
Bonnyrigg Communities Plus Stages 8 to 11 Subdivision

Construction Waste Management Plan

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1. Background

This Plan details the management of waste during the demolition and construction phases of the Bonnyrigg Communities Plus Stages 8 to 11 subdivision development. Land covered by the proposed development is listed below:

Street	Lots	DP
Bean Crescent	219-229	262449
	6225	1242892
Palisade Crescent	193, 195-199, 201-206, 212-217, 415 & 416	262449
Mason Place	207-211, 143-146, 185	262449
Joiner Place	181-184 186-189, 191	262449
Garden Place	158, 159, 161-163, 165-171	262449
Kennedy Way	4099	1182418
Newleaf Parade	134-138, 140-142	262456
	155-157 173-175, 178-180, 192	262449
Sandilands Road	115, 117-119, 121, 122, 124-126, 129-133	262456
Bishop Crescent	107-112, 114	262456
	41	1172246
Humphries Road	103,105, 122-123	262456
	147-151, 153	262449

The proposed subdivision development comprises the following:

- Initial works being removal of sections of existing infrastructure including roads, drainage and service utilities and removal of trees.
- Bulk earthworks, road construction and relocation / upgrade of drainage and services infrastructure.
- Staged residential subdivision to create 219 residential lots, 3 development lots and 3 open space lots, 1 drainage reserve and 1 residue (future road widening) lot.
- Landscape embellishment of open space lots and streets.

The aim of this Plan is to ensure that all waste resulting from demolition and construction activities is managed in an effective and environmentally aware manner. Specifically,

- To minimise the generation of waste to landfill
- To maximise waste material avoidance and reuse on site
- To ensure that where practicable, an efficient recycling procedure is applied to waste materials
- To raise awareness among employees and subcontractors of their waste management responsibilities

2. Estimated waste profile

2.1 Initial Site works

Initial site works relating to Subdivision Delivery for the purpose of this report has been outlined as:-

- Excavation (bitumen)
- Green Waste
- Concrete
- Metals
- Timber

Note: Demolition of existing dwellings and improvements on the affected lots will be undertaken in accordance with the approved Concept Plan. No further development consent for demolition is required here

The proposed removal / realignment of roads affects all existing internal roads other than Newleaf Parade. Associated with the removal and realignment of roads will be removal / relocation of existing utilities and services.

The proposed works will require the removal of 323 existing trees, with 138 trees to be retained and protected.

Green waste cleared prior to bulk earthworks or civil works comprises the removal of grass, scrub and trees. Any scrub & existing trees are removed and mulched on site with the mulch reused on site in subdivision landscaping (or similar).

Note: As all waste items are reused on site, the quantities of demolition materials are not required unless deemed 'unsuitable' and therefore removed off site to a licensed landfill facility. Systems are in place on site to be flexible enough to allow for variation in the total quantities generated.

2.2 Construction

The main construction waste materials generated during subdivision construction are:-

- Profiled Asphalt and pavement materials
- Concrete (excess pipe & poured concrete)
- Plastic (membrane, geotextile liner, etc)
- Metal (reinforcing bars)
- Timber (formwork, pallets, etc)
- Oils & Greases

The exact composition and quantity of materials to be used on the project has not been finalised therefore the systems that will be put in place need to incorporate flexibility to allow for a variation in the total quantities generated. Once further details on the material types and quantities to be used on the site are available, a more accurate calculation of the waste quantities can be done. The final quantity of waste material from construction would be calculated by:

- Quantifying materials to be used for the project
- Applying waste margins allowed in ordering materials

3. Waste Management Strategy

3.1 Waste Management Principles

The following waste hierarchy the Contractor will use as a guiding principle:



3.1.1 Avoid and Reduce

The Contractor will 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

3.1.2 Reuse

The Contractor will 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

3.1.3 Recycling

The Contractor will identify all recyclable waste products 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.

3.1.4 Disposal

Waste products which cannot be reused or recycled will be removed and disposed of. The Contractor will consider:

- Ensure the chosen waste disposal contractor complies with EPA / OEH requirements
- Implement regular collection of bins

3.2 Waste Sources

Under the principles outlined above, the Contractor is required to deal with expected waste sources from the Bulk Earthworks & Civil Works phases as follows:

3.2.1 Excavation Material

As far as possible, balanced earthworks will be completed over the site.

3.2.2 Green Waste

As far as practical, green waste material will remain onsite and be used in landscape areas around the development.

3.2.3 Concrete

Concrete will be stockpiled and reused wherever possible. Surplus, unused concrete will be crushed onsite and alternate uses investigated on site (ie: used in pavement construction or for temporary access tracks, etc).

3.2.4 Bitumen

Profiled Bitumen and pavement materials will be either:-

- Reused as recycled pavement materials
- Disposed to Landfill

Materials deemed acceptable will be stockpiled and reused wherever possible.

3.2.5 Timber

Wood waste products may be produced on site from:

- Delivery of materials on pallets or other wooden packaging
- Use of wood material in the construction applications such as formwork or hoardings

Unless treated or contaminated, all wood waste products will be reused or recycled as follows:

- Pallets and packaging materials should where possible be returned to the supplier
- Where possible wood should be reused on site in the construction process
- Wood that cannot be reused or recycled should be separated and stockpiled for transfer to an appropriate recycling facility.

3.2.6 Metals

Metal waste may result from the following:

- Use of metal material in construction
- Delivery of materials in drums or other metal packaging (e.g. paint)

All metal materials should be reused or recycled as follows:

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

3.2.7 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 bin and collected regularly as required.

3.2.8 Liquid Waste

Liquid waste will be produced on site both as part of the construction process and for environmental control measures such as:

- Site and vehicle cleaning
- Concrete wash down areas
- Paint wash out areas
- Dust control waste

The following measures should 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 on site sediment basins

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

4. Waste Management Systems

4.1 On-site and off-site systems

Tables 1 & 2 below outlines the waste management systems proposed for demolition and construction phases:

Table 1: Waste Management systems – Initial Stage

Materials on site			Destination	
Type of material	Estimated volume (m ³)	On-site (Reuse or recycle)	Off-site (Recycling contractor)	Disposal (Contractor and landfill site)
Road Bitumen	500	Profile road material to be separated and reused where possible	n/a	To licensed landfill via appointed contractor (tba)
Green Waste	800	Chipped and used in landscaping as far as practical	To authorized recycling facility via appointed contractor (tba)	
Concrete	200		To authorized recycling facility via appointed contractor (tba)	
Metals	5		To authorized recycling facility via appointed contractor (tba)	

Timber	5		To authorized recycling facility via appointed contractor (tba)	
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Table 2: Waste Management Systems – construction

Materials On Site			Destination	
Type of material	Estimated Volume (m³)	On-site (Reuse or recycle)	Off-Site (recycling contractor)	Disposal (Contractor and landfill site)
Bitumen	TBA	Profile road material to be separated and reused in pavement / haul roads	Based on Assessment	TBC by Contractor
Concrete	50		To authorized recycling facility via appointed contractor (tba)	
Timber	TBA	Wooden pallets and other wooden packaging to be stockpiled for reuse by supplier	Separate timber scraps onsite in a skip. Collected by the waste subcontractor (as required) for reuse and recycling.	TBC by Contractor
Metal	TBA	Reused in construction wherever possible	Separate and stockpiled onsite. Collected by the waste subcontractor for recycling.	TBC by Contractor
Paper/cardboard	TBA		Separate onsite into dedicated receptacles. Collected by the waste subcontractor for	Facility TBA upon appointment of contractor.

			recycling.	
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Note: The figures in Table 1 and Table 2 above are estimates and are used as a guide for designing the waste management systems on site. These figures will be adjusted according to the final building material selection and quantities. The waste management systems will be adjusted as necessary.

4.2 Contracts and purchasing

The Principal Contractor and each subcontractor working on the site will be required to adhere to this Waste Management Plan.

The Principal Contractor will ensure each subcontractor:

- Takes practical measures to prevent waste being generated from their work. Refer to Appendices A to H for more details.
- 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 Foreman 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 4.3 below.

Should a subcontractor cause a bin to be significantly contaminated, the Site Foreman 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 Principal Contractors' Quality Management Systems

4.3 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 foreman will post educational signage in relation the recycling activities on site in breakout areas, lunch rooms etc.
