Consultancy Services (Aust) Pty Ltd's negligence

Table of contents

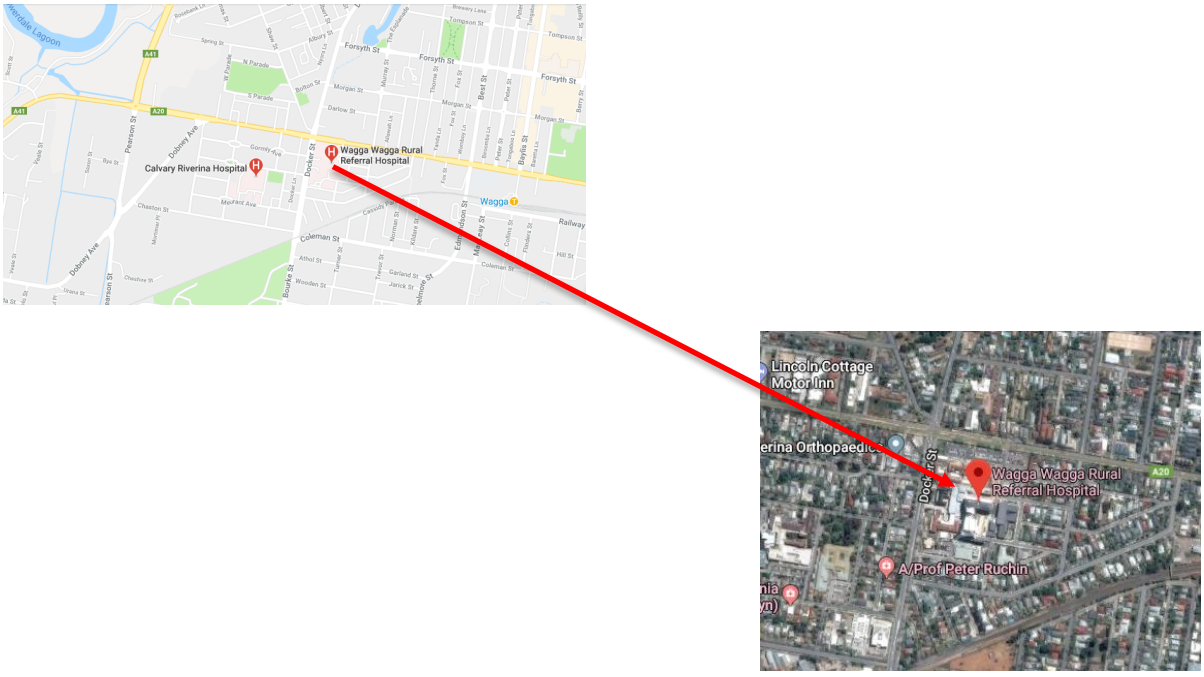
1. Introduction

This Plan details the management of waste generated during the construction and operational phases of the Wagga Wagga Base Hospital Stage 3 Redevelopment. It has been prepared on behalf of Savills Australia to accompany a Development Application for the development at this site.

The Wagga Wagga Base Hospital Stage 3 consists of a six storey Ambulatory Care Building, including a rooftop Plant Room, all above an undercroft parking level. The Ambulatory Care Building will provide the following Units:

- 28 flexible Aged Care Beds, including 4 dedicated beds for Acute Delirium.
- 24 Rehabilitation beds, including inpatient therapy and ADL facilities shared with the Aged Care and Older Persons Health inpatient units.
- A 24 bed Older Person's Mental Health Inpatient Unit, including 8 T-BASIS beds.
- A 20 chair Renal Dialysis Unit plus 4 training chairs (2 x HD and 2 x peritoneal) collocated with other Extended Hours Services.
- Ambulatory Clinics, Rehabilitation and Allied Health, comprising 60 bookable (electronic patient flow management system) Interview / Consult rooms and Gym / Allied Health treatment spaces. Services accessing this area will include Primary and Community Health, Outpatients, Prosthetics and Orthotics, Mental Health, Drug and Alcohol, and Oral Health services (8 Dental Chairs).
- An education area including library, conference rooms (60 seats total) and a lecture theatre (100 seats).
- Extended Hours Services including Hospital in the Home, Integrated Care, Rapid Assessment Clinic, After Hours GP, and Infusions using 10 treatment spaces and 6 consultation rooms and shared support areas with renal dialysis.
- Workforce and office accommodation will be provided for staff associated with Stage 3, refined through New Ways of Working (NWW).
- The NWW assessment will be also extended to Support Services staff, including Patient Flow, IT, Health Share, Health Information Services, Pastoral Care and Volunteer Services.

The location is represented below:



Waste audit and management strategies are recommended for new developments to provide support for the building design and promote strong sustainability outcomes for the building. All recommended waste management plans will comply with council codes and any statutory requirements.

The Construction and Operational Waste Management Plans address the appropriate segregation, containment and disposal of waste required with waste avoidance being the primary focus. To assist building management in achieving effective waste and recycling management, this waste management plan has three key objectives:

i. **to minimise the environmental impacts of the operations of the development on the environment** – this will be achieved by ensuring maximum diversion of waste from landfill; correct containerisation and transport of materials; correct segregation of materials into appropriate management streams; awareness among tenants of waste avoidance practices.

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 and collected during suitable times.

iii. **to ensure waste is managed so as to reduce the amount landfilled and minimise the overall quantity generated** – this will be achieved by implementing systems that assist tenants to segregate appropriate materials that can be recycled; displaying signage in all tenant areas to remind and encourage avoidance and recycling to staff; and through associated signage in the retail precinct to reinforce these messages.

The City of Wagga Wagga Development Control Plan 2010 (various Sections) and the NSW Office of Environment and Heritage, Model Waste Not Development Control Plan Chapter 2008 have been referred to in the development of the waste estimates and related requirements.

Management strategies reflect current best-practice requirements, 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*, as well as consideration of industry best practice for this type of development.

The Construction Management Plan has been developed with consideration of the above as well as the NSW Health (Health Infrastructure) *Wagga Wagga Health Service Redevelopment Stage 3 Preliminary CMP 2018*.

A number of requirement have been detailed in the SEPP 33. These have been addressed within this report as follows:

1. Statutory and Strategic Context

The requirements for compliance have been described in Sections 3 and 5.

16. Waste

This has been addressed on this report with identification of expected types and associated volumes of waste materials to be generated as well as management strategies/processes. Importantly, the management of wastes/recyclables from this Stage 3 development will be integrated with the existing systems that have been reviewed and are (a) appropriate for the types of volumes generated, and (b) represent requirements under legislation and “best practice” guidance publications applicable to the healthcare sector in Australia.

The quantity of hazardous waste (Class 6.2 – Clinical Waste), is estimated to be below the threshold of 0.5 tonnes. The estimated quantity generated from the Stage 3 development is 28 kgs. 0.5 tonnes would represent approximately 6.0 m^2 would not be the amount stored within the hospital at any one time.

2. Operational Waste Management Plan

2.1 Waste Generation

2.1.1 Waste Streams

Based on the development profile (as per Section 1), the following are the main waste streams that would be expected:

- General waste;
- Clinical waste;
- Paper and cardboard; and
- Comingled recycling (including).

Other wastes may be generated, but these would be in small volumes and irregular in terms of when generated. The management of the site will conduct a waste assessment once the site is operational to determine the additional types and quantities of wastes that may be generated. Following this, appropriate management systems will be implemented and where necessary generators advised of these management requirements.

It is not expected that significant quantities of garden waste will be generated. The appointed gardener will be required to manage this waste by disposal at a composting facility.

2.2 Waste Generation Estimates

The following table show the estimated waste generated from the various components of the development (based on the profile of the development as provided) – these estimates are based on averages for quantity of waste generated and composition as determined by industry data (ie., data/information provided by WACS' waste audits conducted in the healthcare sectors).

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

However, this issue is one that hospitals recognise and are equipped to manage in terms of systems implemented to manage those changes in waste types and volume generated.

It is estimated that the development will generate a total of approximately **3,305 litres (3.3 m^3)** of waste and recyclables per day – a total of **19,832 litres (19.8 m^3)** per week[1].

[1] This estimate is based on a "6 day" week for provision of patient services.

Daily Waste Generation Rates per Department/Area (litres)

Department	General Waste	Recyclables	Clinical Waste
Administration	230	230	Nil
Renal Services	300	100	200
Ambulatory Clinics	260	208	26
Rehabilitation IPU	220	88	2
Aged Care IPU	224	112	6
OPMH	150	60	75
Other Services	50	20	25
Oral Health	144	72	4
Education Unit	160	250	Nil
Retail	45	45	Nil
TOTAL	**1783**	**1185**	**337**

3. Waste Management Systems/Practices

Note that the system to be implemented is one that integrates with the current waste management system and procedures currently used within the Hospital. Reference has been made to the *Wagga Wagga Rural Referral Hospital Waste Disposal Guideline (valid as of 27th March 2018)*.

Guidance for determining "best practice" waste management for this Development has been obtained from the Waste Management Association of Australia, Biohazardous Waste Industry Group, Manual for the Management of Biohazardous Waste, 7th edition, 2014[2], NSW Health Department publication *Clinical and Related Waste Management for Health Services 2017* and NSW EPA. In addition, should this waste be generated, a contractor will be appointed to specifically manage the collection and treatment/disposal of it.

Waste and recycling bins will be located in dirty utility rooms, office spaces, cleaner's rooms and patient areas as required for the activities conducted in each specific department/area. As part of the hospital's continual improvement program, reviews of the location, type and size of waste/recycling containers will be undertaken on a regular basis.

Currently, no commingled recycling is collected from the hospital. However, discussions are being conducted on the provision of a new tender that will see the introduction of a commingled recycling system throughout the hospital.

As indicated, the *Wagga Wagga Rural Referral Hospital Waste Disposal Guideline (valid as of 2th March 2018)* details the management requirements for wastes/recyclables that will be generated at the Hospital and this also applies to the Stage 3 development.

The following summarises the waste and recycling system that will be implemented for the Redevelopment.

Waste will be disposed of in the disposal room on each floor. The waste disposal unit will be composed of:

- General waste bin 660 litre (green).
- Clinical waste bin 120 litre (yellow).
- Recycling bin 660 litre (red).
- Cytotoxic waste in appropriate bags/ sharps units (purple).

3.1 General Waste

All general waste will be deposited into dedicated 660 litre MGB that have been located in the various wards/departments of the Redevelopment. These will be located in such areas as dirty utility rooms and other areas as required.

[2] This publication is referred to by a number of Government agencies as representing "best practice" for the management of biohazardous waste generated within healthcare facilities.

MGB will be transported by Hospital staff and emptied into the 30m^3 general waste compactor for collection.

This compactor is serviced on a "needs" basis and that additional waste from this Redevelopment will not impact on the current system except for potentially increasing the servicing schedule.

3.2 Recycling System

660 litre mobile garbage bins will be located on each level of the development for recyclables (paper and cardboard). These will be transported on a "needs" basis by site cleaners, taken to the central storage area (on the loading dock), and replaced with an empty bin.

Once a commingled recycling system is implemented, then appropriate coloured MGB will be provided and transported by hospital staff as required.

3.3 Clinical Waste

120 litre mobile garbage bins will be positioned in each disposal room on each floor. In addition, in accord with the NSW Health publication "*PD2012_061: Environmental Cleaning Policy*", sharps containers will be located throughout the development as required.

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.

All clinical and related wastes must be:

- Handled by staff with knowledge and access to appropriate Personal Protective Equipment
- Packaged so that there is no risk of wastes escaping
- Transported and disposed of in accordance with State EPA legislation and guidelines and relevant Codes of Practice
- If clinical waste is generated, the volumes will be minimal. However, the following principles will apply for management of this waste stream. Sharps containers should be placed within "arms reach" of where the sharp is generated – then the full containers are located in utility rooms awaiting collection by healthcare facility staff and/or contractors.
- These containers will range from 1.0 litre sharps containers through to 40 litre clinical waste drums – all meeting the required standard in terms of construction and colour coding etc. The actual number and sizes to be utilised will depend on the patient's conditions and discussions with the appointed clinical waste contractor.
- It would be unexpected to have cytotoxic waste generated at this facility, but if this was to occur, then dedicated cytotoxic waste containers would be obtained from the contract and placed in appropriate positon in the facility.

- According to the Industry "best practice" waste management manual (*Waste Management Association of Australia, Biohazardous Waste Industry Group, Manual for the Management of Biohazardous Waste, 7th edition, 2014*), storage can be a dedicated and purpose built room or mobile garbage bins – what is appropriate depends on the type of waste, volumes and servicing processes. For similar types of facilities, the provision of sharps containers is adequate to manage what clinical waste is generated. Should there be a need for additional containers, these can be obtained from the appointed contractor.
- It is intended that as per normal practice for these types of facilities, that the appointed contractor will service the sharps containers/bins from their place of use within the facility and replace them at the same time with empty containers/bins.

Clinical waste 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.

3.4 Waste Storage Area

Currently there is a dedicated refrigerated storage room for clinical waste located on the loading dock. This will be used for the clinical waste generated from the Redevelopment, and if required servicing frequencies will be increased to cater for the additional clinical waste generated.

General waste will be stored in the on-site compactor and recyclables stored on the loading dock in bins while awaiting collection.

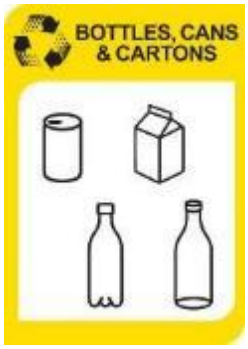
In keeping with best practice sustainability programs, all waste areas; reuse areas and waste and recycling bins will be clearly differentiated through appropriate signage and colour coding to Australia Standards to reflect the materials contained. The chute access point should be clearly signed as well.

The waste areas will be accessed by Hospital staff only.

The waste and recycling bins will be colour coded and clearly signed. Each stream will be located in a designated area. This will assist in easy identification of correct bins by cleaners.

Signage will be a crucial element of the waste management system. The waste contractor should provide all signage for bins and walls in waste storage rooms. Below are examples of the types of signage that can be used at the Redevelopment.

The following are alternate types of signs and are available from: http://www.sustainability.vic.gov.au/services-and-advice/community/public-place-recycling/signage-library and are free to download.



3.5 Waste Management Education

All waste management strategies (particularly resource management programs), rely on all staff to participate and co-operate in order to ensure that objectives are at least met. Staff therefore must receive appropriate training/education or else they are not going to know what to do.

All staff and contractors shall attend a waste management training session.

This is to be conducted during all induction programs in the first instance.

For those staff and contractors currently employed on-site, they will be required to attend a dedicated training session so that they are fully aware of their roles and responsibilities in respect to waste management.

Records shall be maintained of all staff and contractors attendance at a training session to ensure that all personnel attend.

The Waste Management Committee (apart from ensuring staff education programs are developed and implemented), should also address other methodologies in order to ensure that staff receive information on waste reduction programs (eg., signage, information sheets and flow charts).

All staff will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Appropriate signage and

updated information will also be provided, as well as receiving feedback on issues such as contamination of the recycling stream or leakage of the recyclables into the general waste. Facilities management will have the responsibility for these tasks.

All waste receptacles will be appropriately signed and additional room signage is usually provided from most waste contractors during implementation of the waste contract.

It is recommended that all signs should:

- Clearly identify the waste/recycling stream;
- Use correct waste/recycling stream colour coding;
- Identify what can and cannot be disposed of in the receptacle; and
- Include highly visual elements to accommodate for individuals with inadequate English literacy.
- As part of the staff (and resident) induction and welcoming process, a waste and recycling toolkit will be provided. This toolkit will include the details of each of the systems in place; acceptance criteria for each stream and how each stream is managed.

An active waste monitoring program will be employed. The waste and cleaning contracts will ensure that contractors actively participate in the waste reduction program for the site and meet regularly to identify performance and new opportunities for diversion and avoidance.

3.6 Ongoing Management

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

Cleaners:

Cleaners should 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.

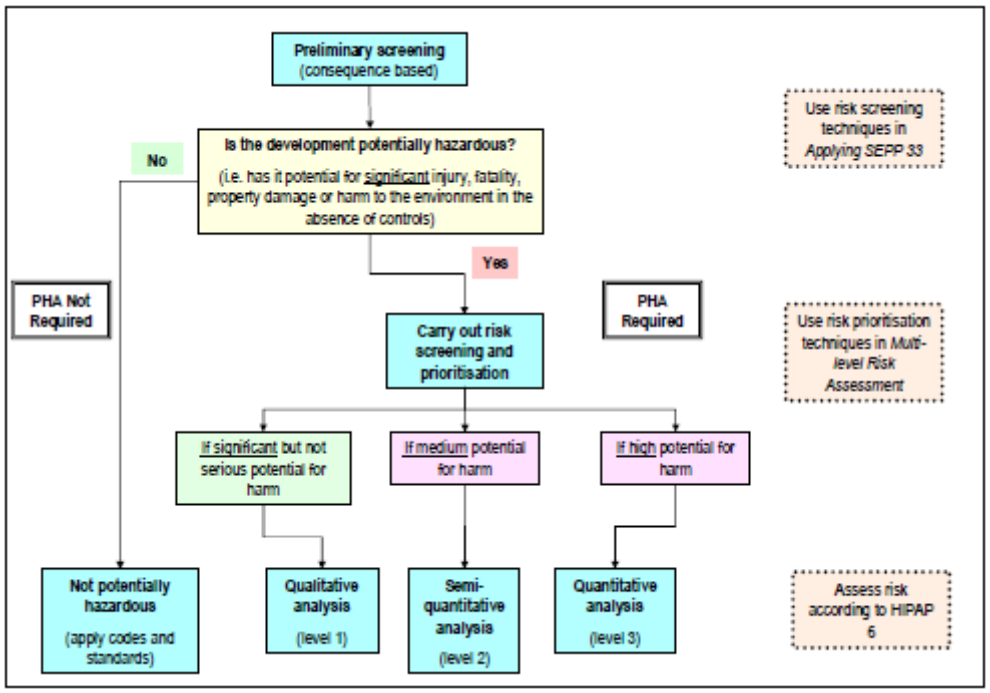
Waste Contractors**:**

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.

3.7 Hazardous Waste Management – Operational Phase

The risk assessment process adopted in this PHA is consistent with the Hazardous Industry Planning Advisory Paper No. 6 — Hazard Analysis published by the Department of Planning.



Hazards associated with the handling, storage and disposal of dangerous goods or other materials at hospitals are generally related to clinical, cytotoxic, pharmaceutical, radioactive and chemical waste streams.

For this Development, it is not expected that cytotoxic, radioactive or chemical wastes will be generated.

Pharmaceutical wastes will essentially be residues and will mainly be in syringes and IV flasks – these are managed in the clinical waste stream. Larger volumes of pharmaceutical wastes will be managed by the Pharmacy as per "normal" practice. The following summarises the expected waste streams from each department in the Stage 3 development (note that all will generate general waste and paper/cardboard recyclables)

Expected Waste Streams per Department/Area

Department	Clinical	Pharmaceutical	Cytotoxic	Chemical	Radioactive
Rehabilitation	Yes	Yes	Potentially	No	No
Older Person's Mental Health Inpatient Unit	Yes	Yes	No	No	No
Renal Dialysis Unit	Yes	Yes	No	No	No
Ambulatory Clinics, Rehabilitation and Allied Health	Yes	Yes	No	No	No
Extended Hours Services	Yes	Yes	No	No	No
Office accommodation	No	No	No	No	No

In addition to the above, bulk oxygen, nitrous oxide and tool air (medical air) tanks are located at the Services & Engineering Building and reticulated throughout the Acute services Building and Support Services Building (Transit Lounge). In addition Carbon Dioxide cylinders are located externally adjacent to the Emergency Department for Operating Theatre procedure use.

All tanks and cylinders are, as required exchanged (empty for full). All are supplied and maintained under service agreements/contract.

Both full and empty tanks/cylinders are located at the Services & Engineering Building and Emergency Department and are stored in accord with all Safety and Dangerous Goods requirements.

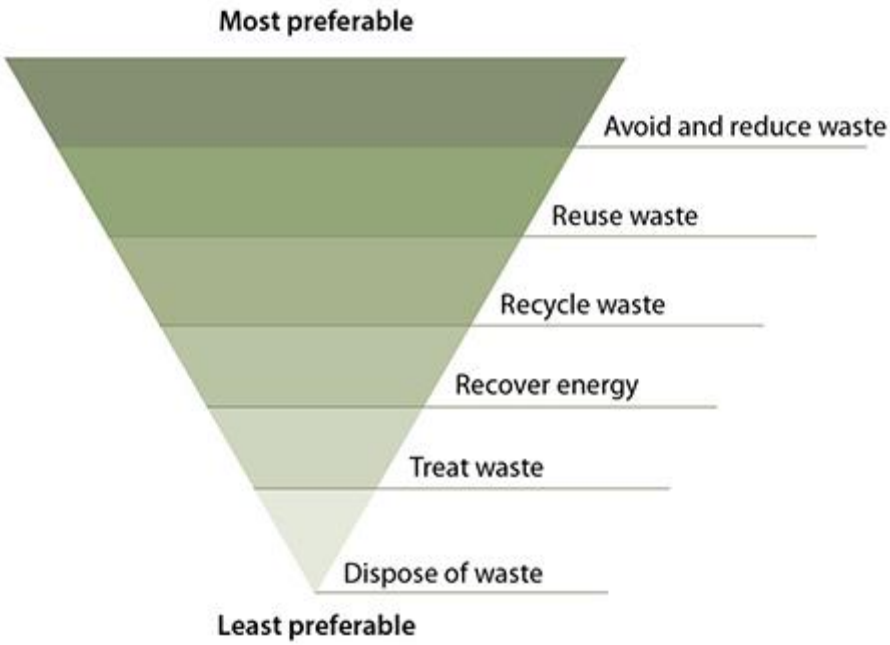
The provision of medical services by hospitals is known to generate hazardous wastes that may harm individuals and the wider community. A qualitative approach has been adopted in this PHA, equivalent to a level 1 risk analysis, on the basis that hazards associated with handling, storage and disposal of hospital wastes are generally well understood and safety management systems (including staff training and dedicated waste collection staff) are currently implemented in other existing areas of Wagga Wagga Base Hospital.

Based on the information provided and the assumptions of the hazard and exposure identification process, the Preliminary Hazard Assessment indicates there is a low to medium risk associated with the consolidation of acute services in the Stage 3 development. It is noted a low to medium risk is only attainable when identified hazards are managed appropriately. NSW Health is responsible for undertaking internal and/or external audits to ensure all hazards associated with the collection, storage and transport of clinical wastes have been identified and are controlled or managed in line with international best practice.

The current systems are in accord with NSW Health, NSW EPA, WorkSafe NSW, relevant Australian Standards and industry best-practice guidelines.

4. Construction Waste Management Principles

The following waste hierarchy will be used as a guiding principle:



Avoid and Reduce

Minimise the production of waste materials in the construction process by:

- Assessing and taking into consideration the resultant waste from different design and construction options
- Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.
- Not over ordering products and materials

Reuse

Ensure that wherever possible, materials are reused either on site or offsite.

- Identify all waste products that can be reused
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

Recycling

Identify all recyclable waste products to be produced on site.

- Provide systems for separating and stockpiling of recyclables
- Provide clear signage to ensure recyclable materials are separated
- Process the material for recycling either onsite or offsite

Note: In some cases, it may be more economical to send the unsorted waste to specialised waste contractors who will separate and recycle materials at an offsite location.

Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The following will need to be considered:

- Ensure the chosen waste disposal contractor complies with regulatory requirements
- Implement regular collection of bins

4.1 Waste sources

The principles outlines above are applied to the expected waste sources for the development as follows:

Excavation Material

Earthworks will be completed over the site as required to achieve proposed levels. Where feasible, removed earth will remain on-site for reuse.

Green Waste

All green waste material will remain onsite (shredded and or composted), and be reused in landscape areas around the development if possible. If this is not possible, then the contractor will transport the materials off-site for mulching or composting.

Bricks, Tiles, Concrete

Bricks will be stockpiled and reused wherever possible. Surplus, unused bricks will be reused in pavement construction or for temporary access tracks etc if possible. Unusable bricks will be collected and recycled at an appropriate brick/rubble recycling facility to be used in aggregate gravel products.

Timber

Recyclable timber (untreated) will be collected and recycled at appropriate timber yard. Unrecyclable (treated) timber will be disposed at landfill.

Timber that is not of the standard for reuse will be transported to a site for chipping for use as garden mulch if acceptable for this process.

Metals

All metal materials will be reused or recycled as follows:

- Metal drums and packaging to be returned to the supplier

- Any metal suitable for recycling will be separated and stored in a designated scrap metal bin for transport to a metal recycling facility

Paper and cardboard

Cardboard and paper will be produced mainly from packaging materials and office paper waste. These should be disposed of into a designated recycling bin and collected regularly as required.

Liquid Waste

Liquid waste may be produced on site for environmental control measures such as:

- Site and vehicle cleaning
- Dust control waste

The following measures will be taken to minimise the impact of liquid waste:

- Ensure water is used in moderation and no taps are left continuously running
- Use any grey water produced on site for irrigation or for dust suppression
- Only discharge clean water into storm water

4.1.1 Stormwater Pollution Prevention

All actions will be undertaken to avoid pollution entering stormwater drains and for litter generation. The following will be initiated:

i. Prior to commencement of any works a Safe Work Method Statement will be completed and reviewed to determine potential for stormwater pollution and/or litter generation

ii. The proponent (contractor), will need to develop a management strategy to manage the potential for these issues to be realised

iii. Site inspections will be conducted during the working day to monitor potential for stormwater pollution generation and where identified, works will cease until appropriate controls are implemented

iv. Wastewater and storm water will be managed and disposed of in accordance with Water Authority requirements.

4.1.2 Litter Management

i. Daily site inspections will be conducted to identify litter, remedy the situation and investigate the cause so as to reduce the potential for the issue to occur in the future.

ii. Sufficient quantities of bins (and/or bin space), will be made available so as to avoid dumping of materials outside bins

iii. All waste/recycling bins will have covers so as to ensure that wastes cannot be blown out during windy conditions. This will also apply to relevant stocks of materials to be used in construction.

iv. Personnel will be allocated the role of litter management in that they will periodically inspect the site and surrounds for litter and if identified collect and dispose of it.

4.2 Records

Records will be kept of all wastes and recyclables generated and either used on site, or transported off –site.

It will be a condition of appointment, that all waste/recycling contractors provide these records and that they also contain details of the types of materials weights/volumes and the facilities that the materials are transported to.

These records will be made available to Council or any relevant government agency on request.

4.3 Waste/recyclables storage (on-site)

All waste and recycling materials will be stored in bins provided by the appointed contractor(s). These bins will be appropriately coloured and signed to indicate what materials are to be deposited into them and located so as to maximise the recovery of reusable/recyclable materials.

As demolition and construction activities progress, the designated bins may be re-located so as to maximise the collection of materials that will be diverted from landfill. This will also involve relocating signage advising as to correct waste management.

All locations where waste/recycling bins are located will be designed so as to avoid contaminating surface/stormwaters and have active litter control measures.

4.4 Waste/recyclables treatment (on-site)

There will be no treatment of wastes or recyclables on-site except for possible removal of contaminants prior to forwarding to off-site recyclers.

4.5 Waste/Recyclables Generation

The following summarises the types, quantities and management systems for construction materials that may be generated.

The quantity of waste materials to be generated onsite are estimates and therefore the systems that will be put in place need to incorporate flexibility to allow for variation in the total quantities generated. Active site management during the construction phase will ensure all waste/recyclable materials are disposed of appropriately and that all waste receptacles are of sufficient capacity to manage onsite activities.

The table below details the estimated composition by m^3 of construction waste to be generated for the development.

Finalisation of the system(s) that will be implemented for the recovery of materials and for disposal of others to landfill will occur following appointment of contractor(s). A component of the appointment will be that contractors will be required to provide data as to the disposal pathway (eg., materials, volumes and final disposal site), as well as a validation process for this information.

The appointed contractor(s) will also be responsible for sourcing speciality recycling facilities for the materials that cannot be reused on site.

Waste management systems - construction

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Concrete	$20m^3$	No on-site reuse	Collected by contractor and disposed at concrete recycling facility	Facility TBA upon appointment of contractor
Timber (formwork and construction)	$30m^3$	Separated and where feasible, reused for further formwork	Unused material separate and stockpiled onsite. Collected by specialist timber subcontractor for recycling	Facility TBA upon appointment of contractor
Brick	$7m^3$	No on-site reuse	Unusable bricks collected by contractor and disposed at brick recycling facility	Facility TBA upon appointment of contractor
Plasterboard	$10m^3$	Unused material taken back by supplier for reuse where possible	Material to be separated and stockpiled onsite. Collected by the waste subcontractor on a weekly basis (or as required) for recycling. Possible	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
			use as soil improver with gypsum etc removed by recycler	
Ferrous Metals (eg., roofing, cladding, balustrades, fittings, door frames, guttering, studs etc)	$5m^3$	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Non-Ferrous Metals (eg., wiring)	$2m^3$	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Glazing	$2m^3$	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling by a facility (possibly as road base, but generally not accepted for recycling due to film in the glass)	Facility TBA upon appointment of contractor
Carpet/Underlay	$2m^3$	No on-site reuse	This will be disposed of into a designated bin and collected regularly as required for recycling if of the required quality or disposal to landfill	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Plastics (eg., plumbing fixtures)	$10m^3$	No on-site reuse	Contractor appointed to collect and recycle	No disposal to landfill
Mixed Recyclables	$25m^3$	No on-site reuse	Contractor appointed to collect and recycle	No disposal to landfill
General waste	$45m^3$	No on-site reuse	No recycling or reuse	Facility TBA upon appointment of contractor

5. Hazardous Waste Materials - Construction

5.1 Management Procedures

A hazardous building materials assessment report has been produced by JBS&G and records hazardous materials including lead-based paints, phenols and polychlorinated biphenyls (PCBs) and provides recommendations for handling the hazardous materials identified.

If needed to be used, contractors employed to manage any identified hazardous wastes will be required (prior to appointment), to demonstrate their compliance with NSW EPA and WorkCover requirements for management of the specific materials they are contracted to manage.

The following are the recommended approaches for managing the wastes and other materials that were identified during the site analysis.

The key principles that need to be adhered to are[3]:

1. All hazardous wastes need to be correctly identified and managed in accord with all relevant legislation and Codes of Practices.
2. Hazardous materials need to be separated into their individual categories and not mixed with any other materials

For any identified hazardous wastes, a Hazardous Materials Management Plan will be prepared in accordance with the requirements of AS2601 prior to the commencement of any works – this includes management principles such as:

- The removal, handling and disposal of asbestos materials are to be undertaken only by an appropriately licensed contractor and in accordance with the requirements of the NSW WorkCover Authority and the NSW Office of Environment and Heritage (NSW OEH);
- All asbestos and other hazardous materials are to be appropriately contained and disposed of at a facility holding the appropriate licence issued by the NSW OEH; and
- A sign displaying the words 'DANGER ASBESTOS REMOVAL IN PROGRESS' is to be displayed on sites where buildings to be demolished contain asbestos materials.
- Any hazardous materials discovered during execution of The Works should be dealt with by the Head
- Contractor in accordance with the requirements set out in the *HGC21 Preliminaries* document (Section 5.6 – Hazardous Substances).

[3] Reference should be made to the NSW EPA publication, Waste Classification Guidelines Part 1: Classifying Waste.

Prior to commencing any clean-up activities, a Workplace Health & Safety Plan will be developed, implemented and monitored with all relevant site personnel receiving specific training in management of hazardous waste materials (including suspected hazardous materials).

Any identified hazardous materials will be transported by vehicles permitted to do so and disposed at sites licenced to receive the specific hazardous material(s). Records of all loads leaving the site will be maintained and made available to any relevant personnel/organisation.

Any identified hazardous wastes will be managed in accord with the *Protection of the Environment Operations Act 1997* and *Protection of the Environment Operations (Waste) Regulation 2014*.

Further information can be accessed from:

https://www.epa.nsw.gov.au/your-environment/waste/industrial-waste/asbestos-waste

https://www.epa.nsw.gov.au/your-environment/household-building-and-renovation/lead-safety

https://www.epa.nsw.gov.au/search?q=PCB

6. Contracts and purchasing

Each subcontractor working on the site will be required to adhere to this Waste Management Plan.

The Head Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work
- Implements procedures to ensure waste resulting from their work will be actively managed and where possible recycled, as part of the overall site recycling strategy or separately as appropriate
- Ensures that the right quantities of materials are ordered, minimally packaged and where practical pre-fabricated. Any oversupplied materials are returned to the supplier
- Implements source separation of off cuts to facilitate reuse, resale or recycling.

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Providing training to all site employees and subcontractors in regards to the WMP as detailed in section 8 below.

Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems.

7. Training and Education

All site employees and sub-contractors will be required to attend a site specific induction that will outline the components of the WMP and explain the site specific practicalities of the waste reduction and recycling strategies outlined in the WMP.

All employees are to have a clear understanding of which products are being reused/recycled on site and where they are stockpiled. They are also to be made aware of waste reduction efforts in regards to packaging.

The site manager will post educational signage in relation to the recycling activities on site in breakout areas, lunch rooms etc.