Morpeth Residential Aged Care Facility

(367 Morpeth Road, Morpeth)

Operational, Demolition and Construction Waste Management Plan

JULY 2018

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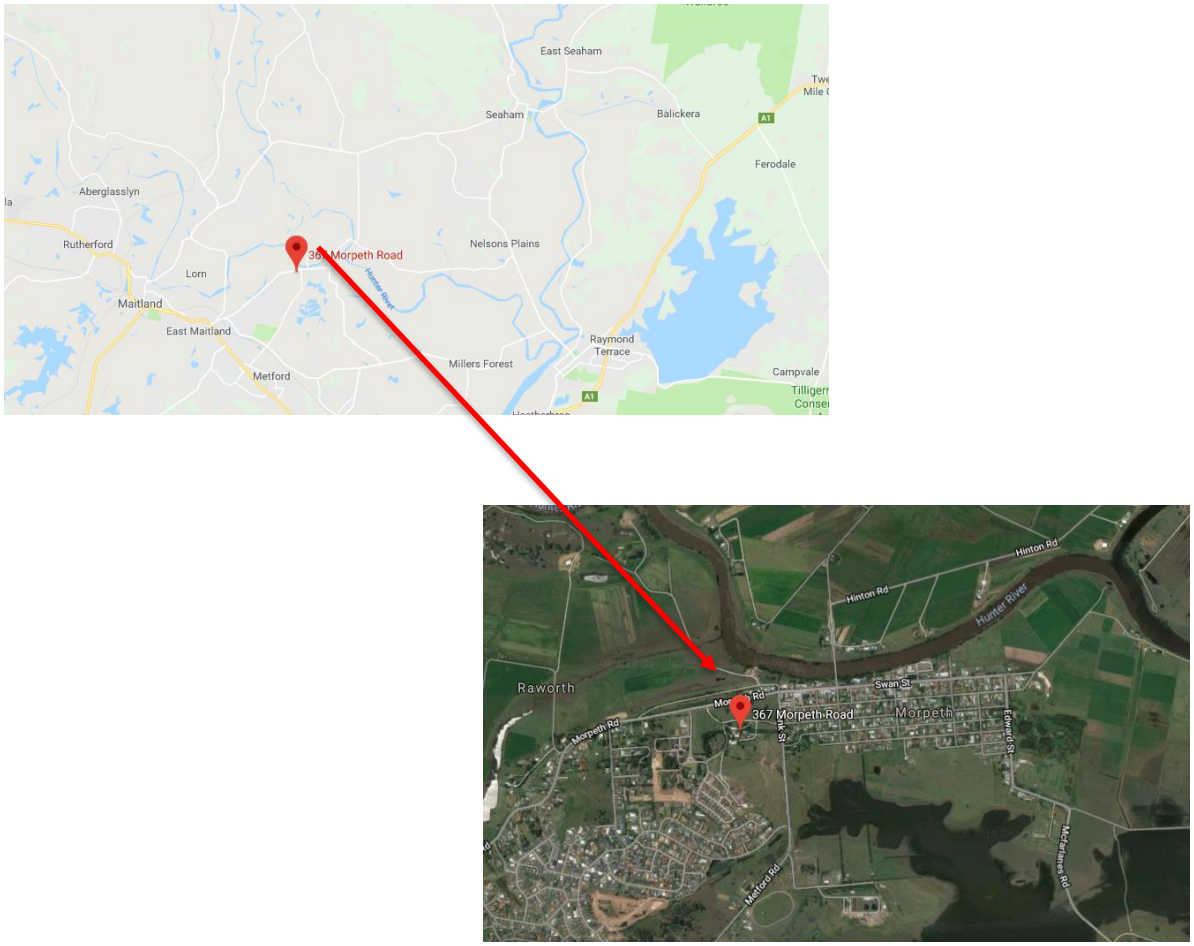
1. Introduction

This Plan details the management of waste during the construction and operational phases of the Morpeth Aged Care Facility (367 Morpeth Road, Morpeth) Development. It has been prepared on behalf of Lend Lease to accompany a Development Application for the site.

This Development essentially consists of 108 standard aged care beds for the frail and elderly. Apart from the aged care beds, the development will also have facilities/services such as; Kitchen, Laundry, Administration/Offices, Gym and Café/Hair Salon.

The location for this development is:



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

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

i. **to minimise the environmental impacts of the operations of the development on the environment** – this will be achieved by ensuring maximum diversion of waste from landfill;

correct containerisation and transport of materials; correct segregation of materials into appropriate management streams; awareness among tenants of waste avoidance practices.

ii. **to minimise the impact of the management of waste within the development on local residents** – this will be achieved by ensuring waste is managed so as to avoid odour and litter and collected during suitable times.

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

The City of Maitland *Development Control Plan 2011 (including Part B Environmental Guidelines – B.6 Waste Not – Site Waste Minimisation & Management)*, the *Better Practice Guide for Waste Management in Multi-unit Dwellings (Department of Environment and Climate Change, June 2008)* and the NSW Office of Environment and Heritage, Model Waste Not Development Control Plan 2008 have been referred to in the development of the waste estimates and related requirements.

2. Operational Waste Management Plan

2.1 Waste Generation

2.1.1 Waste Streams

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

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

Small volumes of clinical waste will be generated from the provision of care to residents. It is anticipated that these volumes will be small and mainly consist of sharps and bandages.

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

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

2.2 Waste Generation Estimates

The following tables show the estimated waste generation for the Development. This is based on the profile of the development as provided.

The following tables show the estimated waste generated from the various components of the development – these estimates are based on averages for quantity of waste generated and composition as determined by industry data (ie., data/information provided by WACS' waste audits conducted in the healthcare sectors) as well as consideration of waste generation rates as detailed in the DCP and the Environment and Heritage publication.

It is estimated that the development will generate a total of approximately **13,440 litres (13.4 m^3)** of waste and recyclables per week (as per the following table).

Waste generation per stream (per week) – residential component

Waste Type	L/week
General Waste	7,840
Food Waste	800
Recycling	4,320
TOTAL	**12,960**

Waste generation per stream (per week) – commercial component

Waste Type	L/day
General Waste	240
Recycling	240
TOTAL	**480**

Note that these calculations do not include clinical waste (estimated at approximately 100 litres/week), and other minor waste types.

Based on the above calculations the following are the bin requirements and associated footprint.

Bin requirements (residential)

Waste Stream	Bin Size (MGB)	No. of Bins	Clearance Frequency/week	Capacity (weekly)	Estimated volume / week	Footprint per bin (m2)	Total Footprint
General Waste	1100	8	1	8,800	7,840	1.04	8.32
Food Waste	120	7	1	840	800	0.28	1.96
Recycling	1100	4	1	4,400	4,320	1.04	4.16
TOTAL		**19**		**14,040**	**12,960**		**14.4**

Bin requirements (commercial)

Waste Stream	Bin Size (MGB)	No. of Bins	Clearance Frequency/week	Capacity (weekly)	Estimated volume / week	Footprint per bin (m2)	Total Footprint
General Waste	240	1	1	240	240	0.42	0.42
Recycling	240	1	1	240	240	0.42	0.42
TOTAL		**2**		**480**	**480**		**0.8**

Based on the above a minimum of 15.2 m^2 is required for the waste storage room – generally though an additional 30% is allowed for so as to enable bin movement etc to occur. This then results in an approximate requirement of **20.3 m^2**. The Development has an allocation of 23 m^2 for waste storage.

The above is based on one collection per week. Increasing collection schedules would reduce the number of bins required and therefore the total footprint. This then reduces the waste storage room floor space requirements.

3. Waste Management Systems/Practices

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

3.1 Waste and Recycling Systems

All residents and staff will be briefed on the proper use of the waste management system, as it is imperative that the recycling streams remain free of contamination to ensure compliance with contractor collection protocols. Residents and staff will be encouraged to maximise the separation of general waste and recyclables to aid the proper disposal of all materials.

To assist, residents will be provided with separate bins for waste and recyclables (within each room). These bins should have a capacity of 15 litres for general waste and 15 litres for recyclables. These bins will then be collected by cleaning staff for transport down to the waste storage room (located on the Lower Ground Floor), for depositing into the appropriate waste/recycling bin.

Similarly with wastes and recyclables generated in other areas (including food waste), facility cleaning or service staff will transport the materials to the waste storage room.

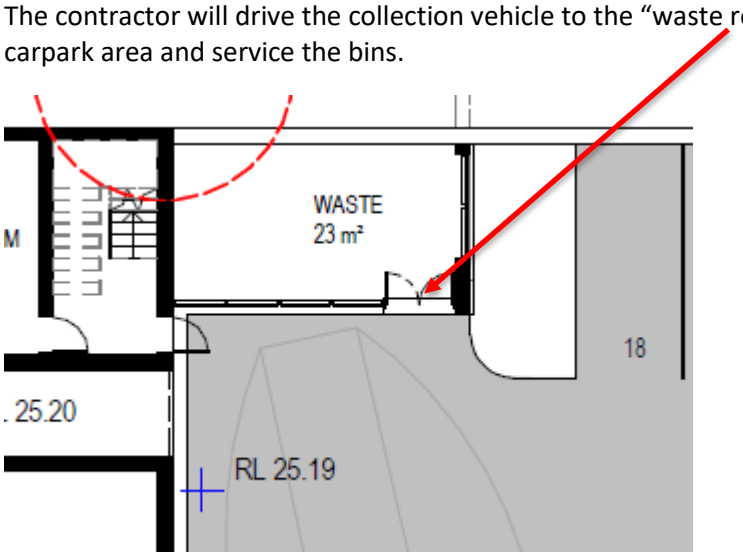
Building management and/or caretaker(s) will be responsible for monitoring the bins located in the waste storage room as to ensure the clear and correct organisation of bins, and to monitor resident recycling practices.

Appendix A contains examples of equipment that can be used for managing wastes/recyclables.

Prior to collection (by the appointed contractor) building management/onsite staff will ensure all bins from both residential waste storage rooms are accessible.

Waste and recycling collection services will be provided by a commercial waste contractor (TBA). Utilising a commercial waste contractor affords greater flexibility regarding 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 – currently the schedule is for once weekly collections.

The contractor will drive the collection vehicle to the “waste room” door positioned in the carpark area and service the bins.



Any green waste that is expected to be generated onsite will be taken offsite and disposed of correctly by a qualified contractor.

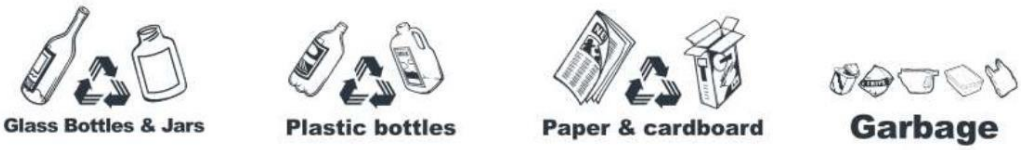
Signage will be a crucial element of the waste management system. Below are examples of the types of signage to be used at the development. These will be located throughout the facility where wastes/recyclables are consolidated (and positioned on cleaning trolleys).

Don't waste YOUR future

Don't waste YOUR future

Example wall posters

Example bin lid stickers



3.2 Clinical Waste

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

All clinical and related wastes must be:

- Handled by staff with knowledge and access to appropriate Personal Protective Equipment
- Packaged so that there is no risk of wastes escaping
- Transported and disposed of in accordance with State EPA legislation and guidelines and relevant Codes of Practice
- If clinical waste is generated, the volumes will be minimal. However, the following principles will apply for management of this waste stream. Sharps containers should be placed within "arms reach" of where the sharp is generated – then the full containers are located in utility rooms awaiting collection by healthcare facility staff and/or contractors.
- These containers will range from 1.0 litre sharps containers through to 40 litre clinical waste drums – all meeting the required standard in terms of construction and colour coding etc. The actual number and sizes to be utilised will depend on the patient's conditions and discussions with the appointed clinical waste contractor.
- It would be unexpected to have cytotoxic waste generated at this facility, but of this was to occur, then dedicated cytotoxic waste containers would be obtained from the contract and placed in appropriate positon in the facility.
- According to the Industry "best practice" waste management manual (*Waste Management Association of Australia, Biohazardous Waste Industry Group, Manual for the Management of Biohazardous Waste, 7th edition, 2014*), storage can be a dedicated and purpose built room or mobile garbage bins – what is appropriate depends on the

type of waste, volumes and servicing processes. For similar types of facilities, the provision of sharps containers is adequate to manage what clinical waste is generated. Should there be a need for additional containers, these can be obtained from the appointed contractor.

- It is intended that as per normal practice for these types of facilities, that the appointed contractor will service the sharps containers/bins from their place of use within the facility and replace them at the same time with empty containers/bins.

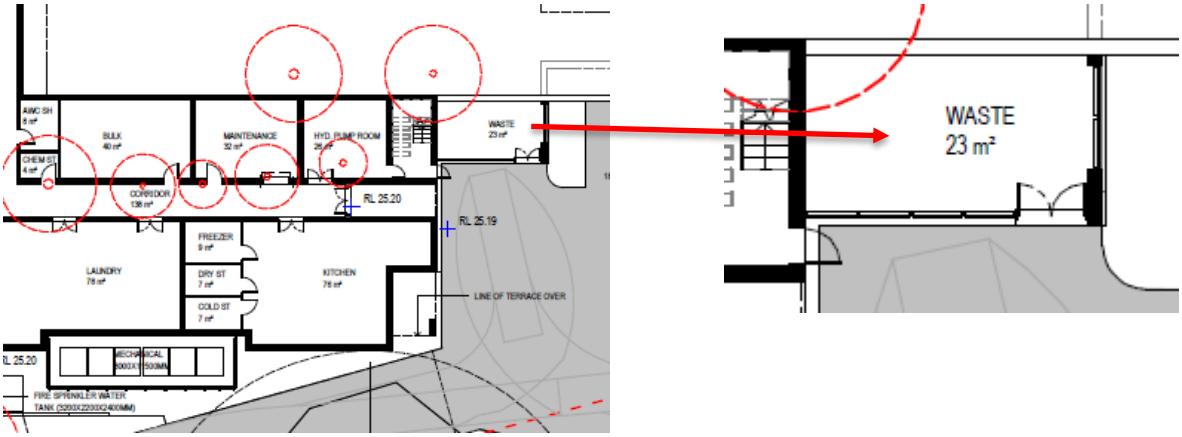
Clinical waste must be stored in uniquely identified receptacles located in separate rooms from all other wastes and recyclables, and disposed of according to designated Clinical and Hazardous Waste Procedures.

3.3 Waste Storage Area

The waste storage area will be accessed by building management and cleaners/staff only, where they will dispose of general waste and recyclables directly into the designated bins.

The storage requirements are based on a once weekly servicing schedule. This collection frequency may be adjusted accordingly to suit the actual waste generation of the facility, thus allowing plenty of scope to manage higher than anticipated waste generation.

The Development has allocated sufficient space for the storage of mobile garbage bins for general waste and recyclables. Based on the above calculations, this is sufficient for the volume of waste and recyclables that will be generated. The following illustrates the location of the waste storage room (Lower Ground Floor):

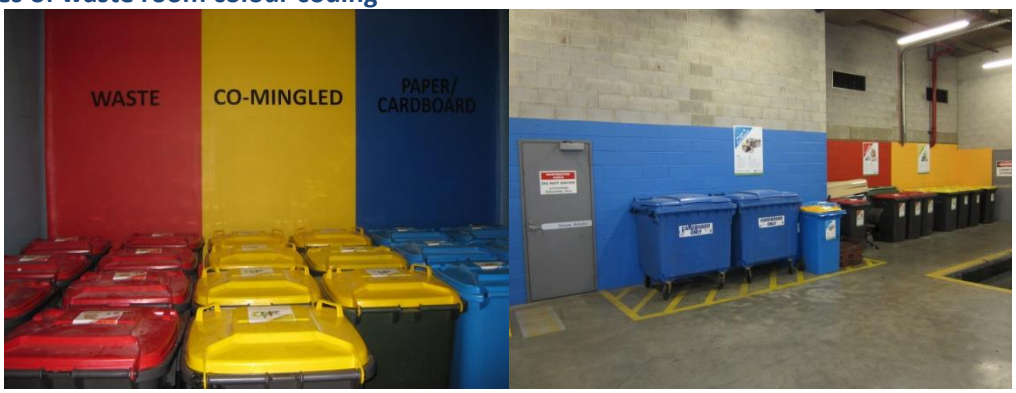


In keeping with best practice sustainability programs, all waste areas; reuse areas and waste and recycling bins will be clearly differentiated through appropriate signage and colour coding to Australia Standards to reflect the materials contained.

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

Examples of the use of colour coding for the waste storage areas is illustrated in the following photographs.

Examples of waste room colour coding



The garbage room will contain the following to minimise odours, deter vermin, protect surrounding areas, and make it a user-friendly and safe area:

- waste room floor to be sealed;
- waste room walls and floor surface is flat and even;
- all corners coved and sealed to eliminate build-up of dirt;
- a water facility with hose cock will be provided for washing the bins;
- any waste water discharge from bin washing must be drained to sewer in accordance with the relevant water board;
- storm water access preventatives (grate);
- all walls painted with light colour and washable paint;
- equipment electric outlets to be installed 1700mm above floor levels;
- the room must be mechanically ventilated;
- light switch installed at height of 1.6m;
- waste rooms must be well lit (sensor lighting recommended);
- waste collection area must hold all bins – bin movements should be with ease of access;
- conform to the Building Code of Australia, Australian Standards and local laws; and
- childproofing and public/operator safety shall be assessed and ensured.

Occupational Health and Safety issues such as slippery floors in waste rooms and the weight of the waste and recycling receptacles will need to be monitored. Cleaners will monitor the bin storage area and all spills will be attended to immediately by cleaners.

3.4 Waste Management Education

All staff and residents will receive information regarding the waste collection systems including how to use the system, which items are appropriate for each stream and collection times. Appropriate signage and updated information will also be provided, as well as receiving feedback on issues such

as contamination of the recycling stream or leakage of the recyclables into the general waste. Facilities management will have the responsibility for these tasks.

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

It is recommended that all signs should:

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

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

3.5 Ongoing Management

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

Staff:

All staff should demonstrate practices in order to ensure that segregated materials are disposed in the correct systems. This process will be agreed with management and a training program implemented by to ensure full understanding by all staff.

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

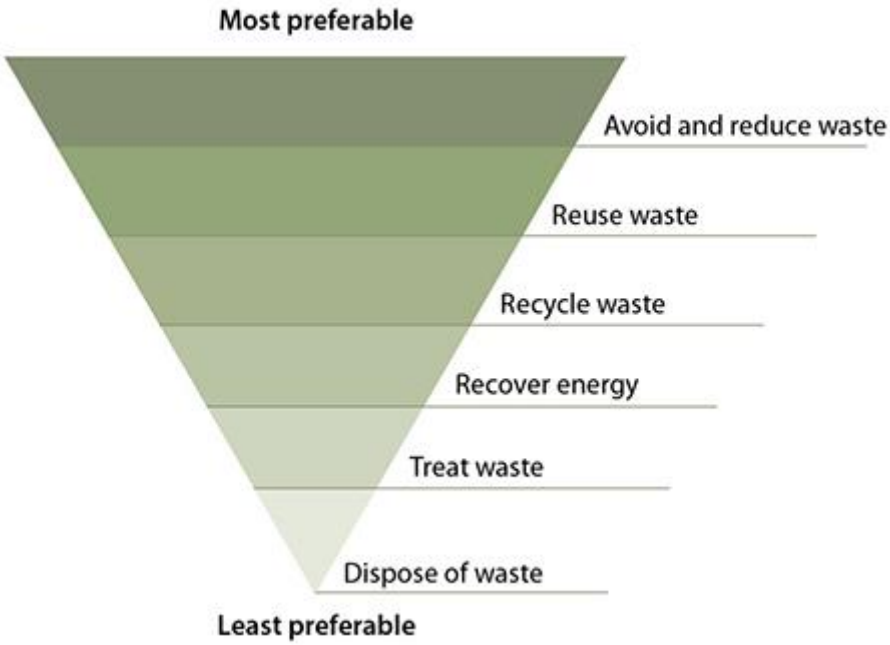
Waste Contractors**:**

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

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

4. Demolition and Construction Waste Management Principles

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



Avoid and Reduce

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

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

Reuse

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

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

Recycling

Identify all recyclable waste products to be produced on site.

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

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

Disposal

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

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

4.1 Waste sources

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

Excavation Material

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

Green Waste

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

Bricks, Tiles, Concrete

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

Timber

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

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

Metals

All metal materials will be reused or recycled as follows:

- Metal drums and packaging to be returned to the supplier
- Any metal suitable for recycling will be separated and stored in a designated scrap metal bin for transport to a metal recycling facility

Paper and cardboard

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

Liquid Waste

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

- Site and vehicle cleaning
- Dust control waste

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

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

4.1.1 Stormwater Pollution Prevention

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

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

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

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

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

4.1.2 Litter Management

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

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

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

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

4.2 Records

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

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

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

4.3 Waste/recyclables storage (on-site)

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

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

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

4.4 Waste/recyclables treatment (on-site)

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

5. Demolition Materials

The tables below detail the different waste streams expected in the demolition phase. The relevant disposal/recycling facilities have not been detailed as the waste contractor and sub-contractors have not yet been appointed for the project.

Based on site reports, demolition activities will focus on residences, sheds, pool, bitumen tracks vegetation and earthworks.

All waste contractors/sub-contractors will be required to detail all intended disposal facilities to ensure that legislative and safety requirements are met, the guiding principles of the waste hierarchy are upheld and maximum diversion from landfill is achieved. As previously stated, records will be required to be maintained by all contractors and made available to Council so as to validate management pathways.

The potential for reuse of materials on-site (and this will be encouraged for both demolition activities as well as considering what could be used for the construction phase of the development), will depend on the quality of the materials once demolition proceeds.

The following table details the estimated composition by m^3 of demolition waste to be generated and management strategy. It is important to note that these are estimates and the important issue is that the materials will be managed so as to avoid wherever possible disposal to landfill.

This process and the management of any excavation and removal of contaminated soil and waste (if identified), from the site will be undertaken and managed by qualified contractors and consultants in accordance with all the relevant standards and regulations and is not addressed in this report.

Waste management systems - demolition

Materials on site		Destination		
Type of material	**Estimated volume (m^3/tonnes)**	**On-site (Reuse or recycle)**	**Off-site (Detail contractor and recycling facility)**	**Disposal (Detail contractor and landfill site)**
Excavation material (non-contaminated soil and rock)	1,000m^3	Will be disposed off-site (however, if required, will be used on-site).	Excavation materials will be collected and used as clean fill by the appointed contractor with appropriate notification as to location and/or forwarded to various facilities such as garden landscapers, or roadworks	No disposal to landfill

Materials on site		Destination		
Type of material	Estimated volume (m^3/tonnes)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling facility)	Disposal (Detail contractor and landfill site)
Concrete	100m^3	Separated on site and crushed for use in pavement and/or temporary access road construction where possible.	Collected by contractor and disposed at concrete recycling facility	No disposal to landfill
Bricks	450m^3	Bricks will be stockpiled and reused wherever possible. Surplus, unused bricks will be crushed onsite and then reused in pavement construction or for temporary access tracks etc if possible.	Acceptable quality bricks collected by a contractor and sold for reuse. Unusable bricks will be collected and recycled at an appropriate brick/rubble recycling facility to be used in aggregate gravel products	Facility TBA upon appointment of contractor[1]
Tiles	75m^3	Broken tiles not suitable for recycling used where possible as material for access roads and paths	Collected by contractor and disposed at recycling facility (for sale for reuse), if tiles are appropriate	Facility TBA upon appointment of contractor
Bitumen	45m^3	Where appropriate used on site for access pathways and roads.	Where feasible the excavated bitumen will be forwarded to a recycling facility.	Facility TBA upon appointment of contractor

[1] The actual site will be finalised once waste/recycling contractors have been appointed.

Materials on site		Destination		
Type of material	Estimated volume (m^3/tonnes)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling facility)	Disposal (Detail contractor and landfill site)
Timber	120m^3	No on-site reuse	Recyclable timber (untreated) will be collected and recycled at appropriate timber yard. Unrecyclable timber will be disposed at landfill	Facility TBA upon appointment of contractor
Plasterboard	100m^3	Where possible, plasterboard waste should be stockpiled and crushed for reuse in landscaping on site	Material to be separated and stockpiled onsite. Collected by the waste subcontractor on a weekly basis (or as required) for recycling. Possible use as soil improver with gypsum etc removed by recycler	Facility TBA upon appointment of contractor
Metals (roofing, fences etc)	80m^3	No on-site reuse	Collected by specialist metal subcontractor for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
Carpet	60m^3	No on-site reuse	This will be disposed of into a designated bin and collected regularly as required for recycling is of the required quality or disposal to landfill	Facility TBA upon appointment of contractor
Glazing	40m^3	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3/tonnes)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling facility)	Disposal (Detail contractor and landfill site)
Vegetation	150m^3	Will be mulched and where feasible used on-site	Collected and disposed at green waste/mulching facility.	No disposal to landfill
Mixed Recyclables (paper / cardboard, commingled)	55m^3	No on-site reuse or recycling	Separated onsite into dedicated receptacles. Collected by the waste subcontractor for recycling. Facility TBA upon appointment of contractor.	To be advised
General waste	80m^3	No on-site reuse or recycling	Separated onsite into dedicated receptacles. Collected by the waste subcontractor for disposal to landfill with the facility TBA upon appointment of contractor.	Disposed into general waste bins onsite and collected by the waste contractor for disposal. Facility (TBA) upon appointment of contractor

Other Materials

A range of other materials may be present on the site once the demolition activities commence.

All potentially recyclable materials are to be separated and stored on-site for an appointed waste/recycling contractor to inspect and to determine the suitability of the material for recycling (or even reuse). If approved for either action, then the contractor can then remove the items.

For materials that are not designated as potentially able to be reused or recycled, then they are to be disposed of at a landfill licenced to receive those specific materials.

6. Hazardous Waste Materials

6.1 Management Procedures

At this stage, no hazardous materials have been identified on the site.

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

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

The key principles that need to be adhered to are[2]:

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

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

In regards to potentially contaminated soil, a Remedial Action Plan is being prepared to ensure that this material is to be managed in accord with applicable regulations.

6.2 Asbestos

Currently, no asbestos has been identified on site. If identified the process for managing what has been suspected of being or containing asbestos waste is as follows:

i. Treat the material as asbestos unless proven otherwise
ii. Do not disturb the material (ie., shift or place into a container) at all
iii. Seek advice from a suitably qualified laboratory to test the material(s) to determine if it is or is not asbestos.
iv. If determined not to be asbestos, then it can be managed as an inert waste.
v. If determined to be asbestos then managed by a licenced contractor for packaging, removal and disposal.

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

vi. If the material has accidently been uncovered, then the area should be cleared, barriers erected to prevent access, NSW WorkCover and EPA notified, and if broken, covered with a fine spray/mist of water.

For what has been conclusively identified as asbestos containing materials (including soils), a specialist/licenced asbestos contractor will be used. As required, only workers trained in asbestos removal techniques will be allowed to manage the removal of asbestos contaminated soil and any contained on the buildings.

In regards to disposal of asbestos containing materials, there are regulatory requirements under clause 42 of the Protection of the Environment Operations (Waste) Regulation 2005 that apply to the management of asbestos waste, including:

- Waste must be stored on the premises in an environmentally safe manner.
- Non-friable asbestos material must be securely packaged at all times.
- Friable asbestos material must be kept in a sealed container.
- Asbestos-contaminated soil must be wetted down.
- All asbestos waste must be transported in a covered, leak-proof vehicle.
- Asbestos waste must be disposed of at a landfill site that can lawfully receive this waste. Always contact the landfill beforehand to find out whether asbestos is accepted and any requirements for delivering asbestos to the landfill.
- It is illegal to dispose of asbestos waste in domestic garbage bins.
- It is also illegal to re-use, recycle or dump asbestos waste

These requirements will be adhered to.

7. Construction Materials

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

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

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

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

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

Waste management systems - construction

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Concrete	35m^3	No on-site reuse	Collected by contractor and disposed at concrete recycling facility	Facility TBA upon appointment of contractor
Timber (formwork and construction)	45m^3	Separated and where feasible, reused for further formwork	Unused material separate and stockpiled onsite. Collected by specialist timber subcontractor for recycling	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Brick	$25m^3$	No on-site reuse	Unusable bricks collected by contractor and disposed at brick recycling facility	Facility TBA upon appointment of contractor
Plasterboard	$15m^3$	Unused material taken back by supplier for reuse where possible	Material to be separated and stockpiled onsite. Collected by the waste subcontractor on a weekly basis (or as required) for recycling. Possible use as soil improver with gypsum etc removed by recycler	Facility TBA upon appointment of contractor
Ferrous Metals (eg., roofing, cladding, balustrades, fittings, door frames, guttering, studs etc)	$25m^3$	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Non-Ferrous Metals (eg., wiring)	$10m^3$	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Glazing	$6m^3$	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling by a facility	Facility TBA upon appointment of contractor

Materials on site		Destination		
Type of material	Estimated volume (m^3)	On-site (Reuse or recycle)	Off-site (Detail contractor and recycling contractor)	Disposal (Detail contractor and landfill site)
Carpet/Underlay	$15m^3$	No on-site reuse	This will be disposed of into a designated bin and collected regularly as required for recycling if of the required quality or disposal to landfill	Facility TBA upon appointment of contractor
Plastics (eg., plumbing fixtures)	$25m^3$	No on-site reuse	Contractor appointed to collect and recycle	No disposal to landfill
Mixed Recyclables	$45m^3$	No on-site reuse	Contractor appointed to collect and recycle	No disposal to landfill
General waste	$60m^3$	No on-site reuse	No recycling or reuse	Facility TBA upon appointment of contractor

8. Work Plan

Following the appointment, more detail as to the process for demolition activities will be known and evaluated to ensure that Council requirements are met. It will be a condition of appointment that the contractor(s) will develop a Work Plan and it will be lodged with Council if required.

A copy of AS 2601-2001 The demolition of structures will be kept on-site and during site induction, all workers will be advised as to the requirements contained within the Standard.

It is envisage that the following will be included in the Work Plan.

The proposed methods of demolition to be used (including any machinery or equipment);

The demolition contractor will be required to detail all machinery that will be used on-site as well as for transporting materials off-site. This includes vehicles to be used by waste/recycling contractors.

All operators of machinery will be required to provide evidence of licences and insurances to operate machinery.

All machinery will also have to be in good working order.

Safe work method statements will be required for all aspects of the demolition and for the use of machinery.

Estimated time for the demolition to be completed;

It is difficult to state with accuracy the actual time for the demolition activities to occur (ie., be completed), due to issues such as weather and other unforeseen issues.

Once the contractor(s) have been appointed a timeframe for demolition activities will be developed.

Hours of operation;

Hours of all demolition activities will be restricted to what is required under Council and other regulatory obligations.

There are some residential premises near the site for development as so all contractors will be required to ensure that hours of operation (ie., noise, dust and other adverse impacts), do not cause nuisance to the or other premises nearby.

Details of any required hoardings;

At this stage, apart from signage indicating Health & Safety requirements and stating contractor contact details (as per regulatory obligations), there is no intention to have any hoardings.

However, should any hoardings be required, a separate application to Council will be made.

Details of any proposed sediment control measures;

Refer to the Civil drawings for all erosion and sediment control measures as shown on the following drawings 253824-BE-CD-07-01 and Details 253824-BE-CD-076-01

For all construction work, contractors will be responsible for undertaking activities that minimise sediment generation and this will be required to be included in their Work Plan as to the methodologies to be used.

Aspects that will be required to be provided in the Work Plan for demolition and building contractors includes the actual techniques and equipment to be used to prevent sediment reaching waterways (including stormwater), as well as techniques in demolition that reduce stormwater entering areas where sediment could then be generated (eg., use of slopes on the ground when undertaking earthworks) as well as wheel-washers to prevent sediments being deposited on access roads.

Site access.

Site access will be controlled by a gatekeeper and there will be clearly signed and controlled entry and exit points.

The site will be protected by fencing and all gates locked when the site is not being occupied (ie., demolition or construction activities).

Site access will only be granted to those who have attended site induction and/or required to be on site due to their employing organisations requirements (eg., Council or WorkCover officers).

Site Plan

A Site Plan illustrating the location of storage areas for waste and recyclable materials will be included in the Work Plan.

9. Contracts and purchasing

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

The Head Contractor will ensure each subcontractor:

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

The Site Manager will be responsible for:

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

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

10. Training and Education

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

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

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

Appendix A – Waste Management Equipment

The following diagrams illustrate colours and sizes of different bins that could be used within the development.

Figure 1 – MGB bin

Figure 2 – MGB bin

Figure 3 – Indicative size of MGB

Figure 4 – Clinical waste containers

Figures 5 and 6 – Bin movers