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Ryde Hospital Works

REF Operational Waste Management Plan

March 2024

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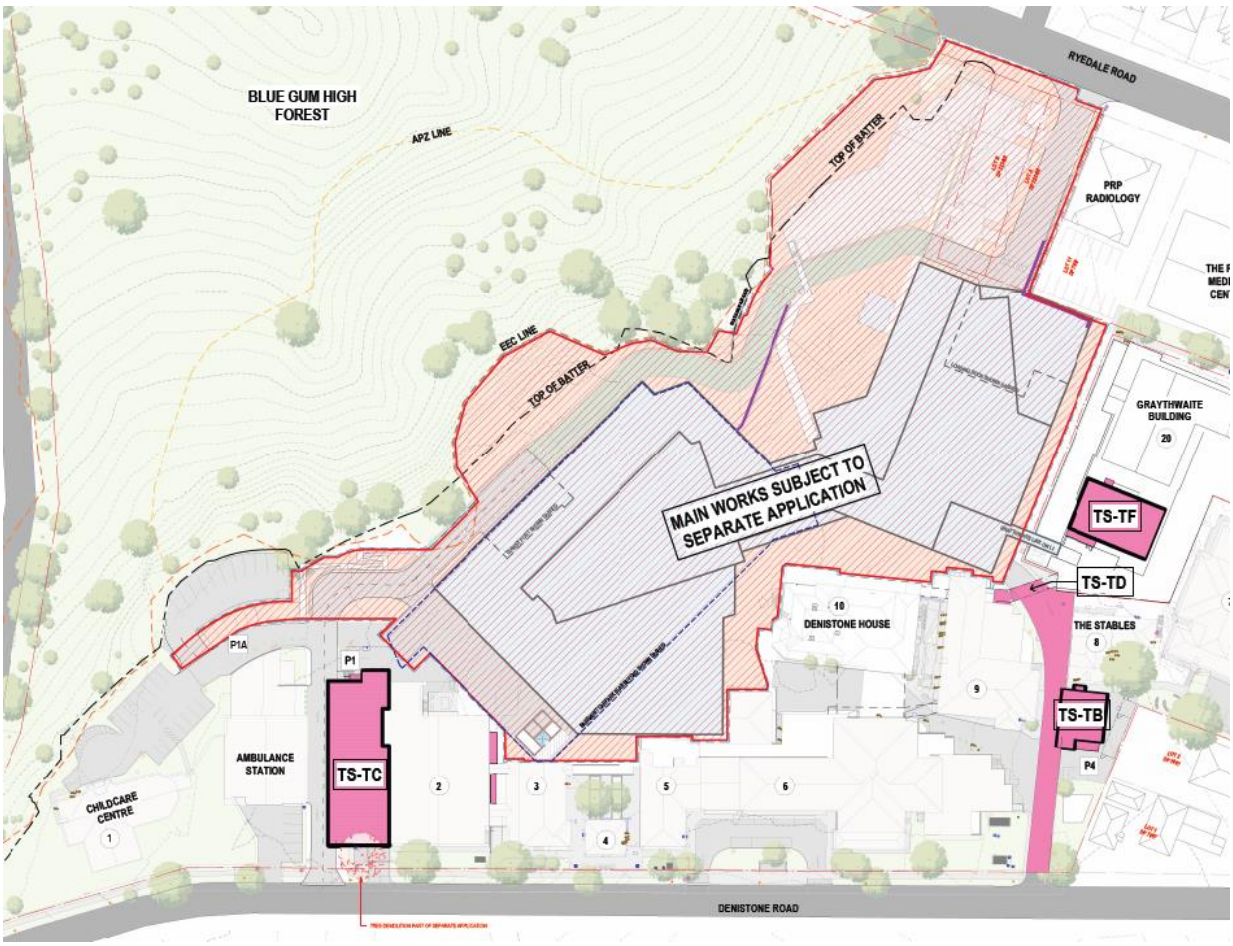
1 Introduction

This REF Operational Waste Management Plan (OWMP) has been developed by Waste Audit & Consultancy Services (Aust) Pty Ltd (Waste Audit) to provide advice and guidance to the proposed Ryde Hospital development works, located at 1 Denistone Road, regarding the effective management of operational general waste and recycling and compliance with current legislation and best practice standards.

The intent of the OWMP is to ensure that waste management practices are consistent across all areas of the development, with the maximum quantity of materials directed away from landfill to more environmentally beneficial outcomes.
The extent of the site is shown below.

Figure 1: Location Plan



2 Applicable Legislation, Standards & Guidelines

The following have been referred to in compiling this report:

- City of Ryde DCP 2014, *Part 7.2, Waste Minimisation and Management*
- NSW *Protection of the Environment Operations (Waste) Regulation 2014, Part 11*
- NSW *Waste Avoidance and Resource Recovery Act 2001*
- NSW EPA *Waste Classification Guidelines* 2014
- NSW *Protection of the Environment (General) Operations Act 1998*
- NSW *Environmental Planning and Assessment Regulation 2021 (EP&A Regulation)*

3 Demolition & Construction Waste

3.1 Scope of Works

The operational and works components of the project are summarised below and illustrated in the drawings in Appendix 4.

Table 1: Scope of Works

Stage	Proposed Work Relevant to this Report
Development Works (including demolition construction)	• Construction of temporary intensive and critical care building • Provision of Temporary Loading dock located off Denistone Avenue • Alterations to the Graythwaite Building and basement to facilitate new office space, kitchens and storage areas • Establishment of two construction zones to accommodate office space, workshops, storage and waste compactors • Construction of a pedestrian ramp that connects between Trigg House and the Graythwaite Building • Connection and augmentation of in-ground services and utilities, as required
Operation	• Ongoing use and operation of the site and its facilities

3.2 Risk Management & Reporting/ Objectives & Targets

Demolition and construction contractors will be required to provide monthly reports to the Project Managers on waste reused, re-processed/ recycled, and sent to landfill.

All reports will include the following information:

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

This Waste Management Plan will be implemented throughout the project's demolition and construction phases. The project's waste management objectives will include:

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

3.3 Management Strategies

The following strategies and materials handling locations will be used to operate over the demolition, construction and fit-out stages of the project:

Table 2: Management Strategies

Management Strategies	Responsibilities
Procurement: Select recycled and reprocessed materials Select components that are reusable after deconstruction	 Architect, Engineer, Builder, Subcontractors Architect, Engineer & Builder
Pre-Demolition: Waste management plan to be reviewed and amended as required to address any changes in project scope Hazardous materials survey to be undertaken prior to commencements of any demolition works	 Project Manager, Builder
Construction On-Site: Use the waste hierarchy principles of avoidance, reuse, reduction, and recycling Minimisation of recurring packaging materials Returning packaging to the supplier Separation and recycling of materials off site Monitor and audit correct usage of bins Monitor and audit waste contractor(s)	 Builder & Waste Contractor Subcontractors Builder & Subcontractors Waste Contractor Builder & Waste Contractor Builder

Table 3: Resource recovery in proximity to Ryde Hospital

Resource Recovery Centre	Materials
Cleanaway Ryde Resource Recovery Centre 145 Wicks Rd, North Ryde NSW 2113	All construction and demolition materials
Concrete Recyclers 14 Thackeray St, Camellia NSW 2142	Construction and demolition materials including concrete, asphalt and paving
Western Sydney Scrap Metal 4 Stubbs St, Auburn NSW 2144 Infrabuild Recycling 909 Pacific Hwy, Central Mangrove NSW 2250	Construction and demolition materials specializing in metals recycling and building materials reuse and recycling

3.4 Hazardous Materials

There are regulatory requirements under Clause 42 of the *Protection of the Environment Operations (Waste) Regulation 2005* that apply to the management of hazardous materials.

3.5 Materials Volumes - Demolition Stage

Table 4 shows estimated quantities of demolition waste to be generated, and management strategies for each type of material, based on the structures to be demolished and vegetation removal.

Waste removal contractors have not yet been appointed at this stage of the project.

Table 4: Demolition Waste (Including Excavation) - Expected Materials

Type of Material	Estimated m^3	Destination/Treatment		
		Onsite (Reuse/Recycle)	Offsite (Reuse/Recycle)	Disposal (Landfill)
Trees & Vegetation	3	Possible onsite reuse	Material to be taken to organic waste facility for processing for reuse in landscaping works	No disposal to landfill
Roofing & Structural Metals	2	No on-site reuse or recycling	Sent for reuse if feasible and/or recycling depending on condition	No disposal to landfill
Structural Timber	3	Possible onsite reuse	Untreated timber collected and recycled at timber yard. Unrecyclable timber will be sent to landfill	Material that cannot be recycled will be sent to landfill
Plasterboard	5	No on-site reuse	Material to be separated onsite and collected by contractor for recycling for use as soil improver with gypsum removed by recycler	Material that cannot be recycled will be sent to landfill
Glass	2	No on-site reuse or recycling	Sent for reuse if feasible and/or recycling depending on condition	No disposal to landfill
Wiring, Electrical Fittings	1	No on-site reuse	Collected by specialist metal subcontractor for separation into different metal types for recycling	No disposal to landfill
Plumbing, Fixtures	2	No on-site reuse		No disposal to landfill
Lighting Fixtures, Lamps (Non-Hazardous)	1	No on-site reuse or recycling	Collected by specialist contractor for recycling	No disposal to landfill
General Waste (All Materials Unsuitable for Reuse/Recycling)	7	No on-site reuse or recycling	Collected by waste contractors for disposal to landfill	Disposal to landfill
TOTAL MATERIALS GENERATED	26	The development's demolition stage will produce around 26 m^3 of materials, of which around 18 m^3 or 70.9% of all materials can potentially be diverted from landfill and recovered for beneficial on-site and off-site reuse and/or reprocessing at specialised facilities.		
TOTAL MATERIALS RECOVERED	18			

3.6 Materials Volumes - Construction Stage

Table 5 shows expected volumes resulting from the construction process, including materials generated from deliveries, such as pallets, pallet wrap, cardboard packaging, and general waste and recyclables disposed of by contractor staff. Waste removal contractors have not yet been appointed at this stage of the project.

Table 5: Construction Waste - Expected Materials Streams

Type of Material	Estimated m^3	Destination		
		Onsite (Reuse/Recycle)	Offsite (Reuse/Recycle)	Disposal (Landfill)
Soft Plastics (e.g. pallet wrapping)	18	Possible onsite reuse	Collected by contractor and taken to recycling facility	No disposal to landfill
Used Pallets	15	Reuse on site for materials storage	Collected by contractor and taken to recycling facility	No disposal to landfill
Paper/Cardboard Recycling	14	Reuse cardboard boxes for storage where possible	Separated onsite into dedicated receptacles and collected by the waste contractor for recycling	No disposal to landfill
Metal Offcuts, Wiring, etc.	12	No on-site reuse	Collected by contractor for separation into different metal types for recycling	No disposal to landfill
General Waste	12	No on-site reuse or recycling	Separated onsite into dedicated receptacles and collected by waste contractor for disposal	Disposal to landfill
Plasterboard Offcuts	11	No on-site reuse	Material to be separated onsite and collected by contractor for recycling for use as soil improver with gypsum removed by recycler	Material that cannot be recycled will be sent to landfill
Floor Coverings	4	No on-site reuse	Collected in designated bin and sent for recycling if of required quality; otherwise sent to landfill	Material that cannot be recycled will be sent to landfill
Recyclable Glass, Metal, & Plastic Containers	9	No on-site reuse	Separated onsite into dedicated receptacles and collected by the waste contractor for recycling	No disposal to landfill
Timber Offcuts	6	Reuse for formwork where possible	Untreated recyclable timber will be collected and recycled at timber yard. Unrecyclable timber will be sent to landfill	Material that cannot be recycled will be sent to landfill
Concrete (Excess)	3	No on-site reuse	Collected by contractor and taken to concrete recycling facility	No disposal to landfill
Glass (Excess)	1	No on-site reuse or recycling	Sent for reuse if feasible and/or recycling depending on condition	No disposal to landfill
TOTAL MATERIALS GENERATED	105 m^3	The development's construction stage will produce around 105 m^3 of materials, of which around 93 m^3 or 88.5% of all materials can potentially be diverted from landfill and recovered for beneficial on-site and off-site reuse and/or reprocessing at specialised facilities.		

4 Operational Stage

4.1 Materials Streams & Volumes

To calculate materials volumes, we have used a combination of data based upon the existing Hospital's operational waste data, data from previous projects, including waste audits conducted by Waste Audit & Consultancy Services as well as standardised waste generation rates based upon no/ hospital beds with 100% occupancy from Part 7.2, Waste Minimisation and Management and City of Sydney Waste Generation Rates.

Tables 7- 9 show expected weekly volumes of materials from the temporary buildings. These have been calculated based on the following waste generation rates (based on full occupancy):

General Waste: 10-litre/ bed/ day
Mixed Recycling: 10-litre/ bed/ day

Additional recycling streams listed in table 6 are designed to reduce waste to landfill, maximise resource recovery, and fulfil sustainability strategy commitments.

Table 6: Essential Materials Streams

Material Stream	Generation factor
General Waste	Occupant bed/day 100m2 floor area/week
Commingled Recycling	Occupant bed/day 100m2 floor area/week
Cardboard & Paper Recycling	100m2 floor area/week
Confidential Paper Recycling	100m2 floor area/day
Medical Waste	100m2 floor area/day
Sanitary Waste	100m2 floor area/day
Pharmaceutical Waste	Variable
Cytotoxic Waste	Variable
Food Organics Recycling	100m2 floor area/week
E-Waste Recycling	Variable

Table 7: ICU/ CCU - Equipment & Collection Frequencies

Material Stream	Weekly Litres	Bin Size (Litres)	No.	Collections Per Week	m^2 Per Bin	Total m^2
General Waste	980	660	2	2	1.22	2.50
Cardboard & Paper Recycling	980	660	2	2	1.22	2.50
Commingled Recycling	980	660	2	2	1.22	2.50
Confidential Paper Recycling	23	240	1	On call	0.51	0.51
*Medical Waste	892	240	3	1	0.51	1.53
*Sanitary Waste	174	28	5	1	0.10	0.50
*Pharmaceutical Waste	69	50	2	1	0.30	0.50
*Cytotoxic Waste	58	50	2	1	0.30	0.50
E-Waste Recycling	10	240	1	On call	0.51	0.51
Circulation Space (+30% of bin footprint)	N/A					11.60
Total	**4,166**					**11.60**

*Distributed evenly across the ICU/ CCU floor

Table 8: FOOD SERVICES - Equipment & Collection Frequencies

Material Stream	Weekly Litres	Bin Size (Litres)	No.	Collections Per Week	m^2 Per Bin	Total m^2
General Waste	1,187	660	2	2	1.22	2.50
Commingled Recycling	1,187	660	2	2	1.22	2.50
Food Organics Recycling	1,187	660	2	2	1.22	2.50
Circulation Space (+30% of bin footprint)	N/A					7.50
Total	**3,561**					**7.50**

Table 9: EXECUTIVE OFFICES/ ENGINEERING - Equipment & Collection Frequencies

Material Stream	Weekly Litres	Bin Size (Litres)	No.	Collections Per Week	m^2 Per Bin	Total m^2
General Waste	180	240	2	2	0.51	1.0
Cardboard & Paper Recycling	92	240	1	2	0.51	0.51
Commingled Recycling	92	240	1	2	0.51	0.51
Confidential Paper Recycling	23	120	1	On call	0.51	0.51
E-Waste Recycling	10	120	1	On call	0.51	0.51
Circulation Space (+30% of bin footprint)	N/A					3.5
Total	**397**					**3.0**

*Calculations and numbers have been rounded up to the nearest decimal

4.2 Bulky Waste Items

A designated 10 m^2 room will be provided for storage of bulky waste items including furniture, mattresses, and broken or obsolete equipment. These will be collected as required by the Hospital's private waste contractor. This room will be located in proximity to the loading area and will be accessible only to authorised site staff. As it will not contain any putrescible waste streams, it will not be required to be mechanically ventilated or refrigerated. Where possible, any items in reusable condition will be donated to charities.

4.3 Clinical Wastes

All clinical and related wastes must be:

- Handled by staff with access to appropriate Personal Protective Equipment (PPE)
- Packaged so that there is no risk of wastes escaping
- Transported and disposed of in accordance with EPA NSW legislation and guidelines and relevant Codes of Practice

In this regard the NSW Health *Clinical and Related Waste Management for Health Services* Policy, August 2017 provides clear guidance and detailed procedures for managing various types of clinical waste. These materials must be stored in uniquely identified receptacles located in separate rooms from all other wastes and recyclables, as per the colour-coding outlined in Appendix 1 and disposed of according to designated Clinical and Hazardous Waste Procedures.

Clinical wastes may include:

- Anatomical
- Laboratory
- Pharmaceutical
- Radioactive
- Sharps
- Cytotoxic
- Chemical

Anatomical, Laboratory, and Sharps wastes must be managed using the following protocols:

1. Community sharps accepted or collected at a public hospital or authorised outlet of the Needle and Syringe Program are classified as clinical sharps waste and must be managed in accordance with this Policy.
2. Genetically modified organisms (GMOs) must be disposed of in clinical waste, except if the GMOs also contain cytotoxic waste, in which case they must be disposed of as cytotoxic waste for incineration.
3. Incontinence pads and disposable nappies can be treated as general waste unless the material is locally judged to come from an infectious patient and (consistent with the *CEC Infection Prevention and Control Practice Handbook*), is visibly blood stained, or is disposed of in unusually large quantities, in which case it must be treated as clinical waste.
4. Sharps containers that are resistant to impact, penetration and leakage, are stable, have integrity of the handles/other carrying features and closure device, and have a capacity indicator (fill line) marked on the outside wall of the container must be used.
5. Reusable sharps containers must be emptied and cleaned before reuse.
6. Microbiological and pathological wastes must be decontaminated in accordance with *Australian and New Zealand Standard 2243.3: Safety in Laboratories* and shredded by the waste contractor prior to disposal.
7. Waste service providers require the application form for approval of a method to treat clinical waste if they collect, transport and treat clinical waste. Refer to the *Guideline for Approval of Method to Treat Clinical Waste*.
8. Reclassify waste in accordance with the EPA step-by-step waste classification process after treatment and before recycling or disposal.
9. For further clarification on requirements for disposal of infectious substances, refer to the most current *Australian and New Zealand Standard 2243.3: Safety in Laboratories*.

Cytotoxic, Pharmaceutical, and Radioactive wastes must be managed as follows:

1. Radioactive sharps must be placed in a clinical sharps bin and the bin must be labelled with a radioactive sticker while the waste is radioactive, the name of the substance, activity level and the date at which it is measured. When radioactivity decays to background, the sticker must be removed and waste disposed of as clinical waste.
2. For requirements on medication handling and recommended destruction of Schedule 8 Medications, refer to NSW Health Policy Directive *Medication Handling in NSW Public Health Facilities* (PD2013_043).
3. Refer to the RPS No.20 *Safety Guide for Classification of Radioactive Waste* for the classification of radioactive waste in consideration of long-term safety and disposal.
4. Refer to the EPA classification guidelines for the step-by-step procedure to classify and manage radioactive waste.
5. For guidance on safe handling, segregation and storage of radioactive waste, refer to Part A2 'Requirements for Radioactive Waste' of the Code of Practice for Radiation Protection in the Medical Applications of Ionizing Radiation (RPS14). The Radiation Management Plan document needs to address dose limit requirements for the public and occupationally exposed persons as provided in Schedule 5 of the Radiation Control Act 1990.
6. The policy and procedure for radioactive sharps waste management is to be determined locally, e.g. storage in a dedicated room.
7. Specific obligations are placed on the responsible person (including obtaining consent) and transporter by the *Code for the Safe Transport of Radioactive Material* (RPS2) which is mandated by the *Radiation Control Regulation* 2013.

Chemical wastes must be managed as follows:

Chemical waste is generated by the use of chemicals in medical, veterinary and laboratory procedures. Chemical waste is to be classified in accordance with the step-by-step process in the *Waste Classification Guidelines Part 1: Classifying Waste* and the ADG Code.

These wastes must be managed and disposed of as per the Safety Data Sheet (SDS) for the hazardous chemical and recommended handling precautions, PPE and disposal.

All containers containing chemical waste must have labelling as per the requirements in Part 3 of Schedule 9 Classification, packaging and labelling requirements of the *WHS Regulation 2017* and the *Labelling of Workplace Hazardous Chemicals Code of Practice*. This applies for a waste product that is reasonably likely to be a hazardous chemical. The waste is to be packed in a container with a label in English including the following for the hazardous chemical:

- Product identifier
- Name, and the Australian address and telephone number of the manufacturer or importer
- Hazard pictogram and hazard statement consistent with the classification of the chemical

A licence may be required for the disposal of high activity level radioactive substances classified as hazardous waste in accordance with the *Waste Classification Guidelines* Part 3: Waste Containing Radioactive Material.

5 General Waste & Recycling

5.1 General Waste

General waste is to be contained in clearly labelled white or opaque bags. General waste is any waste that is not clinical waste:

- Has not been in contact with infectious agents, hazardous chemicals or radioactive materials
- Does not pose a sharps hazard

This material will be managed as follows:

1. Hospital staff will dispose of material into correct bin within bin hubs
2. Cleaners will collect materials and transfer to the bins within storage room
3. Contractor will collect according to designated schedule

5.2 Cardboard and Paper Recycling

Most cardboard packaging will originate from deliveries of supplies and stationery. Paper materials such as non-confidential office paper, newspapers, magazines, etc. will be generated from offices, reception areas, and waiting rooms, and managed as follows:

1. Hospital staff will dispose of paper into correct bin within bin hubs
2. Hospital staff will flatten cardboard boxes and leave in designated area for collection
3. Cleaners will collect materials and transfer to the bins within storage room
4. Recycling contractor will collect from here according to designated schedule

5.3 Commingled Recycling

Commingled recycling consists of all (non-hazardous) mixed plastic bottles and containers, glass bottles, and steel and aluminium cans. This material will have the following separation and collection processes:

1. Hospital staff will dispose of materials into correct bin within bin hubs
2. Cleaners will collect materials and transfer to the designated bins in storage room
3. Recycling contractor will collect according to designated schedule

5.4 Organic Recycling

There are significant opportunities for recycling food organics from the Hospital. The following process is recommended:

1. Hospital staff will dispose of materials into small bins for collection by cleaners
2. Cleaners take separated materials to organics bins in main Hospital bin storage area
3. Recycling contractor will collect according to designated schedule

5.5 Specialised Recycling (E-Waste, Printer Cartridges, Lamps, Batteries)

Variable quantities of e-waste (discarded electrical and electronic items, used printer cartridges, lamps and globes) will be generated from office areas and general hospital operations. A 660-litre bin is recommended for storage of these materials in the main Hospital bin area. Used batteries would be stored and collected separately, or combined with the e-waste materials, depending on contract arrangements.

6 Operational Management Procedures

6.1 Labelling of Waste

All waste containers and bin liners are to be correctly colour coded and identified. The labelling, packing and transport of Division 6.2 Infectious Substances must comply with the ADG Code for dangerous goods. These requirements typically apply for waste classified as UN 2814 (Category A Infectious Substances) and UN 3291 (Category B Infectious Substances).

Portable and mobile bins must be marked, labelled and placarded as required by Chapters 5.2 and 5.3 of the ADG Code. Refer to the SafeWork NSW fact sheet *Packing and Transporting Clinical Waste*. Health service staff will need to liaise with the transporter to ensure they have a transport document describing what is being transported.

6.2 Mobile Garbage Bins (MGBs) & Trolleys

MGBs are re-usable rigid-walled containers used to contain and move clinical and related wastes. Trolleys are used to move clinical wastes contained in plastic bags or non-mobile rigid-walled containers.

MGBs and trolleys must be dedicated solely for collecting and transporting waste to decrease spills, eliminate direct contact with waste and minimise manual handling. MGBs and trolleys must be washable, with a lid that is lockable. MGBs must be securely closed during movement but not necessarily locked, unless the MGB is a pharmaceutical waste bin.

MGBs and trolleys must never be overfilled and the load is to not be more than three quarters full (i.e., less than 55 kg). Waste collection rounds are to be performed as often as necessary to

In addition, MGBs are to be readily inspected and cleaned after each use by the waste contractor. Defective containers must be repaired before use or taken out of service. Plastic bags/liners must have sufficient strength to safely contain waste and be suitable for the purpose if used for moist heat sterilization. Chemical waste containers must be suitable for the chemical contained within and labelled.

6.3 Movement Pathways

Please refer to Appendix 5 for diagrams and descriptions of all materials movement pathways and workflows.

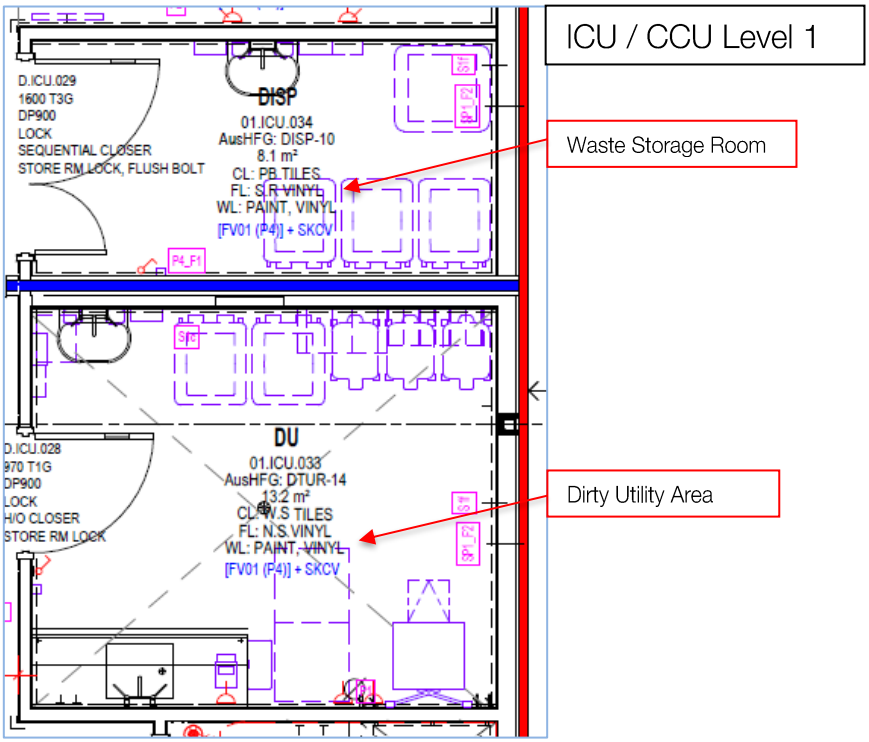
7 Storage & Loading Areas

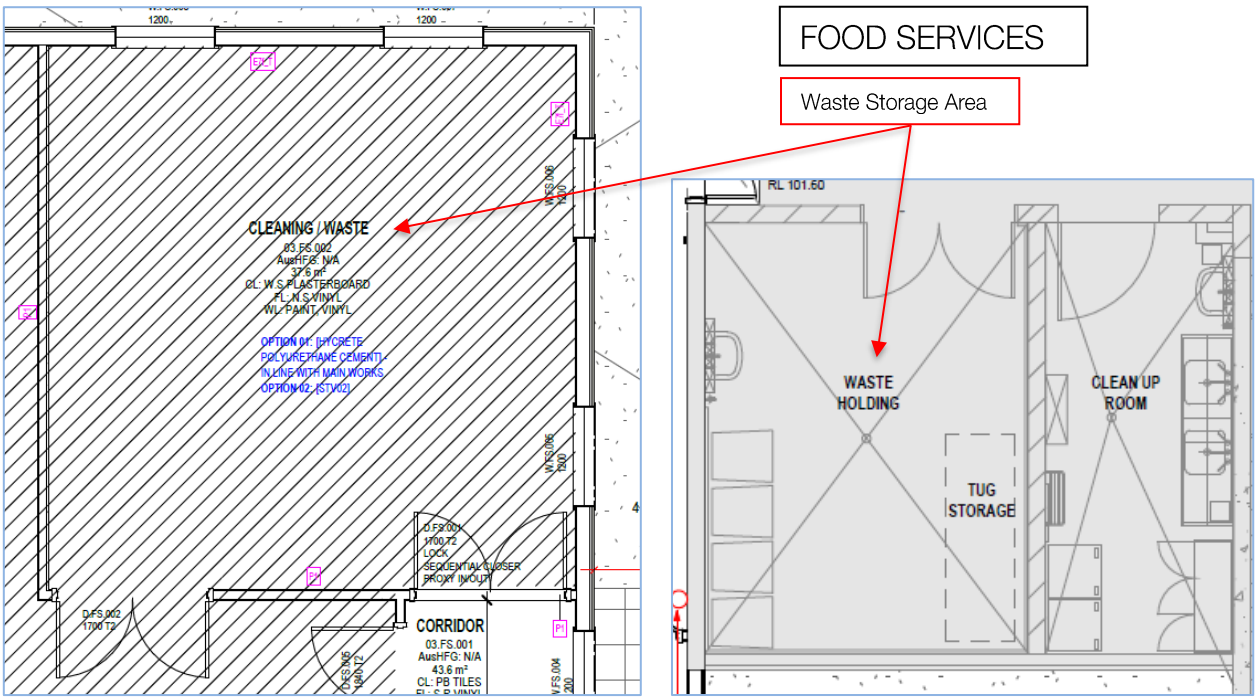
Central clinical, waste and recycling storage facilities will be located in a centralized waste storage area (adjacent the Engineering & Executive offices) with dedicated areas for storage of general waste and recycling and space for bulky goods storage. All rooms will be locked and accessible by authorised staff only and will conform with standard practices and relevant Council specifications.

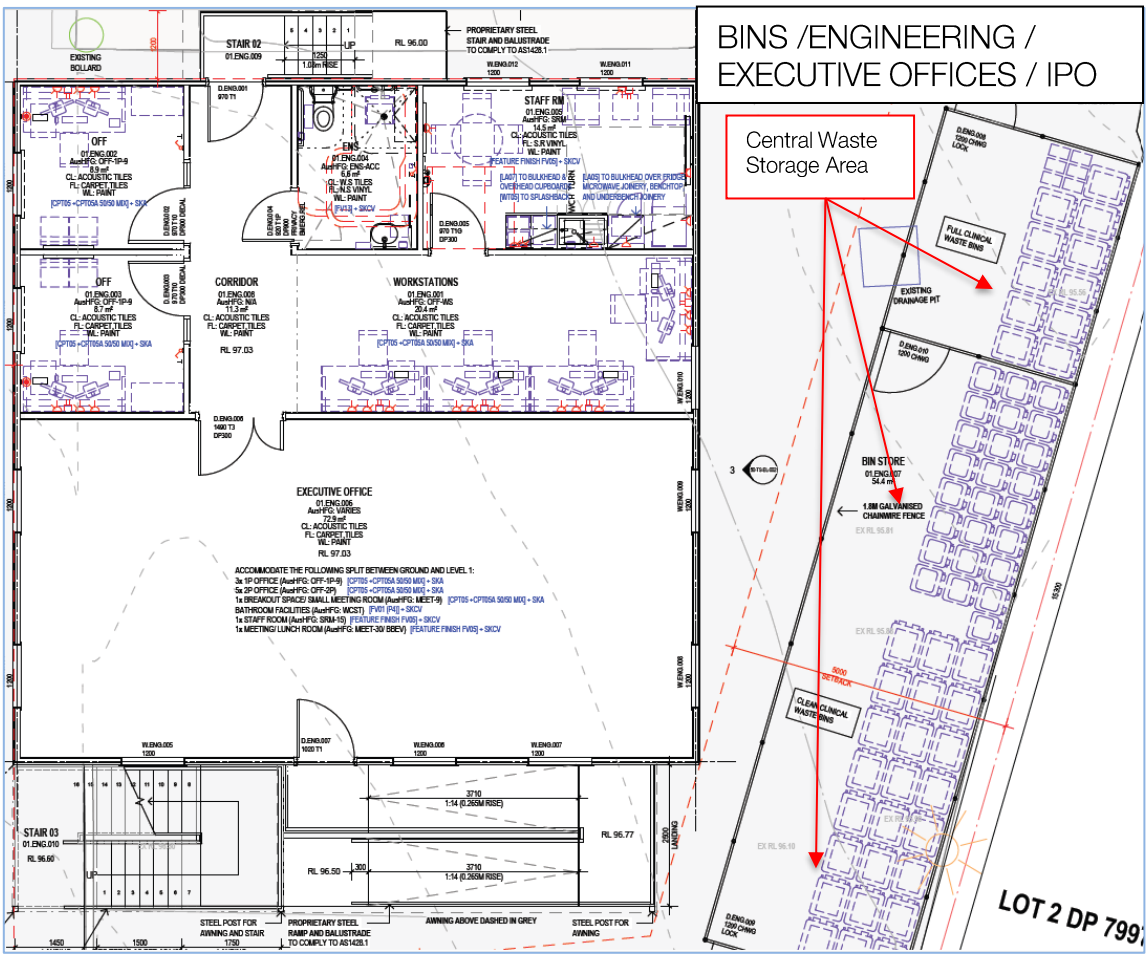
All waste and recycling containers will be clearly differentiated through appropriate signage and colour coding to reflect the materials contained, with each stream located in a designated area with colour-coded signage to assist in easy identification by users.

Individual area waste practices differ significantly due to the difference in waste type generated between the temporary intensive care and critical care building, the additional office space and the food preparation facilities.

Temporary waste storage areas are further detailed below;







8 Internal Bins

Administrative Areas

These areas will be equipped with 4-stream bin hubs for:

- Paper/Cardboard Recycling
- Commingled Recycling
- Food Organics Recycling
- General Waste

Bins will be situated in areas which service a group of workstations and offices, as opposed to having bins under every desk; this improves cleaner efficiencies by reducing the number of bins that require collection and reduces the number of bin liners required. Offices with these types of systems typically achieve higher recycling rates than those with bins at desks or workstations. Colour-coded with translucent bin liners are recommended to assist cleaning staff to distinguish different materials streams.

Figure 2: Four Stream Bin Configuration

Clinical Areas

Clinical areas will have receptacles for the following streams located in dirty utility rooms:

- Commingled Recycling
- General Waste
- Clinical Waste
- Sharps Waste

9 Staff & Contractor Education

An education program will be implemented for all Health Services staff, to ensure the highest possible standard of waste management and diversion resource recovery.

Hospital documents will contain clauses outlining compliance with the development's systems, and a continuing education program will be implemented on an ongoing basis throughout the development's operational phase for all tenancies. New stakeholders will receive detailed information on the waste management and recycling programs as part of their onboarding.

Specific waste management clauses will also be written into cleaning contract specifications, including requirements for cleaning staff to monitor contamination of recycling streams and condition of bins and compactor equipment, and provide Ryde Hospital with feedback on the ongoing performance of the waste management and recycling programs.

10 Waste & Recycling Contractor Requirements

10.1 Transport & Disposal

Transport documents must describe the dangerous goods being transported, and appropriate emergency information for those goods. The ADG Code requirements commonly apply for the packing and transport of the following waste categories:

- UN 2814 (Category A Infectious Substances): Infectious substances affecting humans
- UN 3291 (Category B Infectious Substances): Infectious substances which do not meet the criteria for inclusion in Category A, which includes clinical wastes which are reasonably believed to have a low probability of containing infectious substances. (Refer to Chapter 2.6.3 of the ADG Code for further information on classification).

The SafeWork NSW factsheet *Packing and Transporting Clinical Waste* assists health services with the handling and transport of UN3291 clinical waste in accordance with Packing Instruction P62A of the ADG Code. UN 2814 waste may involve higher hazards and will need to comply with full packing and transport requirements of the ADG Code.

10.2 Servicing & Access

Waste and recycling collection services will be provided by a commercial waste contractor (TBA).

Collection schedules and the appropriate collection frequencies will be determined in consultation with the waste contractor once appointed – however once operational, collection schedules may need to be adjusted accordingly depending on actual waste generation.

All collections will take place from the Loading Area as shown in Appendix 5. It is possible that differently sized collection vehicles may be used for collection of some additional streams; if so, the waste contractor will be responsible for notifying the Hospital in advance of any vehicles entering the site, to ensure specifications (heights and turning circles in particular) are consistent.

11

Operational Resource Recovery Targets

Specific targets for diversion of operational waste from landfill to resource recovery outcomes will form part of the contract between the development and its waste and recycling contractor(s). Using similar developments as a guide, we suggest the following targets:

Year 1: 50% diversion/resource recovery

Year 2: 55% diversion/resource recovery

Year 3: 60% diversion/resource recovery

Following implementation of the new systems, a monthly reporting system, based on the Better Buildings Partnership (BBP) *Operational Waste Guidelines*, will be instituted. This will ensure the accurate tracking of performance, continued improvement, and cost-effective waste removal.

Specific performance clauses and KPIs in waste and cleaning contracts will ensure that all parties actively participate in the resource recovery initiatives and meet regularly to resolve performance issues and identify new improvement opportunities for.

Contractors will be required to report actual volumes and tonnages by stream so that site management can monitor performance and feed this back to stakeholders.

Appendix 1: Clinical Waste Stream Management

The following tables are taken from the NSW Health *Clinical and Related Waste Management for Health Services* Policy and details procedures for management of waste and recycling streams that may be generated by the development's operational phase.

Stream	Anatomical Waste	Clinical Sharps Waste	Clinical Waste (Including 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 May contain clinical material or Genetically Modified Organism (GMO) 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 from an infectious patient) • Lab specimens, cultures or other waste from lab investigations • Waste from medical or veterinary research • Genetically Modified Organisms (GMOs)
Bin Colour	Yellow	Yellow	Yellow
Bin Lid Colour	Orange	Yellow	Yellow
Bin Liner	Orange	N/A	Yellow
Symbol			
Label (if GMOs present)		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 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 may be reclassified in accordance with the Waste Classification Guidelines before recycling or disposal There are special precautions regarding disposal of waste related to cases of viral haemorrhagic fever

Stream	Anatomical Waste	Clinical Sharps Waste	Clinical Waste (Including Pathological Waste)
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

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	Red	Red
Bin Lid Colour	Purple	Red	Red
Bin Liner	Purple	N/A	Red
Labelling of Bins	Cytotoxic waste	Pharmaceutical waste	Radioactive waste plus specific requirements below
Symbol		None	
Label (if GMOs present)	Contains GMOs		

Stream	Cytotoxic Waste	Pharmaceutical Waste	Radioactive Waste
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 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* 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 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) Radioactive sharps 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)
Relevant Act & 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)

Appendix 2: Signage Examples - Hazardous Waste

The examples below are for illustration purposes only.

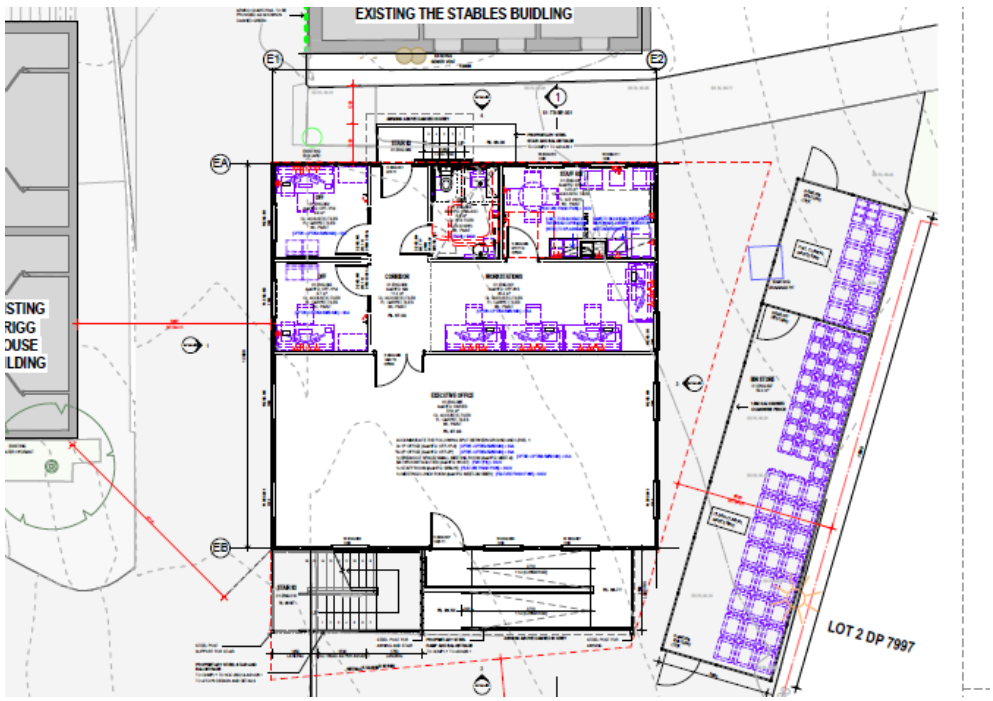
Appendix 3: Signage Examples - Internal & Loading Dock

Appendix 4: Site Plans

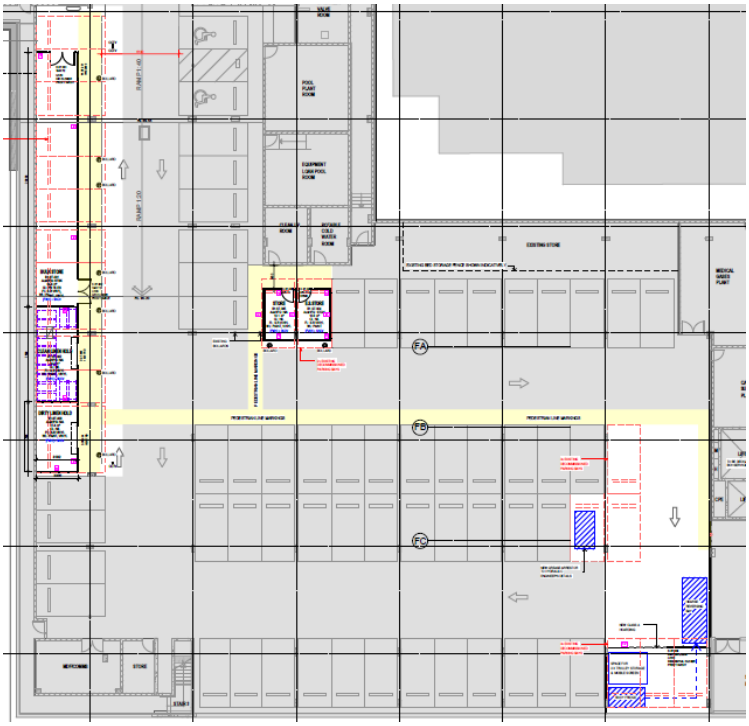
The drawings below show both new and redeveloped structures for REF.

Intensive Care/ Critical Care

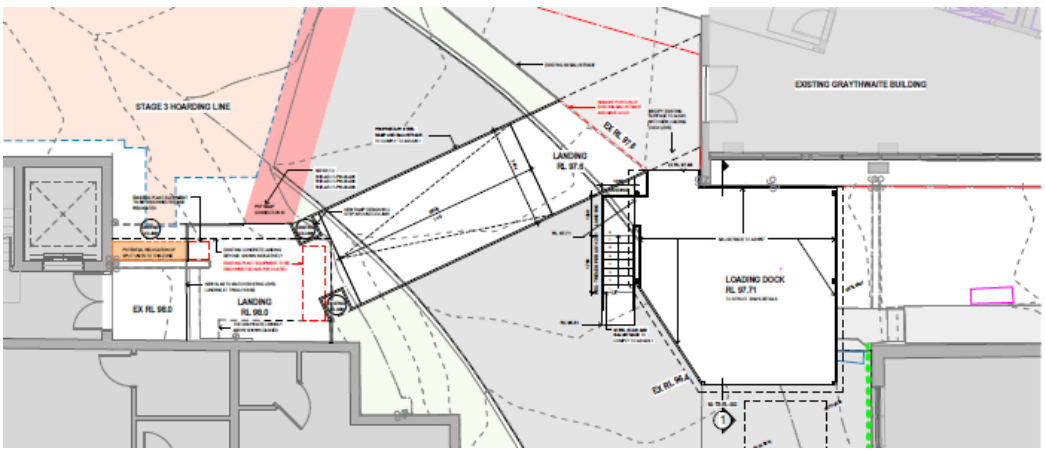
Executive Offices/ Engineering



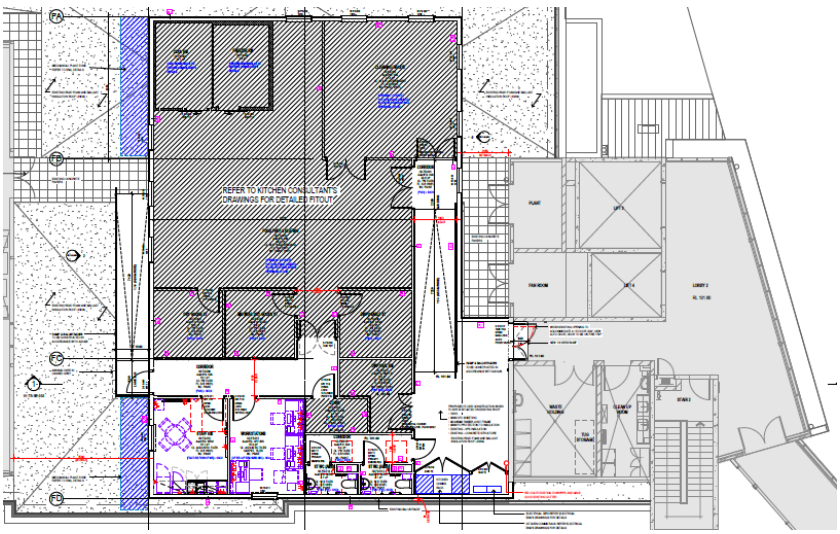
Stores and Linen (plus other associated internal works)



Linkway/ Loading Dock

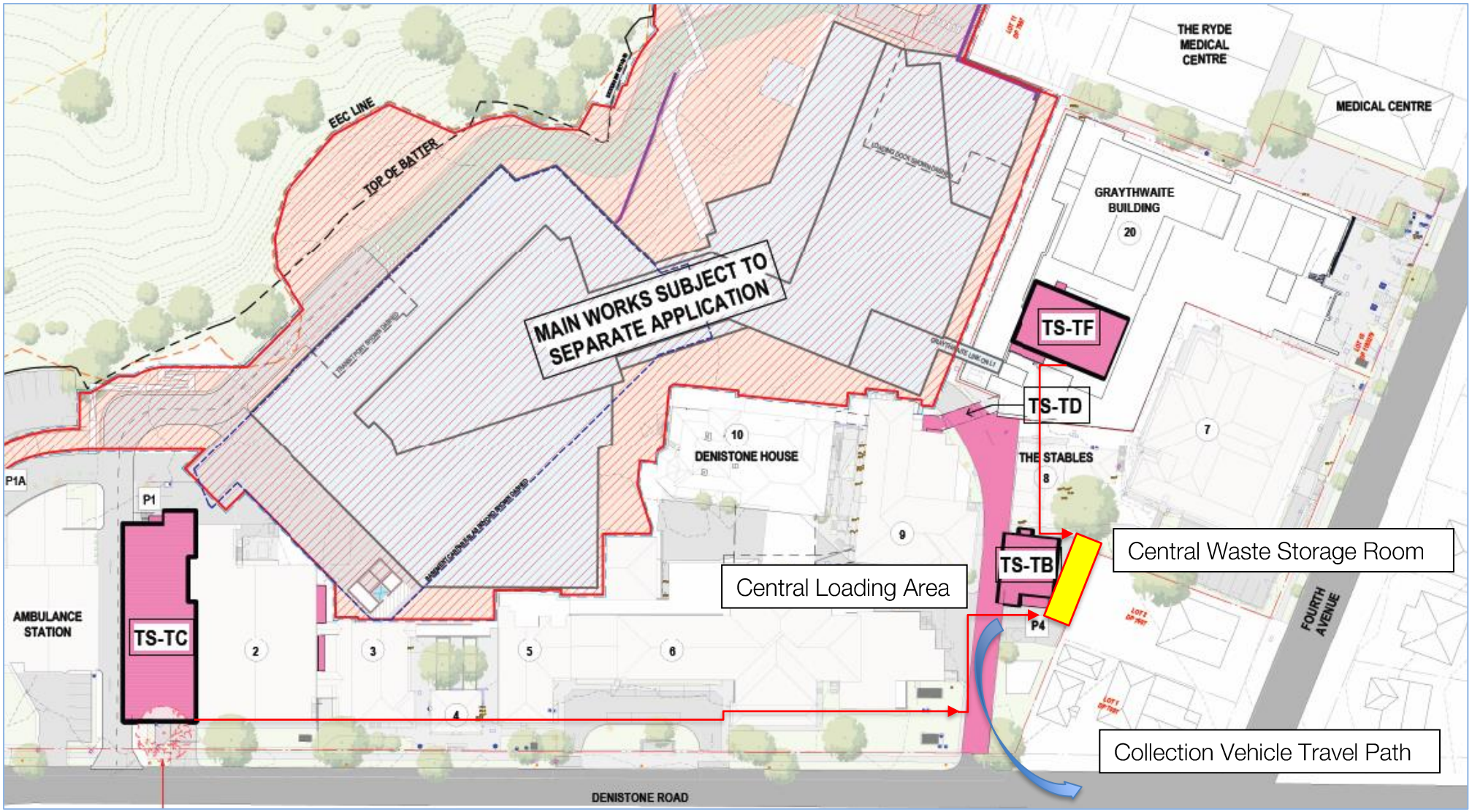


Food Services



Appendix 5: Materials Movement & Collection

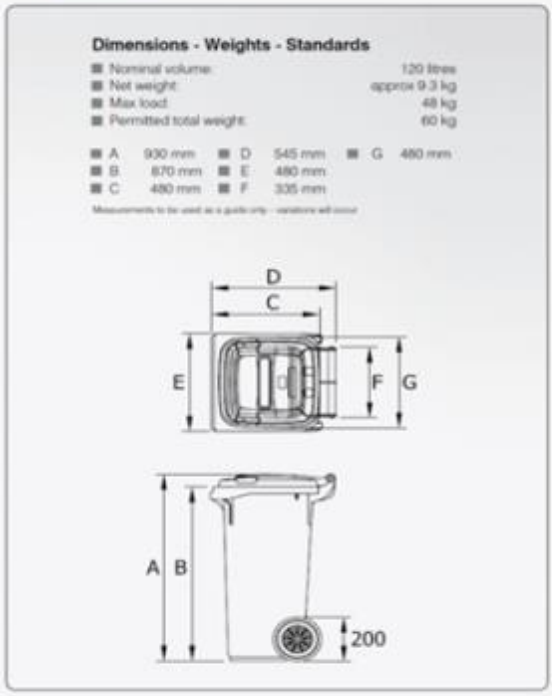
The following diagrams show waste management workflows and travel paths for the development;



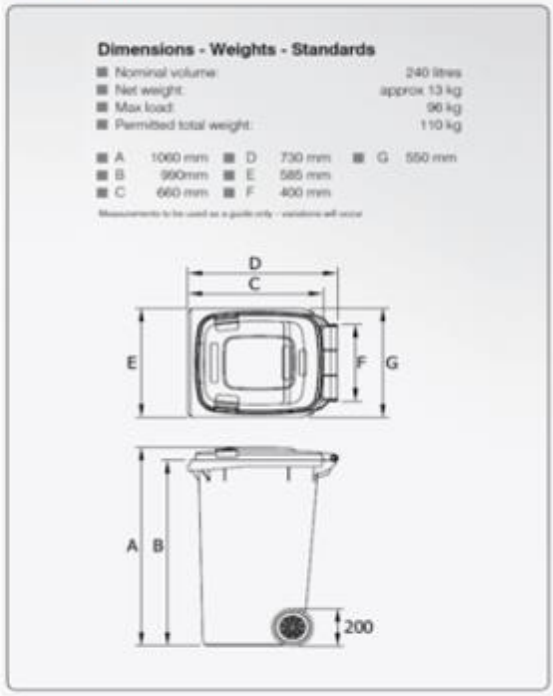
Appendix 6: Waste Management Bins & Equipment

The dimensions shown below are indicative only and may vary from those provided by the development's contractor.

120-litre MGB



240-litre MGB



660-litre MGB

1100-litre MGB

Bin Movers and Tugs

The use of bin movers may be employed to move waste across the site

Appendix 7: Waste Generation Rates

Schedule 3 COMMERCIAL WASTE / RECYCLING GENERATION RATES

This schedule contains information on commercial waste generation rates for various land use activity types, and indicative bin sizes and dimensions. The generation rates are to be used in association with indicative bin sizes (refer Schedule 2) for calculating the number of bins required and size of storage areas. Contact should also be made with Council's Waste Services Manager regarding waste service options to assist in this calculation.

PREMISES TYPE	WASTE GENERATION	RECYCLABLE MATERIAL GENERATION
Backpackers' Hostel	35L/occupant space/week	30L/occupant space/week
Boarding House, Guest House	40L/occupant space/week	35L/occupant space/week
Food premises: Butcher Delicatessen Fish Shop Greengrocer Restaurant, Café Supermarket Takeaway food shop	 80L/100m² floor area/day 80L/100m² floor area/day 80L/100m² floor area/day 240L/100m² floor area/day 10L/1.5m² floor area/day 240L/100m² floor area/day 80L/100m² floor area/day	 Variable Variable Variable 120L/100m² floor area/day 2L/1.5m² floor area/day 240L/100m² floor area/day Variable
Hairdresser **Beauty Salon**	60L/100m² floor area/week	Variable
Hotel **Licensed Club** **Motel**	5L/bed space/day 50L/100m² bar area/day 10L/1.5m² dining area/day	1L/bed space/day 50L/100m² bar area/day 50L/100m² dining area/day
Offices	10L/100m² floor area/day	10L/100m² floor area/day
Shop less than 100m2 floor area **Shop greater than 100m2 floor area**	50L/100m² floor area/day 50L/100m² floor area/day	25L/100m² floor area/day 50L/100m² floor area/day
Showroom	40L/100m² floor area/day	10L/100m² floor area/day
Residential Developments where bin areas are shared	120L/unit/week	60L/unit/week