Waste Management Plan

Address: 11-17 Mosbri Crescent, The Hill

Proposal: Residential Accommodation, 172 Dwellings Comprising Three Residential Flat Buildings (161 Dwellings) and Multi Dwelling Housing (11 Dwellings), associated Car Parking (242 Spaces), Earthworks, Landscaping, Demolition / Site Works and Strata Subdivision (172 lots)

1 Introduction

This Waste Management Plan (WMP) pertains to the proposed development at 11-17 Mosbri Crescent, The Hill. This WMP addresses all phases of the proposed development, including demolition, earthworks, construction and ongoing management of waste for the building.

The proposed development consists of the demolition of all existing structures on site, excavation works, mine grouting works and the construction of residential accommodation comprising 172 dwellings, including 11 x two storey townhouse style dwellings fronting Mosbri Crescent and three residential flat buildings (Building A, B, and C) containing 161 dwellings.

Table 1 documents the proposed apartment mix.

Table 1 – Residential Apartment Mix

Type of Apartment	Apartment Mix
1 bedroom	34
2 bedroom	98
3 bedroom	40
TOTAL	**172**

This Plan has been developed in accordance with the Newcastle Development Control Plan 2012 (DCP) 2012, Newcastle City Council Waste Management Technical Manual and the Better Practice Guidelines for Waste Management in Multi-unit Dwellings.

1.1 Objectives of WMP

In accordance with Newcastle Council DCP 2012 and Waste Management Technical Manual, the overall objectives for management and minimisation of waste within the proposed development are:

- To facilitate sustainable waste management within the local government area in an environmentally sustainable manner;
- To ensure waste is transported and disposed of in a lawful manner;
- To minimise resource requirements and construction waste through reuse and recycling and the efficient selection and use of resources;
- To minimise demolition waste by promoting adaptability in building design and focusing upon end of life deconstruction;

- To encourage building designs, construction and demolition techniques which minimise waste generation;
- To maximise reuse and recycling of household waste and industrial/commercial waste;
- To ensure waste management systems are compatible with collection services; and
- To minimise risks associated with waste management at all stages of development.

2 Demolition & Construction Stage

Objectives:

1. *Optimising adaptive reuse opportunities of existing building/structures.*
2. *Maximise reuse and recycling of materials.*
3. *Minimise waste generation.*
4. *Ensure appropriate storage and collection of waste.*
5. *Minimise the environmental impacts associated with waste management.*
6. *Avoid illegal dumping.*
7. *Promote improved project management.*

Demolition

The management of waste on site during demolition will be in accordance with Table 2 – Demolition Phase Waste. This is to ensure that any asbestos-containing material encountered on site is appropriately and legally managed.

Table 2 – Demolition Phase Waste

Type of waste generated	Estimated Volume in m^3 or area m^2 or weight in tonne (t)	Reuse and Recycling		Disposal
		On-Site	Off-Site	
Garden waste	25 tonne	Chipped and stored for reuse in landscaping where possible.	Remainder sent to green waste facility for compost/re-use or Summerhill.	
Glass	15 tonne	-	Sent to local glass recycler or Summerhill	
Timber	10 tonne	Reuse for formwork and chips for landscaping.	Remainder disposed of at Summerhill waste recycling facility by contractor	
Concrete/brick	115 tonne		Unused disposed of at local concrete recycling facility by contractor	Concrush, Racecourse Rd, Teralba

Metal	30 tonne	-	Sent to local metal recycler	Hunter Recyclers 8 Gross St, Carrington
Excavated material including soil, rock.	TBC		Take off site for reuse as clean fill elsewhere.	Summerhill Waste Facility by contractor
Any contaminated or asbestos-containing excavated material	Unknown volume			Managed and disposed of at licensed facility

Notes

1. Details of the exact quantities to be confirmed upon detailed site investigation during Construction Certificate process.

2. The site contractor, prior to commencement of any works, will erect a suitable 1.8 metre high fence on the site to encircle the work area.

3. The site will be closed during the demolition phase.

The existing site access shall be maintained for construction vehicle access. As indicated on the civil plans, appropriate sediment and erosion control measures shall be installed on site and a suitable all-weather construction vehicle access provided.

Construction

The likely generation of waste during construction is summarised in Table 3, using approximate figures.

Table 3 – Construction Phase Waste

Type of waste generated	Estimates Volume in m^3 or weight in tonne	Reuse and Recycling		Disposal
		On-Site	Off-Site	
Glass (windows, mirrors, lights)	<1/2 tonne		Local recycling facility, Summerhill.	
Timbers	2 tonnes		Local recycling facility, Summerhill.	
Metals / masonry / concrete	1 tonne		Local recycling facility. Hunter Recyclers: 8 Gross St, Carrington and Concrush: Racecourse Rd, Teralba	

Gardening waste (including external timber element waste/offcuts and)	<1 tonne		Local green waste facility or Summerhill Facility.	
Plasterboard (offcuts)	5 tonnes			Unused disposed of at Summerhill Waste Facility by contractor
Fixtures and fittings	Nil (pre-ordered)		N/A	N/A
Packaging (including used pallets, pallet wrap, cardboards)	2 tonnes		Pallets reused where possible	Unused quantity disposed of at Summerhill Waste Facility by contractor
Other waste e.g. pvc plastics, paints.	2 tonnes			Disposed of at Summerhill Waste Facility by contractor
Excavated Material (mine grouting)	920m^3	Re-used in mine grouting where possible	Take off site for reuse as clean fill elsewhere.	Unused quantity disposed at Summerhill Waste Facility by contractor
Excavation Material (construction)	32,500m^3		Take off site for reuse as clean fill elsewhere.	Summerhill Waste Facility by contractor

Notes

1. Location of demolition and construction waste facilities to be confirmed upon engagement of site contractor and tendering process.

2. The site will be closed during the construction phase.

The quality of excavated materials shall be managed in accordance with the recommendations of the Contamination Assessment prepared by Coffey dated 23 June 2019, including that an unexpected finds protocol must be included as part of the Construction Environmental Management Plan or as a stand-alone document in order to manage potentially contaminated fill material that may be encountered during the excavation stage.

In relation to the Mine Grouting Works, waste shall be managed in accordance with the Construction Management Plan (CMP), including:

+ Spoil from the boreholes will be stockpiled (in location as identified in the CMP) and removed from site progressively throughout the duration of the mine grouting works. The material will be removed by trucks (approximately 2 per week) and disposed of in accordance with the waste removal section of the CMP.

- Wherever possible the mines grouting contractor will mix the spoil with grout and and pump into the abandoned mine workings.
- Volume of Material
    - Yard Seam 360 m^3
    - Borehole Seam 560 m^3
    - Total Estimated Volume 920 m^3
- Water extracted from the abandoned mines during the drilling and grouting works may be mixed with the grout before returning to the mine workings. All water pumped from the mine will be returned to the mine workings.

In accordance with the Newcastle City Council Technical Manual for Waste Management, the following practices shall be employed to minimise waste during the demolition, mine grouting and construction phase of the development:

- Demolition shall be undertaken in a de-construction manner to ensure maximum re-use and recycling of materials.
- An allocated area for waste storage on site separated for the purposes of reuse, recycling and disposal. Waste storage areas to be suitably covered and contained.
- Bulk waste storage bins to be located within the site wherever possible, or alternatively seek approval from Council to position the container within the road reserve.
- Arrange contractors for the transport, processing and disposal of waste and recycling. Ensure that all contractors are aware of the legal requirements for disposing of waste. Contractors shall be employed to remove waste from the site regularly.
- During construction phase, delivery of materials 'as needed' to prevent the degradation of materials through weathering and moisture damage, and consider organising to return excess materials to the supplier or manufacturer.
- Clearly signpost the purpose and content of all bins and storage areas on site.
- Retain all records demonstrating lawful disposal of waste and keep them readily accessible for inspection by regulatory authorities such as Council, EPA or NSW WorkCover Authority.

3 Operation Stage

Objectives of waste management during operational phase:

- Encourage source separation of waste, reuse, and recycling by ensuring appropriate storage and collection facilities for waste, and quality design of waste facilities;
- Ensure appropriate resourcing of waste management systems, including servicing;
- Minimise risk to health and safety associated with handling and disposal of waste and recycled material, and ensure optimum hygiene;
- Minimise adverse environmental impacts associated with waste management; and
- Discourage illegal dumping by providing on site storage, and removal services.

3.1 Generation of Waste

Rates for multi-unit housing are not specified within the Newcastle Council Waste Management Technical Manual. The NSW *EPA Better Practice Guide for Waste Management in Multi Unit Dwellings*

2008 has therefore been used as a reference guide for the waste generation of the proposed residential development.

The generation of waste from the proposed development is summarised in Table 4.

Table 4 – Weekly Waste Generation Rates

Land Use	Waste Generation Rate	Recycling Waste Generation Rate	Proposed Bin Provision
Residential	80L waste/unit/week 80L x 172 = 13,760L per week	40L recyclables /unit/week 40L x 172 = 6,880L per week	Waste: 14 x 1100L bins collected once a week Recycling: 7 x 1100L bins collected once a week

It is acknowledged that following the lodgement of the development application, the NSW *EPA Better Practice Guide for Waste Management in Multi Unit Dwellings 2008* has been updated (2019 Update). Consideration of this update is outlined in Table 5 and 6.

Table 5 – Weekly Waste Generation Rates (2019 Update)

Land Use	Waste Generation Rate	Waste Generation Rate	Proposed Bin Provision
Residential	1 bedroom/studio apartment - 80L waste/unit/week	80L x 34 = 2,720L per week	17,320L/ 1100L bins = 15.7 x 1100L bins collected once a week OR = 7.85 x 1100L bins collected twice weekly.
	2 bedroom apartment - 100L waste/unit/week	100L x 98 = 9,800L per week	
	3 bedroom apartment - 120L waste/unit/week	120L x 40 = 4,800L per week	
		TOTAL: 17,320 per week	

Table 6 – Weekly Recycling Generation Rates (2019 Update)

Land Use	Recycling Waste Generation Rate	Recycling Waste Generation Rate	Proposed Bin Provision
Residential	1 bedroom/studio apartment - 80L waste/unit/week	80L x 34 = 2,720L per week	17,320L/ 1100L bins = 15.7 x 1100L bins collected once a week OR = 7.85 x 1100L bins collected twice weekly.
	2 bedroom apartment - 100L waste/unit/week	100L x 98 = 9,800L per week	
	3 bedroom apartment - 120L waste/unit/week	120L x 40 = 4,800L per week	
		TOTAL: 17,320 per week	

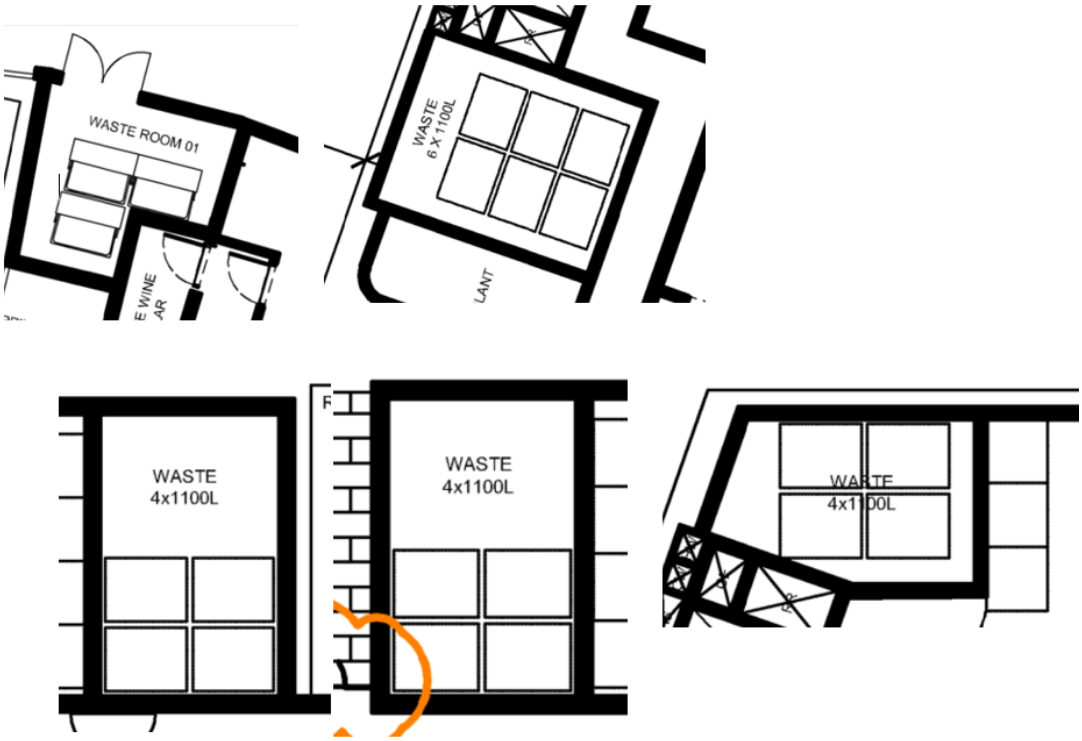
3.2 Waste Management Systems

3.2.1 Storage

Waste is to be stored in isolated waste rooms across the development, as illustrated in Figure 1. The 1100L waste and recycling bins shall be stored in the waste rooms. The waste and recycling shall be collected by a private waste contractor. It is proposed to accommodate a minimum of 8x1100L bins for general waste and 8x1100L bins for recycling, to be collected twice weekly (if required), which can readily be stored within the development, as indicated in Figure 1.

Residents in the apartments will be responsible for the disposal of their own waste. Waste and recycling bins will be clearly identified with signage to facilitate appropriate waste handling and placement in correct bins. The refuse area is considered sufficient to accommodate all the bins required and to allow sufficient room to safely manoeuvre bins.

Figure 1 - Waste Storage Areas



It is noted that Council have requested that it be demonstrated that the proposal could be serviced by the Council waste service. It is reiterated that a private contract waste service is intended for the site. Notwithstanding, further regard has been had of Council's service terms. It is noted that recycling can only be collected once a week, however general waste can be collected twice a week. Additional consultation has occurred with the Council Waste Services team, and noting the nature of the proposal, it has been agreed that 22 bins would adequately cater for the proposal, in the unlikely event that the Council service is engaged. It is also noted that the proposal complies with the EPA Guidelines that applied at the time of lodgement.

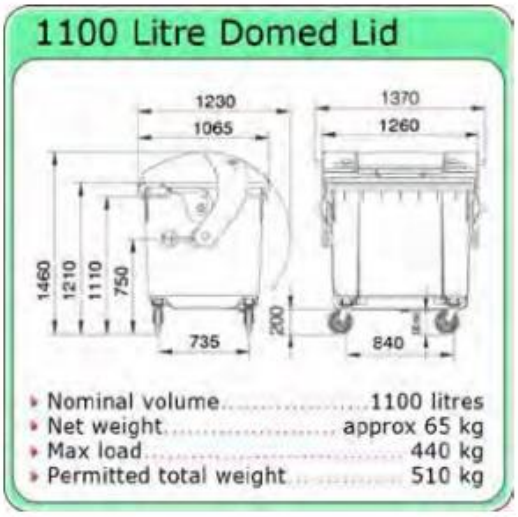
3.2.2 Waste Clearance

Waste and recycling collection services are to be provided via a private waste contract. This will enable the proposed development flexibility regarding collection schedules (during off-peak times). Figure 2 illustrates the 1100 litre wheelie bins proposed to be used at the site.

Figure 2 – Example of 1100L Wheelie Bin (NSW EPA, 2012).

1100 litre bins

With a capacity of just over one cubic metre, these bins have the equivalent volume of more than four 240 litre bins. They also feature four wheels, one on each corner and a hinged lid. These bins are used where large quantities of waste are generated but where larger front-lift bins might not be easily located and emptied. These bins have the advantage of being emptied by a rear-lift vehicle which can enter and easily manoeuvre in areas such as basements and loading docks, where clearance in less than six metres. They also can be easily pushed and manoeuvred by staff on foot or towed by tow motors or tractors.



3.2.3 Waste Collection

The development has been designed for collection by private contractor. The collection driver or building manager will wheel the waste bin(s) from the waste storage area for collection. Waste collection will be programmed to ensure it is carried out during non-peak traffic generating periods.

The building manager will be responsible for the regular cleaning and maintenance checks of the refuse storage area, and to ensure that bins are not left unattended at the street frontage.

In the unlikely event that Council collection services are engaged for the site, the additional requirements of Council, for example the requirement that Council waste staff would not be responsible for the movement of bins from the internal waste storage areas, have been considered. To minimise impacts to the street and neighbouring properties, an indicative storage location for bins is shown in Figure 3.

Figure 3 – Indicative Council Collection Management – Vehicle access

It is understood from consultation with the Council Waste Services team, that the site would be serviced in a scheduled manner. Accordingly, ongoing communication between the waste collection staff and building manager would ensure that the bins are only stored in this indicative location for a short period of time. The building manager would be at the driveway location during this period of time, and be able to move the bins (in the unlikely situation that this is required by a larger vehicle). Communication of the waste management measures will also be made through the strata management of the site. However, it is reiterated that it is unlikely that the Council would be engaged to undertake the waste collection.

Further detail regarding waste collection systems is to be provided at the Construction Certificate stage.

3.2.4 Other considerations

Green Waste

There will be minimal green waste generated by the building. Any green waste will be collected and removed from site by the landscaping / maintenance contractor. A small vehicle with or without trailer would be capable of being used to manage green waste.

Odour

The refuse area will be monitored and cleaned on a regular basis to remove sources of odour. Garbage will be placed in plastic bags before placement into bins.

Signage

Signage in accordance with NSW EPA Guidelines (2012) will be installed on waste and recycling bins (see Figure 4).

Figure 4 – Waste Signs (NSW EPA, 2012).

4 Conclusion

This WMP has been prepared in accordance with the Newcastle Development Control Plan 2012, Newcastle City Council Waste Management Technical Manual and NSW EPA Better Practice Guidelines for Waste Management in Multi-unit Dwellings. This WMP has demonstrated that the proposed development would be able to incorporate suitable management systems and practices to ensure that waste is appropriately and safely managed.

The proposed development has been carefully designed to minimise waste during demolition and construction phases and to ensure functionality and practicality in the ongoing management of waste generated by the development, with minimal impact on the public domain.