

Bankstown Compass Centre

Demolition and Construction Waste Management Plan

FEBRUARY 2016



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1. Background

This Plan details the management of waste during the demolition and construction phases of the Bankstown Compass Centre development.

The aim of this Plan is to ensure that all waste resulting from demolition and construction activities from the civil works is managed in an effective, safe 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

This Plan has been developed with reference to the Bankstown City Council's requirements and relevant Sections of the *Protection of the Environment Operations Act 1997* and the NSW Environment Protection Authority *Waste Classification Guidelines, Part 1: Classifying Waste*, as well as consideration of industry best-practice for this type of development (demolition component).

In particular, there will be compliance with *Australian Standard AS2601: The demolition of structures*. This in summary requires that the demolition of structures:

- sets out requirements for the planned demolition of buildings and certain other structures so that the risk of injury to workers, other site personnel and the public, and the risk of damage to adjacent property and the immediate environment is minimised;
- covers the methods and safety procedures applicable to demolition work in general as well as procedures for some types of structures;
- deals with manual and mechanical demolition techniques including those employing specialised earth-moving type machinery;
- includes informative appendices covering the demolition of pre-stressed concrete structures, some contractual considerations, a checklist for contractors and qualifications for site personnel;
- safety and health issues are addressed under the headings of:
 - Health and safety of the public - covering general requirements, lighting, falling materials, fencing, hoardings and warning notices, scaffolding, overhead protection for footpaths, and hazardous materials and conditions;
 - Safety and health of site personnel - covering general safety, personal protective clothing and equipment, cutting and welding, fire protection, first aid, amenities, removal of hazardous material and electrical safety;
 - Protection of adjoining buildings and protection of immediate environment - covering requirements relating to access and egress,

damage and structural integrity, vibration and concussion, weatherproofing, burning, dust control, noise control, protection of public roads and protection of sewers and water courses; and

- protection of the site.

Adherence to AS2601 is required under the Environmental Planning and Assessment Regulation 2000.

Section 143 of the Protection of the Environment Operations Act 1997 requires waste to be transported to a place that can lawfully accept it. It will be the responsibility of the site developers to ensure all contractors clearly specify where all wastes are to be transported, the capacity of the nominated facilities to receive/manage the waste and to ensure that reports on management aspects (types, quantities and disposal pathways) are provided.

Note: The testing and classification of any excavated material is not covered in this report. Where necessary separate specialist testing will be conducted by the project managers.

If acid sulphate soils are present on site, a separate management plan will need to be prepared for handling and disposal of such soil.

2. 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 where ever 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

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.

Green Waste

It is expected that there will be minimal green waste generated. All green waste material will remain onsite (shredded and or composted), and be reused in landscape areas around the development if possible.

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.

Metals

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

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.

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 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 storm water

Stormwater Pollution Prevention and Litter Reduction

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 SWMS 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 generation and where identified, works will cease until appropriate controls are implemented

- iv. Site inspections will also 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
- v. Sufficient quantities of bins (and/or bin space), will be made available so as to avoid dumping of materials outside bins
- vi. All bins will have covers so as to ensure that wastes cannot be blown out during windy conditions
- vii. Waste water and storm water will be managed and disposed of in accordance with Sydney Water requirements.

Records

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

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

These records will be made available to Council on request.

Asbestos

While materials that may contain asbestos were not tested, should any materials be suspected of being (or containing), asbestos, the following process will apply.

The process for managing what has initially been suspected of being or containing asbestos waste is as follows¹:

- 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.
- vi. If the material has accidentally 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.

¹ It may be that any material suspected of being asbestos is simply classified as such, and then managed accordingly.

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.

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.

Appendix A contains a site map indicating the location of waste/recycling bins.

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.

3. 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.

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 m³ 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.

It is also important to note that whether some materials and volumes that will need to be managed will be finalised once the site is available for demolition activities. For example, there are plastics used in signage (approximately 20m³), and toilet fixtures, but based on inspections would be disposed of via the general waste, but may be removed by tenants or able to be recycled once examined by the recycling contractor.

Table 1: 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	102,000m ³	No on-site reuse	Excavation materials will be collected and used as clean fill by the waste contractor with appropriate notification as to location	All remaining material will be disposed at landfill – facility (or other sites as fill), TBA upon appointment of contractor
Concrete	4,200m 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

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)
Bricks	2,000m ³	Separated on site and crushed for use in pavement and/or temporary access road construction where 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 ²
Tiles (roof and floor)	110m ³	Separated on site and crushed for use in pavement and/or temporary access road construction where possible	Collected by contractor and disposed at recycling facility (for sale for reuse), if tiles are appropriate – or at a rubble recycling facility	Facility TBA upon appointment of contractor
Acoustic ceiling tiles	25m ³	No on-site reuse	Recycler consulted as to viability for reuse/recycling, and if not appropriate disposed at landfill	Facility TBA upon appointment of contractor
Timber	80m ³	No on-site reuse	Recyclable timber (untreated) will be collected and recycled at appropriate timber yard. Unrecyclable (treated) timber will be disposed at landfill	Facility TBA upon appointment of contractor

² 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)
Plasterboard	800m ³	No on-site reuse	Material to be separated and stockpiled onsite. Collected by the waste subcontractor as required for recycling. Possible use as soil improver with gypsum etc removed by recycler	Facility TBA upon appointment of contractor
Metals (RSJ, wiring, plumbing, balustrades, fittings, door frames, guttering, fences etc)	950m ³	No on-site reuse	Collected by specialist metal subcontractor for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
Lifts and equipment	80m ³	No on-site reuse	Collected by specialist metal subcontractor for if feasible components reused or for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
Glazing	250m ³	No on-site reuse	Recyclers consulted as to potential for recycling and if suitable separated for recycling by a facility (possibly as road base, but generally not accepted for recycling due to film in the glass). Note though that windows will be removed "intact" as there is a higher potential for them to be reused as a result.	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)
Asphalt	100m ³	No on-site reuse	Collected by the waste contractor for recycling.	Facility TBA upon appointment of contractor
Carpet	100m 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
Air conditioning Units	60m ³	No on-site reuse	Removed as still serviceable (if possible) and sold for reuse to an appropriate contractor. Remainder collected by specialist metal subcontractor for recycling. Facility TBA upon appointment of contractor.	No disposal to landfill
Vegetation	20m ³	No on-site reuse	Collected and disposed at green waste/mulching facility.	No disposal to landfill
Mixed Recyclables (paper/cardboard, commingled)	15m 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

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)
General waste	300m 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. These included:

- Metals (discarded machinery)
- Plastics
- Drums
- Office furniture

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.

4. Hazardous Waste Materials

Management Procedures

At this stage, it is not expected that there will be any hazardous materials that will require management under this Waste Management Plan.

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 are³:

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).

³ Reference should be made to the NSW EPA publication, Waste Classification Guidelines Part 1: Classifying Waste.

5. 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.

Table 3 below details the estimated composition by m³ 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.

Table 3: 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	150m ³	Separated on site and crushed for use in pavement construction where possible	Collected by contractor and disposed at concrete recycling facility	Facility TBA upon appointment of contractor
Timber (formwork)	175m 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	80m ³	Undamaged bricks separated on site and stockpile for reuse at designated area or crushed and used in pavement construction	Unusable bricks collected by contractor and disposed at brick recycling facility	Facility TBA upon appointment of contractor
Plasterboard	120m 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
Metal - (balustrades, fittings, door frames, guttering, studs etc)	110m ³	No on-site reuse	Collected by specialist metal subcontractor for recycling	Facility TBA upon appointment of contractor
Cladding	30m ³	No on-site reuse	Collected by the waste contractor for recycling. Facility TBA upon appointment of contractor.	Non-recyclable cladding will be collected by contractor and disposed at landfill
Carpet	50m 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

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)
Mixed Recyclables	150m ³	No on-site reuse	Contractor appointed to collect and recycle	No disposal to landfill
General waste	400m ³	No on-site reuse	No recycling or reuse	Facility TBA upon appointment of contractor

6. 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 envisaged 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; and

All drains located on or off-site that could have any sediment flow to them will be protected by bunding. The type of bunding will depend on the location (eg., use of straw bales or purpose bought bunding).

All measures used for sediment control will be inspected daily to ensure their efficacy remains.

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 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).

7. 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

8. 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 the recycling activities on site in breakout areas, lunch rooms etc.

