FINLEY HOSPITAL UPGRADE

PRELIMINARY WASTE MANAGEMENT PLAN FOR THE REVIEW OF ENVIRONMENTAL FACTORS

JUNE 2024

DOCUMENT ADMINISTRATION

Revision History

Version	Date	Issued To	Remarks
01 Draft	5 February 2023	Internal CI	Draft for Review and Comment by CI
02 Draft	17 February 2024	Urbis	Draft document for review.
03	18 June 2024	Urbis	Final document

Contents

1.0 Introduction

1.1 Finley Hospital Main Works

Finley Hospital currently provides 16 inpatient beds, a level 2 emergency department which was refurbished in 2018, collocated GP Practice, community health services, clinical/ non-clinical support services and staff accommodation.

The project scope includes demolition works to the following areas:

- Partial ED / IPU;
- Existing front of house;
- Communications room.

The project scope includes the following construction works:

- a partial refurbishment of the Emergency Department;
- an IPU extension delivering 6 new beds;
- new medical imaging department (general Xray plus ultrasound);
- new front of house;
- refurbishment of the main hospital corridor;
- upgrade of essential engineering infrastructure;
- landscaping to complement the main entry and IPU extension.

Post construction, the hospital will deliver the following services:

- inpatient unit (14 beds);
- ED (5 points of care);
- medical imaging (General Xray, ultrasound);
- ambulatory care (e.g. outpatients, community health, physiotherapy);
- non-clinical support services (engineering, food services, linen, cleaning);
- five key worker accommodation units (being delivered as a separate project).

1.2 Hospital and Site Description

Finley hospital is located within the Murrumbidgee Local Health District (MLHD), which covers 21 Local Government Areas (LGA's) spread across 125,561 square kilometres. Finley is in the Small Community Hospital peer group.

The hospital currently provides Role Delineation Level 2-3 clinical services in:

- Acute Inpatient medical and non-procedural surgical;
- Sub-acute inpatients including palliative care, maintenance care and geriatrics;
- Community Health;
- Aboriginal Health;
- Mental Health and Drug & Alcohol;
- Clinical support services; and
- Non-clinical support services.

The Finley Hospital occupies 19,748sqm (1.75 hectares) at 169-189 Loftus Street, Finley. The Hospital is located on flat land some distance from the main street of Finley.

The existing hospital was constructed in the 1960's, with 2,416sqm of space in the main hospital. The hospital has had various upgrades in the intervening years including replacement of the electrical switchboard, relocation and upgrade of the Emergency Department. The site hosts a staff accommodation block of 371sqm, which is currently occupied despite the poor condition. Community care is delivered from an adjacent building of the same age as the hospital and covers 385sqm. There are also standalone buildings for plant and mortuary. Parking is provided in various on-grade car parks. Extensive low maintenance lawns and gardens are located around the hospital building.

Image 1: Aerial view of Finley Hospital

1.3 Purpose of this plan

This report supports the Review of Environmental Factors (REF), pursuant to Division 4.1 of the Environmental Planning and Assessment Act 1979 (EP&A Act).

The purpose of this report is to provide:

- Estimation and details of waste generated throughout the main works package; and
- A preliminary description of measures to be implemented to handle waste during facility operation.

Details of the amounts, handling methods and destinations of waste generated during construction will be provided by the construction contractor appointed to the project.

2.0 Legislation, policy and guidelines

2.1 NSW State Legislation and Policy

2.1.1 The *Protection of the Environment Operations Act 1997* (Part 4)

The *Protection of the Environment Operations Act 1997* covers the requirements for waste generators in terms of storage and correct disposal of waste. The Act establishes the waste generator as having responsibility for the correct management of waste, including the final deposit.

2.1.2 *Waste Avoidance and Resource Recovery Act 2001 No 58*

Resulting from the concerns raised around waste management practices and increasing volumes of waste, the NSW government introduced the aforementioned Act, superseding the *Waste Minimisation and Management Act 1995*.

The Act aims to encourage the most efficient use of resources and introduce environmental harm in accordance with the principles of ecologically sustainable development. The Act required Resource NSW to develop a waste strategy for the state to assist in achieving those requirements and objectives of the *Protection of the Environment Operations Act 1997*.

The Waste Management Plan is a requirement for a new development in NSW and is written with reference to the *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021*, made under the Act. The Strategy seeks to ensure that resource management options are considered against the following hierarchy:

i) Avoidance of unnecessary resource consumption;
ii) Resource recovery (including reuse, reprocessing, recycling and energy recovery);
iii) Disposal.

The strategy sets targets for a range of priority areas:

- Reduce total waste generated by 10% per person by 2030;
- 80% average recovery rate from all waste streams by 2030;
- Increase the use of recycled content by governments and industry;
- Phase out problematic and unnecessary plastics by 2025;
- Halve the amount of organic waste sent to landfill by 2030;
- An overall litter reduction target of 60% by 2030 and plastic litter reduction target of 30%;
- Triple the plastics recycling rate by 2030;
- Achieve net zero emissions from organic waste by 2030.

2.1.3 Other Relevant Policy Documents

There are a range of other policy and guideline documents that are applicable:

- The Waste Classification Guidelines, Environmental Protection Agency, 2014
- Clinical and Related Waste Management for Health Services, Policy Directive PD 2020_049, NSW Health
- Safe management of wastes from health-care activities, 2nd edition, World Health Organisation, 2014
- Better Practice Guidelines Waster Management and Recycling in Commercial and Industrial Facilities, NSW EPA, 2012.
- Construction and Demolition Waste A Management Toolkit, NSW EPA, 2020.

2.2 Local Government Requirements

2.2.1 Berrigan Shire Council Development Control Plan

The Development Control Plan was developed and implemented by the Berrigan Shire Council and made effective from 2014. The plan clarifies the Development Control Plan is to be read in conjunction with the Berrigan Local Environmental Plan and any relevant State Environmental Planning Policies (SEPP) (i.e. the Waste Avoidance and Resource Recovery Act 2001 No 58, or other).

The Berrigan Local Environmental Plan (referenced above), clarifies under Section 5.13 (f);

- Waste generation during construction and operation will be avoided and that any waste will be appropriately removed.

It is the responsibility of the contractor to dispose appropriately of the waste generated during construction, in line with the requirements of this plan and referenced governing legislation. :

- A waste management plan (WMP) for the work must be submitted to the Principal Certifying Authority (PCA) at least 2 days before commencement of the works on-site

2.2.2 Murrumbidgee Local Health District – Environmental Sustainability Strategy 2022-2024

MLHD's current status is as follows.

- More than $600,000 is spent per year on waste within MLHD.
- Almost 6,000kg of clinical waste is produced per month.
- Many clinical waste streams require incineration – further contributing to the carbon footprint.
- Local initiative such as the proceeds of returned plastic bottles collected at Wagga Wagga Base Hospital, are shared with St Vincent De Paul, and used to offset increasing food costs for locals in need.

MLHD seeks to achieve:

- Consistent approach to recycling across the District;
- Consistent processes for collecting data on waste across the District;
- Stabilisation in the generation of the top three waste streams:
    - Clinical Waste
    - General Waste to landfill
    - Comingled recycling.

What are MLHD’s targets?

- Reduce general waste going to landfill by 10% by 2024.
- Promote and increase attendance/engagement at sustainability related events by 2024.
- Reduce paper use by 10% by 2024

3.0 Targets, Monitoring and Measurement

Accurate and high-quality waste data is crucial for effective waste management at Finley Hospital. This data enhances accuracy, transparency, and confidence, facilitating meaningful comparisons and benchmarking within and between different portfolios and waste contractors. Strategic resource planning benefits from good waste data, providing insights into the efficiency of equipment and operations, ensuring correct invoicing and fee accuracy, and aiding in achieving greater resource recovery through precise measurement of current and future waste performance.

3.1 Waste targets

Finley Hospital is committed to achieving a high sustainability performance in waste management. For operational waste, it will adopt a landfill diversion target of 70%, aligning with its sustainability strategy. This target will be calculated by subtracting the weight of landfill waste from the total waste and then dividing this figure by the total waste, multiplied by 100%.

A landfill diversion target of 80% will be adopted for construction and demolition waste.

3.2 Monitoring and Measurement

Data on waste generation at Finley Hospital will be systematically collected, collated, and recorded by the waste service provider. This process is essential for monitoring and measuring progress towards waste targets.

3.2.1 Operations

The waste service provider for Finley Hospital must adhere to the Waste Management Plan (WMP) and comply with operational safety standards. They are required to provide accurate measurements for each waste bin collected, per waste stream, ensuring the integrity of measurement scales. Any observed contamination in recycling bins must be reported as an incident and treated as general waste.

The waste service provider will also supply colour-coded equipment, in line with Australian Standard 4123, and maintain a regular collection schedule to keep bins no more than three-quarters full, ensuring hygiene and odour control.

3.2.2 Contamination Audit

An annual contamination audit of each recycling stream is recommended for Finley Hospital. This audit, which will be conducted by an independent expert, will assess the level of non-acceptable items in the waste sample, determining the contamination rate.

3.2.3 Reporting

The waste service provider will issue regular operational waste management reports to Finley Hospital, detailing the types and amounts of waste generated and any contamination incidents.

3.3 Review of WMP

A thorough review of Finley Hospital's Waste Management Plan (WMP) will occur annually to ensure the plan's effectiveness, compliance, and alignment with sustainability goals. This comprehensive review will be conducted collaboratively by the waste service provider and representatives of Finley Hospital.

The annual review will consider, at a minimum:

1. **Performance evaluation**: Assessing waste management effectiveness and performance against reduction and recycling targets.

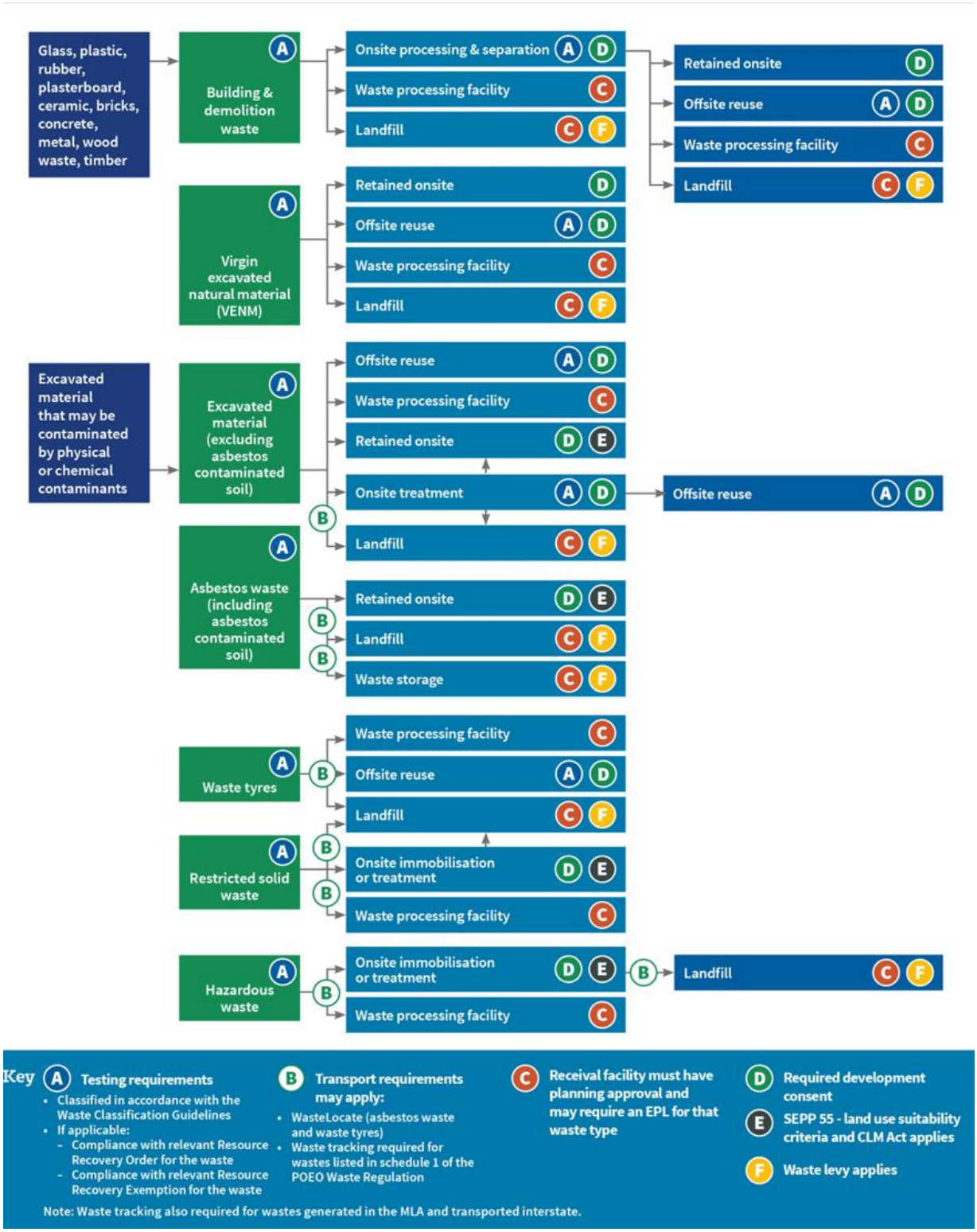
2. **Operational efficiency check and compliance with regulations**: Reviewing waste collection schedules, segregation practices, and facility effectiveness as well as adhering to local and national waste management standards.
3. **Stakeholder Feedback and Training**: Gathering input from staff for improvements and evaluating training effectiveness.
4. **Exploring Sustainability Opportunities**: Incorporating eco-friendly disposal methods and innovative waste management technologies, as well as re-aligning with the current Council / Local Health District's sustainability approaches.
5. **Financial Assessment**: Analysing costs of waste management to identify potential savings.
6. **Setting Achievable Future Goals**: Establishing realistic targets aligned with sustainability objectives.
7. **Documentation for Record-Keeping**: Recording review outcomes for future reference and compliance

4.0 Construction and Demolition Waste

4.1 Construction and Demolition Waste Streams

Construction and demolition works for this development are to take place with consideration of the Council's development control plan and relevant legislation listed herein this Waste Management Plan, or those implemented by the NSW Government or government bodies. In particular, construction and demolition will occur with stringent consideration and implementation of the methodology for recycled materials and recycling of construction and demolition waste steams as outlined in this plan. The 80% target for landfill diversion for construction and demolition waste is to enable and ensure the highest proportion of waste is recovered and recycled or reused. An overview of the major waste streams resulting from construction and demolition and their management is demonstrated in the below figure. The waste streams predicted to generate the greatest volume of waste for this development have been highlighted below.

Figure 1: Waste flows for common construction and demolition waste



Source: NSW EPA

4.2 Construction and demolition waste

Table 1 below identifies the types of waste anticipated to be produced as part of the works associated with redevelopment of Finley Health Service Hospital. At the current stage of design, there is no significant earthmoving or excavation to take place at Finley Hospital. It is noted that this is based on current design, and estimates are subject to change based on the development of the design and cost plans.

Table 1: Anticipated waste produced from construction and demolition activities

Construction and demolition waste streams	**Description**
Building and demolition waste	Glass, plastic, rubber, plaster board, ceramic, bricks, concrete, metal, wood waste, timber
Virgin excavated natural material	Excavated materials
Excavated material	Excluding asbestos contaminated soil
Asbestos waste	Asbestos contaminated building and demolition waste, contaminated soil
General solid waste (non-putrescible)	Card board, garden waste, general waste

4.3 Construction and demolition waste management

Waste generation and management during construction and demolition is the responsibility of the principal contractor and to be handled in accordance with the approved Construction Waste Management Plan (CWMP). As per section 4.1, waste generated as a result of construction and demolition activities will be reused and recycled as a priority, and only disposed to landfill as a last resort.

During the construction phase, suitable areas onsite (off site as necessary) will be allocated which provide the required access for:

- separated storage of building materials;
- separated storage of construction waste;
- separated sorting of construction waste; and
- removal of construction waste for recycling, re-use or landfill disposal.

Any waste generated during construction which is unable to be re-used or recycled will be disposed of at an EPA approved waste management facility. The details of waste types, volumes and destinations will be recorded by the contractor using the tracking sheets appended to this plan (or similar). Prior to transporting waste materials to offsite facilities, it will be verified that the transporter and facility is licensed to handle the specific materials.

5.0 Operational Waste

5.1 Waste generation

The types of operational waste to be generated by Finley Health Service are:

- General waste
- Paper / cardboard
- Glass
- Plastic

- Clinical waste
- Organics
- E-Waste
- Hazardous waste (chemicals).

In line with the data referenced in the *MLHD Environmental Sustainability Strategy 2022-2024*, the waste produced in a hospital facility per bed, per day amounts to 0.6kg of waste. Due to current tracking limitations on the existing production of waste in the Finley Hospital facility, the above figure has been used to pro-rate and estimate the current operational waste produced by the facility. The below estimates have not made allowance for Finley's 44% typical bed occupancy, to remain consistent with the benchmark figure extracted from the MLHD Environmental Sustainability Strategy which makes no reference to occupancy percentage.

Table 2: Estimate of operational waste production for Finley Hospital (current)

	Estd. Waste per bed per day (Kg)	**Number of current beds**	**Total annual waste (Kg)**
Inpatient beds	0.6 Kg	16	3,504 Kg
Total			3,504 Kg

5.2 Operational waste streams and labelling

All waste containers and bin liners in healthcare settings must be color-coded and labelled as per the specifications in the below tables, titled 'Waste streams', for easy identification. When dealing with Division 6.2 Infectious Substances, it is crucial to adhere to the Australian Dangerous Goods (ADG) Code, particularly for waste classified under Category A Infectious Substances and Category B Infectious Substances. This includes ensuring that portable and mobile bins are correctly marked, labeled, and placarded according to Chapters 5.2 and 5.3 of the ADG Code. Health service staff will also consult the SafeWork NSW fact sheet for guidelines on packing and transporting clinical waste, and coordinate with transporters to provide a transport document that accurately describes the contents being moved, ensuring compliance with safety and regulatory requirements.

Table 3: Management of clinical waste streams: anatomical, sharps and other clinical waste

Waste stream	Anatomical waste	Clinical sharps waste	Clinical waste (Incl. Pathological Waste)
Definition	Identifiable human body parts such as limbs, organs, placenta and recognisable or large pathological specimens resulting from investigation or treatment of a patient It does not include deceased bodies	Any clinical object capable of inflicting a penetrating injury which may or may not be contaminated with blood and or body substance. This includes needles, ampoules and any other sharp objects or instruments designed to perform penetrating procedures[1] May contain clinical material or Genetically Modified Organism (GMO)[2] waste	Clinical waste with the potential to cause injury, infection or offence: • Unrecognisable human tissue (excluding hair, teeth, nails and anatomical waste) • Bulk blood or other body fluids (or body substances) • Material and equipment visibly stained by blood or body fluids (includes incontinence pads and disposable nappies that come from an infectious patient)[3] • Lab specimens, cultures or other waste from lab investigations • Waste from medical or veterinary research • Genetically Modified Organisms (GMOs)
Bin colour	Yellow	Yellow	Yellow
Lid colour of bin	Orange	Yellow	Yellow
Plastic bin liners	Orange	N/A	Yellow
Labelling of bins and if applicable liners	Anatomical waste	Clinical sharps	Clinical waste
Symbol			
Symbol (description)	Black biological hazard	Black biological hazard	Black biological hazard
Label (if containing viable PC1 or PC2 GMOs)		Contains GMOs	Contains GMOs
Specific requirements	For incineration only	For incineration *or* autoclaving and shredding Sharps containers must be rigid-walled and meet the requirements specified in AS/NZS 4031 and AS/NZS 4261[4,5] Autoclave tape and bag indicators must be used to show autoclaving has been completed	For incineration *or* autoclaving [6] and shredding. Autoclave tape and bag indicators must be used to show autoclaving has been completed. Fluid may be able to be discharged into sewer depending on Liquid Trade Agreement between the health service and water utility All clinical waste once treated by a process acceptable to NSW Health[7] may be reclassified in accordance with the Waste Classification Guidelines[8] before recycling or disposal. There are special precautions regarding disposal of waste related to cases of viral haemorrhagic fever[9]
Relevant Act/ Regulation /Australian Standard	AS/NZS 3816:1998 Management of clinical and related waste AS/NZS 4123:2008 Mobile Waste Containers	AS/NZS 3816:1998 Management of clinical and related waste AS/NZS 4123:2008 Mobile Waste Containers *Protection of the Environment Operations Act 1997* *Protection of the Environment Operations (Waste) Regulation 2014*	AS/NZS 3816:1998 Management of clinical and related waste AS/NZS 4123:2008 Mobile Waste Containers *Protection of the Environment Operations Act 1997* *Protection of the Environment Operations (Waste) Regulation 2014*
EPA licence requirements	No	No	No

Reference: Clinical and Related Waste Management for Health Services

Table 4:Management of clinical waste streams: cytotoxic, pharmaceutical and radioactive

Waste stream	Cytotoxic waste	Pharmaceutical waste	Radioactive waste
Definition	Material contaminated with residues or preparations containing materials toxic or otherwise harmful to cells. This includes any residual cytotoxic drug or laboratory chemical and any discarded material or clinical waste associated with the preparation or administration or excretion of cytotoxic drugs May include Genetically Modified Organisms (GMOs) or tissues containing GMOs	Pharmaceuticals or other chemical substances specified as regulated goods in the Poisons and Therapeutic Goods Act 2008. Includes any substance specified in a Schedule of the Poisons List under the Act, as well as any therapeutic good which is unscheduled Includes expired or discarded pharmaceuticals, filters or other material contaminated by pharmaceutical products	Waste material, including sharps and clinical waste contaminated with a radioisotope which arises from the medical or research use of radionuclides, e.g. during nuclear medicine, radioimmunoassay and bacteriological procedures, and may be in solid, liquid or gaseous form, and which emits a level of radiation above the level set by regulatory authorities
Bin colour	Purple	Yellow	Red[1]
Lid colour of bin	Purple	Orange	Red
Plastic bin liners	Purple	N/A	Red
Labelling of bins and if applicable liners	Cytotoxic waste	Pharmaceutical waste	Radioactive waste plus specific requirements below
Symbol		Nil	
Symbol (description)	White telophase	Nil	Yellow background with distinctive 'trefoil' symbol in black and the lettering 'CAUTION RADIATION' in black
Label (if containing viable PC1 or PC2 GMOs)	Contains GMOs		
Specific requirements	For incineration only Collection, transport and handling only by licensed and registered waste management companies	Storage, destruction and disposal methods must comply with PD2013_043 Medication Handling in NSW Public Health Facilities[2] Pharmaceutical waste must be incinerated at a licensed controlled waste facility. Certain pharmaceuticals may only be destroyed by authorised persons under the *Poisons and Therapeutic Goods Act 1966* [3] Pharmaceutical waste bins must be lockable	Radioactive material to be stored on-site in appropriate storage area until it decays to below the thresholds of a "radioactive substance" as defined under the Radiation Control Act and Regulation Waste is to be classified with reference to the Safety Guide for the Classification of Radioactive Waste[4] and in accordance with the EPA Waste Classification Guidelines[5] Radioactive waste must be labelled with the substance, activity level and the date at which it is measured Handling and storage to comply with a Radiation Management Plan in accordance with the Code of Practice for Radiation Protection in the Medical Applications of Ionizing Radiation (ARPANSA 2008)[6] Radioactive sharps – see page 9 [7] When radioactive waste is to be transported, health services must comply with the Code of Practice for the Safe Transport of Radioactive Material (ARPANSA 2014)[8]
Relevant Act and Regulation	AS/NZS 4123:2008 Mobile Waste Containers *Protection of the Environment Operations Act 1997* *Protection of the Environment Operations (Waste) Regulation 2014*	*Poisons and Therapeutic Goods Act 1966* *Poisons and Therapeutic Goods Regulation 2008*	AS/NZS 4123:2008 Mobile Waste Containers *Radiation Control Act 1990* *Radiation Control Regulation 2013*
EPA licence requirements	No	No	Yes - Waste Classification Guidelines Part 3: Waste containing radioactive material (EPA, 2014)

5.3 Waste generation estimates

In addition, Finley is required to comply with the MLHD Waste Management Plan. MLHD is committed to reducing waste. The scope of works that form the Finley Hospital upgrade project and the works captured within the REF will result in fewer inpatient beds, reducing from 16 IPU beds to 14 IPU beds.

The below table shows the volume of general waste, recyclable waste and clinical waste currently generated by Finley Hospital, compared with the capacity following the upgrade. The estimates for additional waste were generated utilising the 0.6kg per bed / per day waste produced (obtained from the MLHD Environmental Sustainability Strategy 2022-2024) and prorating the new bed profile to calculate the revised total annual waste produced by the facility.

Table 5: Current and projected volume of waste generated by the Finley Hospital

	Current annual waste (prorate, Kg)	Proposed beds	Revised total annual waste (prorate, Kg)
Inpatient beds	3,504	14	3,066
Total	**3,504**		**3,066**

The following waste minimisation and reduction strategies are recommended to be adopted by the facility once the development becomes operational:

- Waste minimisation commences with product choice – choosing products with the smallest amount of packaging available, or packaging removed by company;
- Purchasing products and equipment made from recycled materials;
- Stock that can expire to be kept to a minimum and rotated to ensure oldest stock is used first;
- Packaging to be removed and segregated from clinical waste before contamination occurs, further segregation of paper products can occur at this point;
- Reduction of size of clinical waste bins in areas outside theatre, labour ward and ED to promote good segregation practices;
- Staff education regarding correct segregation at orientation and periodically as needed;
- Waste reduction champions in different areas to promote recycling and segregation practices;
- Reuse of paper for notes, reducing paper use by less printing of electronic documents;
- Staff using their own cups instead of providing polystyrene cups;
- Reuse of binders and other equipment, furniture by offering unused material to other departments;
- Repairing equipment/furniture instead of replacing items (consider contamination);
- New waste minimisation and recycling opportunities to be explored and implemented where possible; and
- Sustainability and energy efficiency to be considered during new development and refurbishing.

6.0 Waste and Materials Reuse Management Plan

6.1 Waste Management Principles

The *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) establishes the waste hierarchy and requires that resource management options are considered against the following priorities:

1. Avoidance – actions to reduce the amount of waste generated and undertaking activities.
2. Resource Recovery – including reuse, reprocessing, recycling and energy recovery, consistent with the most efficient use of the recovered resources.
3. Disposal – an 'end of pipe' option that must be undertaken carefully to minimise any negative environmental outcomes.

Figure 2: Waste hierarchy (NSW EPA 2015)

In accordance with the WARR Act, Waste Management Principles will be incorporated into a detailed construction waste management plan provided by the head contractor.

These include:

1) Waste Avoidance and Reduction

The preferred option in the waste hierarchy is to avoid the generation of waste, or reduce the amount or volume that is produced. Waste avoidance will be facilitated through:

- Careful project planning to minimise the amount of material brought to site. Waste will be avoided by specifying the exact project requirements;
- Good housekeeping practices including material acquisition and inventory control to avoid waste resulting from out-of-date, off specification or excess to project needs;
- Appropriate Storage and Management of materials onsite to limit the potential for damage from weather or plant which will eliminate the need for purchase of replacement products and waste generation.

2) Waste Reuse/Recycling

Re-use and recycling of waste will be encouraged where the generation of waste cannot be avoided. Recycling of waste will be achieved through implementation of the following measures:

- Evaluating waste production processes and identifying potentially recyclable materials;
- Identifying and recycling products that can be reintroduced into the construction and operation processes;
- Investigating and auditing external markets for recycling by other operations located in the neighbourhood or region of the site;
- Waste segregation on site – dedicated bins or areas for collection by a licenced waste contractor
    - General Waste – Glass, Paper & Cardboard and Aluminium
    - Concrete from excavation to be sent to a recycling facilities
    - Natural material will be classified as VENM for offsite reuse.

3) Waste Handling and Storage

Storage and segregation of waste and waste servicing arrangements will be carefully planned as the public will still be accessing the Hospital during the works. Planning for waste storage areas will be considered throughout the project as there are changing locations of construction areas during the various project phases.

The following measures will be required to apply where onsite waste handling and storage is required.

- Provision of clear signage to mark the location and storage of different types of waste.
- Stockpile Management
    - Within designated areas away from drainage lines
    - Limited to 2m height
    - Covered stockpiles
    - Storage on Hard Stand or Plastic sheeting
    - Stockpile concrete, bricks and scrap metal separately.
- Clearly marked waste containers with information such as name of waste, composition (solid/liquid), restricted properties of the waste (corrosive, ignitable) and date of the first waste deposited into the container.
- All servicing arrangements will need to consider the safety of site users.

4) Waste Tracking and Disposal

Waste generated by the project that cannot be either recycled or reused onsite will be disposed of by a licenced waste contractor to an appropriately licenced landfill or recycling facility. All vehicles conveying waste soils will have covered loads when leaving site.

Prior to disposal, waste will be classified in accordance with the requirements of the NSW EPA Waste Classification Guidelines.

A waste inventory will be maintained.

A tracking system will be used to track the waste quantities and types disposed. Documentation will track wastes, including the handling steps and servicing arrangements followed to manage the wastes from the point of generation through to collection, storage, treatment and final disposal.

On and Offsite waste tracking will record for each waste generated:

- Waste generator facility and address;
- Type and identity of transport vehicles associated with the collection and final disposal of waste;
- Date for recycling, treatment and disposal;
- Type of Waste;
- Quantity of waste;
- Method of recycle, treatment or disposal;
- Description of waste, including restricted characteristics (i.e. what makes it a restricted or non-restricted waste).

Waste tracking forms will be used for all wastes moved off-site. The tracking form will record appropriate information about each waste stream and enable control of the waste disposition by confirming receipt by the designated recipient.

6.2 Potential Waste Impacts and Management

Potential impacts associated with poor or inadequate management of wastes generated during the construction and operation of Finley Hospital are outlined in Table 6.

Table 6: Summary of aspects of waste management and potential impacts

Aspect of waste management	Potential impacts
Generation of waste (usage of resources)	• Extraction of resources. • Energy and water consumption associated with processing.
On-site storage of waste in an urban setting	• Increased dust. • Visual impact. • Increased littering. • Sediment laden runoff. • Odours. • Increased pest animals. • Restricted space/site access. • Health and safety of site users and workers.
On-site storage and segregation of waste	• Reduction in reuse of materials. • Cross-contamination of waste. • Contamination of recycling centres.
On-site storage of liquid and/or contaminated waste	• Contamination of surface soils, groundwater, and surface waters. • Odours.
Clinical waste	• Risk to human health.
Waste transportation	• Noise and dust impacts to surrounding sensitive receptors. • Odours. • Mud tracking on roads during construction.
Non-classified or incorrectly classified waste disposal/transport	• Regulatory non-compliance and associated penalties. • Contamination of landfill/recycling centres.
Unlicensed waste transporters removing waste off-site	• Regulatory non-compliance and associated penalties. • Illegal dumping of waste.

6.3 Waste Management Methods

A detailed construction waste management plan will be developed by the Contractor as part of the Construction Environmental Management Plan. The plan will provide further details of the management required for the waste types generated under the works associated with the Finley Hospital Upgrade. As the design progresses, accurate estimates of quantities of building materials prior to construction will ensure that a minimum of waste is generated. Records of waste and recycling collected and disposed of will be collated throughout the construction phase by the Contractor. Un-used materials in a good condition will often be collected by suppliers, facilitating the reduction of the amount of material sent to recyclers or landfill.

The Contractor will be required to achieve compliance with the EPA guidelines.

Following removal of all hazardous materials such as asbestos, lead-based paints, phenols and polychlorinated biphenyls (PCB), where possible, any waste material generated from the Works will be recycled apart from selected soft demolition materials.

A summary of likely waste streams to be generated through construction are identified in Table 7 below, a proposed method for handling, storage and reuse/disposal of each type of waste are also presented.

Table 7: Waste streams and management during construction

Activity	Waste stream	Management
Main Works Package	Structural steel	• Segregation on site (Compound A or B) • Transport or collection to a recycling facility.
	Steel reinforcement	• Segregation on site. (Compound A or B) • Transport or collection to a recycling facility.
	Concrete	• Segregation on-site. (Compound A or B) • Transport to a recycler or use on-site/off-site in road making activities, building, landscaping and construction works in accordance with the requirements of the Recovered Aggregate Resource Recovery Exemption 2014. • Where reuse is not practical concrete has been pre-classified by the EPA as General Solid Waste (non-putrescible) and can be disposed to an appropriately licensed facility by a licensed contractor.
	Plasterboard	• Landfill
	Metals	• Segregation on-site. (Compound A or B) • Transport or collection to a recycling facility.
	Asphalt (for roads and car parks)	• Landfill
	Mechanical - ductwork	• Segregation on-site. (Compound A or B) • Transport or collection to a recycling facility.
	Electrical - metal cable trays, electrical cables, fibre optic cables	• Segregation on site. (Compound A or B) • Transport or collection to a recycling facility.
	Hydraulics – UPVC Piper, Copper pipe, HDPE pipe	• Segregation on site. (Compound A or B) • Transport or collection to a recycling facility

Activity	Waste stream	Management
Site Office and Worksites	General Office Waste – paper, printer cartridges	• Segregation of recyclable wastes and storage on-site • Collection and transport to a recycler
	Domestic Wastes – food scraps, glass bottles, cans, packaging.	• Segregation of recyclable wastes and storage onsite
	Septic and Sanitary systems waste	• Sewerage treatment plant
Plant Maintenance and Chemicals Management	Drums and Containers	• Segregation of recyclable wastes and storage onsite (Compound A or B) • Collection and transport to a recycling facility
	Waste Oil, great, lubricants, oily rags and filters	• Segregation of recyclable wastes and storage onsite (Compound A or B) • Collection and transport to a recycling facility

The storage of waste created by the site through demolition, excavation and general construction works will be specified within the site establishment zones.

6.4 Hazardous Materials Management

Dangerous goods (such as petrol, diesel, oxy-acetylene, oils, glues etc) will be stored in a lockable compound with sufficient ventilation in accordance with relevant codes of practice and standards. Material safety data sheets on all of these flammable and potentially harmful liquids will be provided by the Contractor undertaking the Works.

A separate report has been commissioned to cover the requirements under SEPP 33 – Hazardous and Offensive Development. This assessment has concluded that the quantities of Dangerous Goods to be stored at the proposed facility and the associated vehicle movements do not exceed the thresholds required to classify the facility as 'hazardous'. Therefore, no further assessment is required.

6.4.1 Hazardous Materials Audit

A licensed demolition contractor and/ or the Contractor are to inspect the site to determine the presence of any hazardous materials in accordance with the requirements of AS2601.

6.4.2 Hazardous Materials Management Plan

- A Hazardous Materials Management Plan will be prepared in accordance with the requirements of AS2601 prior to the commencement of any demolition works;
- 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.

7.0 Waste Storage Design and Collection

7.1 Signage

In areas designated for waste disposal, storage, and collection, signage explaining the use of the waste management system will be installed. These signs will indicate the appropriate materials for each recycling bin. Bins will be distinctly marked with labels and colour coding to prevent the accidental mixing of different waste streams. Standardised bin lid colouring will be implemented to identify the storage of general waste, co-mingled recycling, paper/card recycling, food organics, garden organics, clinical waste. These steps are implemented to promote the correct segregation of waste materials and facilitate resource recovery.

Furthermore, clear Work Health and Safety (WHS) signs will be provided where necessary, especially in areas dedicated to waste and recycling, to ensure a safe and compliant environment.

7.2 General waste facilities design

The Waste Management Plan for the Finley Hospital upgrade outlines the safest and most hygienic design aspects to be considered for waste storage room. The plan covers several key areas of facility design and requires the following.

Central Bin Storage Area: This area must be spacious enough to comfortably house the required bins, with each bin requiring a space of at least 700mm by 750mm. Bins will be easily accessible and removable for servicing, necessitating unobstructed access and a minimum passageway width of 1 meter. The area will feature a concrete floor and brickwork walls at least 1100mm high to screen bins from the street. There will be no gates at the entry, and landscaping is required to minimise streetscape impact.

Waste and Recycling Storage Rooms: These rooms must also be adequately sized to fit the necessary bins. The layout will facilitate easy access to all bins, with garbage bins placed closest to the access door to reduce recycling contamination. The room requires a smooth, coved concrete floor, graded to a floor waste connected to the sewerage system if storing putrescible waste. A tap with hose connection for cleaning, brickwork or concrete block walls with cement-rendered surfaces, and a rigid, non-absorbent ceiling are also necessary. The walls and ceiling would be painted with light-colored washable paint. The room needs a self-closing door, accessible from inside without a key, and finished with a smooth, impervious material. Ventilation is required, either naturally or mechanically, along with controllable artificial lighting. Clear signage for correct waste facility use is also mandated.

7.3 Amenity

The design and implementation of waste management systems and structural elements will be focused on additional building amenities. The key considerations throughout the design stages are as follows:

Visual Impact: Visible components of the waste management system must align with the overall design aesthetic of the development.

Noise Control: Measures will be taken to significantly reduce noise, eschewing the use of loud waste management equipment. However, if large amounts of food waste are produced, the Council may mandate refrigeration for waste storage to ease removal challenges posed by the site's location or extended operating hours, thereby preventing disruptive noise.

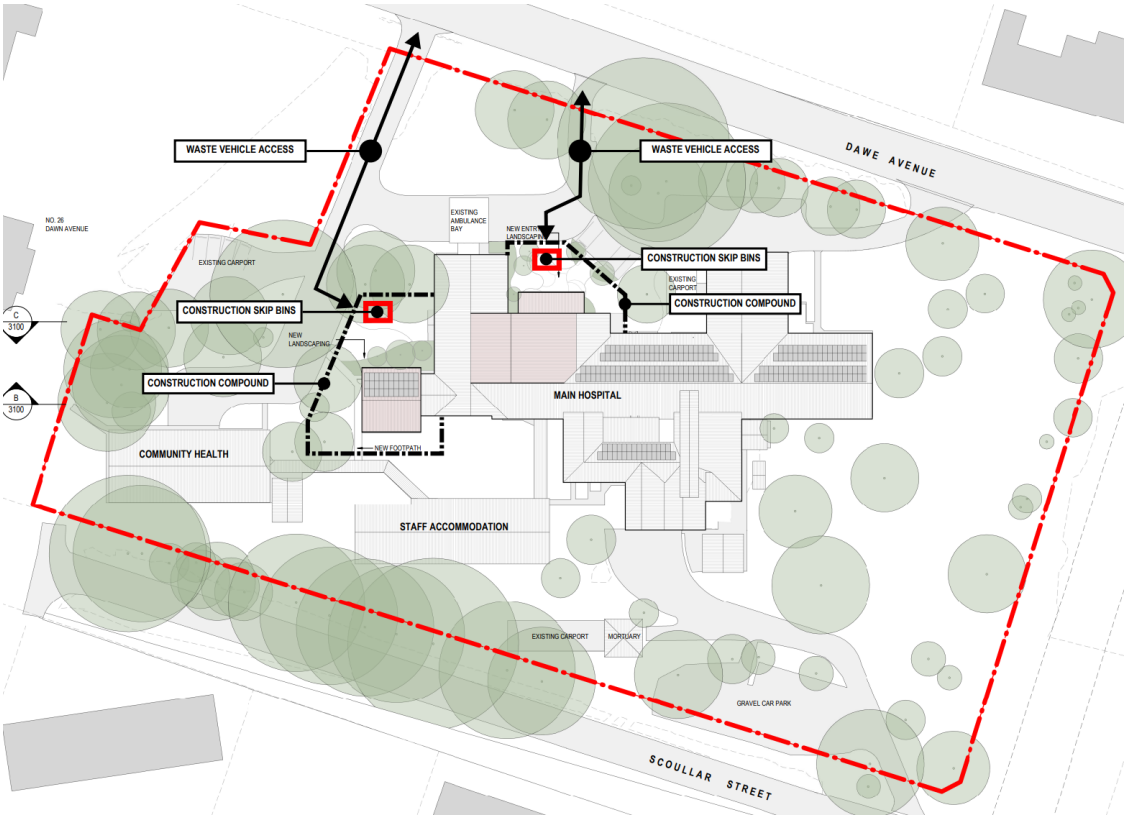
Odour Management: Efforts to minimise odour include using waste containers with tightly fitting lids and smooth, washable interiors. Additionally, all waste storage areas will be equipped with mechanical ventilation systems. Combined with adequate ventilation and regular waste collection, these measures will effectively eliminate odour risks.

This approach ensures a harmonious integration of waste management within the project. The approach has been considered by the consultants to current design stages, and will continue to be considered by the consultants and contractor (when engaged) during design finalisation and implementation.

7.4 Location and access – construction and demolition

The following figure shows the construction and demolition zone, service vehicle routes for construction and demolition waste collection and removal, and the proposed skip bin location during construction and demolition. The skip will be located within the confines of the site, and site compound. The final location will be proposed by the contractor and agreed by the principal. The proposed location below is within the proposed site boundary, away from clinical sensitive areas. The positioning below considers the possible generation of odours from the skip, and the noise disturbance resulting from the collection process. This will not inhibit the flow of traffic through to the main hospital as it is off the main egress route. There is room for an additional skip to allow the contractor to sort between recyclables, reusables and disposables.

Figure 3: Service vehicle routes for waste collection and removal – construction and demolition



7.5 Location and access – operational waste collection

The following figure shows the location of waste collection areas at the conclusion of the redevelopment. There are two internal waste disposal areas, together with a central waste holding area plus clinical waste store in the back of house.

Figure 4: Waste collection points and service vehicle access for management of operational waste

7.6 Frequency of Waste Removal

It is mandatory that written proof of the waste contractor's valid and current license for the collection and disposal of waste and recycling be provided and available on site at all times.

The proposed schedule for construction and demolition waste will be determined in conjunction with the building Contractor.

The proposed schedule for operational waste collection is as follows:

- Regular Waste Streams: The collection of standard waste streams, including general waste, co-mingled recycling, paper/cardboard recycling, and food and garden organics, is scheduled to occur weekly, aligning with standard working days.
- Other Waste Streams: The collection of other categories of waste, such as hard/bulky waste, electronic waste (e-waste), cooking oil, and similar items, will be conducted less frequently. These collections will be organised on an as-needed basis, ensuring efficient and timely disposal.

- Clinical and Sanitary Waste: The collection frequency for clinical and sanitary waste is to be determined by the respective specialised waste removal service providers. These collections will be coordinated in consultation with facilities management, tailored to the specific requirements of these waste types. Clinical waste can be stored for up to four weeks.

It is important to note that these waste collection frequencies are initial estimates and are subject to adjustment both during construction and post-occupancy. Once the building is operational and actual waste generation rates are assessed, the collection schedule can be fine-tuned to better align with the observed needs and efficiencies. This adaptive approach ensures that waste management remains responsive to the actual usage patterns of the building, promoting environmental sustainability and operational effectiveness.

8.0 Waste Management Initiatives

8.1 Best practice separation

8.1.1 Co-mingled & Paper/Cardboard Recycling

Co-mingled and paper/cardboard recycling bins aim to substantially increase the segregation and diversion of recyclable materials from landfill.

It is suggested that the implementation of clear, color-coded signage on these bins to aid in proper waste segregation. Furthermore, prominent and educational posters in key areas will be installed to vividly demonstrate proper recycling methods. This approach is expected to significantly boost the volume of recyclables being correctly sorted and diverted from general waste streams.

8.1.2 Food Organic Waste Management

There is no plan to alter the management of organic waste in the facility at this time as the kitchen facility is not within the project scope.

8.1.3 Bulky and Problem Wastes

The facility's central waste holding area is adequate to support separate holding of bulky and problematic waste streams such as pallets, soft plastics, e-waste, batteries and cooking oils. Collection will be arranged on an as needed basis.

8.2 Waste Education

8.2.1 Roles and Responsibilities

The Head Contractor will be responsible for developing a detailed waste management plan prior to commencement of the construction works. That plan must be consistent with the approach, principles and management methods outlined in this plan, as well as State Environmental Planning Policies and the council's Local Environmental plans and development control plans.

The Contractor will also be responsible for:

- Inducting all contractors and visitors about the relevant aspects of this plan.
- Ensuring all waste management contractors have the necessary qualifications and licenses to remove waste from the site.
- Carrying out periodic audits to check compliance with the waste management plan.

8.2.2 Training and Induction

During construction and demolition, all site personnel and subcontractors will be inducted into the requirements of this plan to in accordance to their level of responsibility. As such, the induction is expected to include the following components:

- The waste hierarchy and associated waste management principles (avoid, reuse, and recycle).
- NSW EPA Waste Classification Guidelines.
- Procedures for handling and storage of wastes.
- Location of waste disposal and storage facilities.
- Actions to be undertaken in the event of a hazardous material spill.

Once construction is complete and the hospital is commissioned, all staff, volunteers and hospital contractors will, as part of their induction, be briefed on the following aspects of waste management:

- The waste hierarchy and associated waste management principles (avoid, reuse, and recycle).
- Location of waste disposal and storage facilities.
- Actions to be undertaken in the event of a hazardous material spill.

Staff and contractors with specific responsibilities for waste management including for the handling and disposal of hazardous waste will be given additional training as required.

8.2.3 Implementation of Murrumbidgee LHD Environmental Sustainability - Initiatives and Strategies

Table 8: Environmental sustainability initiatives and strategies

Objective	Target (KPI/Smart Goals)	Key Initiatives and Strategies	Responsibility/Accountability	Governance/Reporting
Change our behaviour (Waste)	**Resource efficiency and waste** Reduce general waste going to landfill by 10% by 2024.	1. Develop and implement a communication plan for staff to improve sorting of clinical and non-clinical waste. 2. Increase awareness of recycling, reducing single-use plastics, and promoting responsible disposal of e-waste and soft plastics. 3. Enhance the measurement and reporting of landfill diversion and recycling. 4. Implement food organic systems in facility kitchens and cafes.	Sustainability Committee with Kurrajong and Operational Managers, District Managers, HealthShare, and District Leaders.	Monitored via Cluster/facilities and services Waste Management Plans and Waste Audit Results.
	Active Participation Promote and increase attendance/engagement at sustainability-related events by 2024.	1. Encourage staff and consumers to participate in events like Ride2Work, Earth Hour, or tree planting. 2. Identify and celebrate sustainability champions in each facility. 3. Boost completion rates of the 'Sustainability in Healthcare' online module.	Sustainability Committee and District Leaders.	My Health Learning compliance reports.
	Procurement Reduce paper use by 10% by 2024.	1. Explore enhancements to Electronic Medical Records. 2. Set printers to default double-sided and black and white printing. 3. Promote the use of electronic systems like Microsoft Teams/SharePoint for information sharing.	All Staff and Information Services.	N/A

Appendix A - Construction Waste Management Tracking Sheet example

Waste Tracking - Construction

Materials on-site			Destination			
			Reuse and Recycling			Disposal
Type of Materials	Estd. Vol (m3)	Estd. Wst (t)	ON-SITE - specify proposed reuse or on-site recycling method	OFF-SITE - specify contractor and recycling outlet		- specify contractor and landfill site
Estimated Materials						
Garden Organics						
Bricks						
Tiles						
Concrete						
Timber						
Plasterboard						
Metals						
Other waste eg. Ceramic tiles, paints, PVC tubing, cardboard, fittings						