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ITEM 7 WOLLONGONG DEVELOPMENT CONTROL PLAN 2009 CONTAMINATED LANDS REVIEW - POST EXHIBITION

On 29 May 2017, Council considered a report on a working group with NSW Health and the Environment Protection Authority to consider community information on Lead and heavy metal contamination. As part of this report, Council resolved to exhibit draft changes to the following chapters of Wollongong Development Control Plan 2009;

a) Chapter E7 Waste Management.

b) Chapter E19 Earthworks.

c) Chapter E20 Contaminated Land Management.

d) Chapter E21 Demolition and Hazardous Materials Management.

e) Chapter E22 Soil Erosion and Sediment Control.

The proposed amendments to these chapters were exhibited from 17 July to 18 August 2017. This report considers the eight submissions received in response to the exhibition.

RECOMMENDATION

1 The following revised Wollongong Development Control Plan 2009 Chapters be adopted:

a E7 : Waste Management;

b E19: Earthworks;

c E20: Contaminated Land Management, as amended following exhibition;

d E21: Demolition and Hazardous Materials Management; and

e E22: Erosion and Sediment Control Management, as amended following exhibition.

2 The adoption of the revised Wollongong Development Control Plan 2009 Chapters be notified in local newspapers in accordance with the Environmental Planning and Assessment Regulation 2000.

REPORT AUTHORISATIONS

Report of: Renee Campbell, Manager Environmental Strategy and Planning
Authorised by: Andrew Carfield, Director Planning and Environment - Future City and Neighbourhoods

ATTACHMENTS

1 Chapter E7 - Waste Management
2 Chapter E19 - Earthworks
3 Chapter E20 - Contaminated Land Management
4 Chapter E21 - Demolition and Hazardous Materials Management
5 Chapter E22 - Soil Erosion and Sediment Control

BACKGROUND

On 3 August 2015, Council considered a notice of motion regarding lead and heavy metal contamination from industry and its impact on public and environmental health. Council resolved to work with NSW Health and the Environment Protection Authority to prepare community information and advice on demolition and renovation.

Council also established a working group with the agencies and carried out a review of its policies and procedures relative to management of contaminated land. This review included:

- Policy and process for assessing and noting contamination.
- Notations on Development Consents.
- A review and update of notations within the Land Information System.
- A review of chapters in Wollongong Development Control Plan 2009 that contain provisions on contamination management.

As part of the work, a Councillor briefing was held on 6 February 2017.

On 29 May 2017 Council considered a report on contamination issues and a proposal to update five Development Control Plan chapters. Council resolved that:

1 The draft changes to the following chapters of the Wollongong Development Control Plan 2009 be exhibited for a minimum period of 28 days:

a Chapter E7 Waste Management, subject to the following amendment – Page 1 – Objectives – he addition of another key objective – "To promote and ensure informed and appropriate actions to minimise the impact on public health and the environment from hazardous materials".

b Chapter E19 Earthworks

c Chapter E20 Contaminated Land Management

d Chapter E21 Demolition and Hazardous Materials Management

e Chapter E22 Soil Erosion and Sediment Control, subject to an amendment to Page 4, Part 5 Inspection and Maintenance – an additional first point as follows –

Erosion and Sediment Control measures must be inspected:

"1 By Council as spot inspections prior to commencement of any construction works".

1 Note that an independent review of information relating to lead and other heavy metals will be undertaken and the review and recommendations will be reported to a future meeting of Council.

The revised draft chapters were subsequently exhibited from 17 July to 18 August 2017. Copies of the proposed changes were available at the Wollongong, Corrimal, Thirroul, Helensburgh, Dapto, Warrawong and Unanderra Libraries, and at Council's Customer Service Centre. The documents were also available on Council's website.

PROPOSAL

The exhibited changes to the Wollongong Development Control Plan 2009 include:

Chapter E7: Waste Management

- Update Legislative context and references.
- Add more information on waste management and storage.
- Additional key objective "to promote and ensure informed and appropriate action to minimise the impact on public health and the environment from hazardous materials".

Chapter E19: Earthworks

- Update Legislative context and references.
- Include more information on the reuse of soils.
- Update information on reuse of coal wash.

Chapter E20: Contaminated Land Management

- Update Legislative context and references.

- Update contaminated lands "language" throughout the chapter.
- Add context for ongoing site management requirements.

Chapter E21: Demolition and Hazardous Materials Management

- Change title to "Demolition and Hazardous Materials Management.
- Update Legislative context and references.
- Update chapter to require consideration of hazardous building materials (not just asbestos).
- Update chapter to include definition of "common" hazardous building materials.
- Remove older or less relevant information.
- Update definitions and references to be consistent with current legislation and regulations.
- Include the Protection of the Environment Operations Act 1997 (POEO Act) implications of a pollution event.

Chapter E22: Erosion and Sedimentation Control Management

- Update chapter to reflect provisions in more current DCP chapters from other Councils.
- Include improved management controls for larger sites.
- Update chapter to encourage appropriate erosion and sediment control management options.
- Include reference to potential for sediment to be an offence under the POEO Act 1997.
- Include advice that Council may undertake spot inspections of erosion and sediment control measures prior to the commencement of construction.

Minor amendments have been made as a result of the public exhibition process (see consultation and communication section below).

The revised chapters for adoption by Council are at Attachment 1 – 5.

CONSULTATION AND COMMUNICATION

The revised chapters of Wollongong Development Control Plan 2009 were exhibited from 17 July to 18 August 2017. The Have your say page on Council's website was viewed 161 times and 76 documents were downloaded. Eight (8) submissions were received in response to the exhibition. The issues raised in submissions are as follows:

Submission	Issue	Comments
Sydney Water	No objection to changes	Noted
NSW Rural Fire Service	No objection to changes	Noted
Roads and Maritime Services	Illegal dumping is an issue. Supports measures to reduce dumping and manage waste materials	Noted
Lake Illawarra Estuary Management Committee	Chapter E22: • 50 metres from a watercourse is not a sufficient buffer for Erosion and Sediment Control Plan (ESCP). 100 metres should be considered.	• Amendment supported. It is proposed to retain 50m for a watercourse and include 100m around Lake Illawarra and Bellambi Lagoon,

Submission	Issue	Comments
		identified in draft Coastal Management SEPP as Coastal Lakes.
	• Seek clarity on what a "basic plan" (ESCP) is. Can Council consider an appendix with an example?	• The term "Basic Plan" has been amended to "Basic Erosion Sediment Plan" to clarify its intent as the minimal requirement for small sites. The EPA's soils and construction "Blue Book" for ESCP notes each plan needs to be adaptable to specific site conditions.
Resident	• Support amendments to Chapter E22	• Noted
	• All developments within Lake Illawarra catchment should require an ESCP.	• All development requires an ESCP. As noted the reference to Basic Plan has been amended.
	• Council should inspect all developments before and during construction.	• Council's Regulation and Enforcement Division does inspect sites where an issue has been raised with Council. On 29 May 2017 Council resolved to include advice that Council may undertake spot inspections prior to construction.
	• Is the "blue book" still best practice?	• The "Blue Book" is still considered the most appropriate guide for ESCPs.
Resident	• Sediment is a big issue for Lake Illawarra – the buffer should be increased from 50 to 100 metres.	• Amendment supported. A 100m distance would be consistent with other controls surrounding Lake Illawarra and Bellambi Lagoon.
	• Council should investigate ways of ensuring compliance with ESCP plans, such as inspections.	• Council's Regulation and Enforcement Division inspects sites if an issue

Submission	Issue	Comments
		of compliance has been raised.
Individual submission online	• Consider use of the old Port Kembla copper dumping ground at Primbee	• The DCP amendments are about policy, not about planning for an individual site.
Neighbourhood Forum 5	• Advised that at its meeting on 2 August 2017, the Forum resolved to support the changes.	• Noted.

The main issue raised in submissions on the revised DCP controls relate to Erosion and Sedimentation Control Plans (ESCP). Comments request that ESCP should apply to areas outside 50m of a watercourse or "environmentally sensitive receptor" and that the DCP should have an example of an ESCP in an appendix. The best reference for ESCP requirements is to refer to the "Blue Book" as referenced in the DCP chapter.

It is agreed that sedimentation issues can occur at any point within the catchment and the cumulative impact of many small developments can have a greater impact than individual large developments. All development requires an ESCP, with the level of documentation increasing with the size of the development.

Submissions also suggest that Council should inspect all developments. Council's Regulation and Enforcement Division does carry out inspections where a complaint or issue of a sedimentation event has been raised. Council does not have the resources to inspect every development site within the Local Government Area, and many development activities are carried out under exempt and complying development, or is carried out via private certifiers.

Recently the EPA introduced a Contaminated Land Consultants Certification Scheme. Chapter E20 Contaminated Land Management, Section 5(e) has been updated to reflect the required accreditation.

PLANNING AND POLICY IMPACT

This report contributes to the delivery of Wollongong 2022 goal "We value and protect our environment". It specifically delivers on the following:

Community Strategic Plan	Delivery Program 2012-2017	Annual Plan 2017-18
Strategy	5 Year Action	Annual Deliverables
1.1.2 Agencies work together to reduce pollution and its impact on our environment	1.1.2.1 Impacts from development on the environment are assessed, monitored and mitigated	Work together with the Environment Protection Authority Safe work NSW and other agencies to minimise pollution and its impacts

The proposed amendments to the Wollongong Development Control Plan 2009 will update the document to reflect better practices with regard to Contamination and Contaminated Lands issues.

FINANCIAL IMPLICATIONS

There are no immediate financial implications as a result of this report.

CONCLUSION

This report has given an update on the results of the exhibition of the revised chapters of Wollongong Development Control Plan 2009, relating to contaminated lands and contamination issues.

It is recommended that Council adopt the revised DCP changes, with additional revision to Chapter E20: Contaminated Land Management and Chapter E22: Soil Erosion and Sediment Control.

Contents

Figures

Part E – General Controls – Design Controls
Chapter E7: Waste Management

Document Control

Document ID: Wollongong DCP 2009 – E7 Waste Management

Rev No	Adoption Date	In force date	Revision Details
0	15/12/09	1/3/10	Adopted
1	11/12/17		Contaminated Lands Review update

1 INTRODUCTION

1. This Chapter provides Council's general requirements for waste minimisation, management and recycling for all developments within the city.

2. This Chapter incorporates the waste minimisation, recycling requirements and assessment criteria / development controls contained in the NSW Department of Environment and Climate Change's, (now the Office of Environment and Heritage or 'OEH') publication titled *Model Waste Not DCP Chapter* dated July 2008. This Chapter also reflects the waste minimisation and management / recycling strategies and guidelines contained in the NSW Department of Environment and Climate Change's publication titled *Better Practice Guide for Waste Management in Multi-unit Dwellings* dated June 2008.

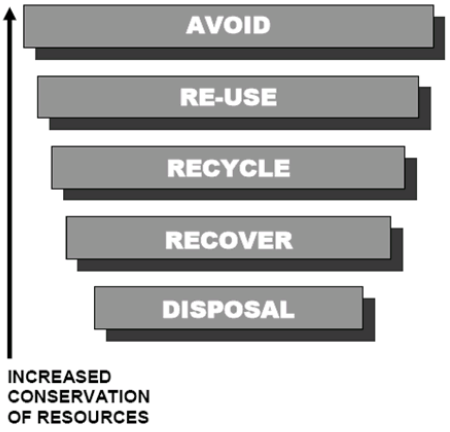


Figure 1: Waste Minimisation Hierarchy

2 OBJECTIVES

1. The key objectives of this chapter of the DCP are:

   a) To minimise the volume of waste generated during the demolition and construction phases of development, through reuse and recycling and the efficient selection and use of resources;

   b) To minimise demolition waste by promoting adaptability in building design and focussing upon end of life deconstruction;

   c) To encourage development which facilitates waste minimisation and complements waste services offered by Council or private contractors;

   d) To reduce the demand for waste disposal;

   e) To maximise reuse and recycling of building materials and household, industrial and commercial waste;

   f) To provide appropriately located, sized and accessible waste storage facilities;

   g) To assist applicants in planning for sustainable waste management, through the preparation of a site waste minimisation and management plan at the Development Application stage;

h) To provide guidance with regard to the minimum storage requirements, amenity and management facilities;

i) To ensure waste management systems are compatible with collection services;

j) To support the principles of Ecologically Sustainable Development (ESD);

k) To avoid illegal disposal, transportation and dumping of wastes; and

l) To promote and ensure informed and appropriate actions to minimise the impact on public health and environment from hazardous materials.

3 RELEVANT LEGISLATION AND OTHER PUBLICATIONS

1. The following legislation, guidelines and strategies are relevant to waste minimisation and management:

- Protection of the Environment Operations Act 1997;
- Protection of the Environment Operations (Waste) Regulation 2014;
- Waste Avoidance and Resource Recovery Act 2001;
- NSW Waste Avoidance and Resource Recovery Strategy 2014 - 21
- NSW Department of Environment and Climate Change Better Practice Guide for Waste Management in Multi-unit Dwellings June 2008;
- NSW Department of Environment and Climate Change Model Waste Not DCP Chapter 2008 July 2008; and
- NSW Department of Environment and Conservation NSW Waste Avoidance and Resource Recovery Strategy 2003 and Performance Report 2006.

4 SUBMISSION / APPLICATION REQUIREMENTS

4.1 General

1. All applications for development, including demolition, construction and the ongoing use of a site/premises, must be accompanied by a Statement of Environmental Effects (SEE). This Statement is to include a Site Waste Minimisation and Management Plan (SWMMP) as the central document of compliance with this Chapter's requirements. In addition to submission of a SWMMP (as part of the SEE), the waste management facilities proposed as part of the development, shall be clearly illustrated on the architectural plans of the proposed development, accompanying the Development Application (DA).

4.2 Site Waste Minimisation and Management Plan

1. A Site Waste Minimisation and Management Plan (SWMMP) outlines measures to minimise and manage waste generated during:

- Demolition
- Construction
- Ongoing use of the site/premises.

In this respect, the SWMMP should address a range of matters, including:

- Volume and type of waste and recyclables to be generated
- Storage and treatment of waste and recyclables on site
- Disposal of residual waste and recyclables
- Intended waste management service provider
- Operational procedures for ongoing waste management once the development is complete.

2. The SWMMP highlights the method of recycling or disposal and the proposed waste management service provider.

Appendix 1 provides a template for the compilation of a SWMMP.

Specific requirements of the SWMMP are included in the waste management provisions contained in 5.8.1Appendix: 1

5 PLANNING REQUIREMENTS / ASSESSMENT CRITERIA

5.1 Demolition

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany any Development Application proposing the demolition of a building or other ancillary structures.

2. Hazardous Buildings Materials must be identified, managed and disposed of in accordance with relevant State legislation (see Safe Work Australia: *Demolition Work, Code of Practice* 2013)

3. Pursue adaptive reuse opportunities of buildings/structures.

4. Identify all waste likely to result from the demolition and opportunities for reuse of materials. Refer to Figure 1.

5. Facilitate reuse/recycling by using the process of 'deconstruction', where various materials are carefully dismantled and sorted.

6. Reuse or recycle salvaged materials onsite where possible.

7. Allocate an area for the storage of materials for use, recycling and disposal (giving consideration to slope, drainage, location of waterways, stormwater outlets, vegetation, and access and handling requirements).

8. Provide separate collection bins or areas for the storage of residual waste.

9. Clearly ‘signpost’ the purpose and content of the bins and storage areas.

10. Implement measures to prevent damage by the elements, odour and health risks and windborne litter.

11. Minimise site disturbance, limiting unnecessary excavation.

11. When implementing the SWMMP the developer must ensure:

(a) Footpaths, public reserves, street gutters are not used as places to store demolition waste or materials of any kind without Council approval.

(b) Any material moved offsite is transported in accordance with the requirements of the *Protection of the Environment Operations Act 1997 and any other relevant legislation.*

(c) Waste is only transported to a place that can lawfully be used as a waste facility.

(d) Generation, storage, treatment and disposal of hazardous waste and special waste (including asbestos) is conducted in accordance with relevant waste legislation administered by the EPA and relevant Occupational Health and Safety legislation administered by WorkCover NSW.

(e) Evidence such as weighbridge dockets and invoices for waste disposal or recycling services is retained. This shall include a log book with associated receipt/invoices, waste classification, and site validation certificate. All entries must include: time and date, description and size of waste, waste facility used, vehicle registration and company name. The log book and associated receipts must be made available for inspection by Council Officer's at any time during site works.

12. Table 1 provides a list of some potential reuse/recycling options. Reuse and recycling opportunities are decreased when asbestos is not carefully removed and segregated from other waste streams.

Table 1: Examples of Demolition Materials and Potential Reuse/ Recycling Options

Material	Reuse/Recycling Potential
Concrete	Reused for filling, levelling or road base
Bricks and Pavers	Can be cleaned for reuse or rendered over or crushed for use in landscaping and driveways
Roof Tiles	Can be cleaned and reused or crushed for use in landscaping and driveways
Untreated Timber	Reused as floorboards, fencing, furniture, mulched or sent to second hand timber suppliers
Treated Timber	Reused as formwork, bridging, blocking and propping, or sent to second hand timber suppliers
Doors, Windows, Fittings	Sent to second hand suppliers
Glass	Reused as glazing or aggregate for concrete production
Metals (fittings, appliances and wiring)	Removal for recycling
Synthetic Rubber (carpet underlay)	Reprocessed for use in safety devices and speed humps
Significant Trees	Relocated either onsite or offsite
Overburden	Power screened and used as topsoil
Garden Waste	Mulched, composted
Carpet	Can be sent to recyclers or reused in landscaping
Plasterboard	Removal for recycling, return to supplier

(Source: NSW Department of Environment and Climate Change Waste Not DCP Chapter 2008)

5.2 Construction of Buildings or Structures

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany the application.
2. Estimate volumes of materials to be used and incorporate these volumes into a purchasing policy so that the correct quantities are purchased. For small-scale building projects see the rates in Appendix 2 Waste/Recycling Generation Rates for a guide.
3. Identify potential reuse/recycling opportunities for excess construction materials.
4. Incorporate the use of prefabricated components and recycled materials.
5. Arrange for the delivery of materials so that materials are delivered 'as needed' to prevent the degradation of materials through weathering and moisture damage.
6. Consider organising the return of excess materials to the supplier or manufacturer.
7. Allocate an area for the storage of materials for use, recycling and disposal (considering slope, drainage, location of waterways, stormwater outlets and vegetation).
8. Arrange contractors for the transport, processing and disposal of waste and recycling. Ensure that all contractors are aware of the legal requirements for transporting and disposing of waste.
9. Promote separate collection bins or areas for the storage of residual waste.
10. Clearly signpost the purpose and content of the bins and storage areas.
11. Implement measures to prevent damage by the elements, odour and health risks, and windborne litter.
12. Minimise site disturbance and limit unnecessary excavation.
13. Ensure that all waste is transported to a place that can lawfully be used as a waste facility.
14. Retain all records demonstrating lawful disposal of waste and keep them readily accessible for inspection by regulatory authorities such as council, OEH/EPA or NSW WorkCover Authority.

5.3 Dwelling Houses, Dual Occupancies, Secondary Dwellings and Integrated Housing

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany a Development Application for a dwelling-house, dual occupancy development, secondary dwelling or for each dwelling in an integrated housing/ lot development.
2. Where waste collection services are available, single dwellings are to be provided with:
    (a) 1 x 240L or 120L general waste bin collected weekly;
    (b) 1 x 240L recyclable material bin collected fortnightly; and
    (c) 1 x 240L green waste bin collected fortnightly.
3. Bins are to be stored behind the building line and screened from view from the public domain at all times not associated with waste collection.
4. Waste containers are to be stored in a suitable location so as to avoid vandalism, nuisance and adverse visual impacts.
5. A designated area shall be provided for composting that should not impact on adjoining properties.

6. Where possible, the waste/recycling storage area should be located in the rear yard and minimise the distance of travel to the collection point.

7. The waste storage area is to be easily accessible and have unobstructed access to Council's usual collection point.

8. There should be sufficient space within the kitchen (or an alternate location) for the interim storage of waste and recyclables.

9. The placement of bins for collection at the nominated collection point should ensure adequate traffic and pedestrian safety is maintained.

   Note: It is the responsibility of dwelling occupants to move bins to the identified collection point no earlier than the evening before collection day and to then return the bins to their storage area no later than the evening of collection day. Bins are to remain in their on-site storage area at all other times.

10. The site plan and floor layout plans submitted with the application must show:

    (a) The location of an indoor waste/recycling cupboard (or other appropriate storage space) for each dwelling.

    (b) The location of an onsite waste/recycling storage area for each dwelling, that is of sufficient size to accommodate Council's waste, recycling and garden waste bins. (Indicative bin sizes are shown in Appendix 3)

    (c) An identified on-site location for a compost container.

    (d) An identified kerbside collection point for the collection and emptying of Council's waste, recycling and garden waste bins.

5.4 Multi-Dwelling Housing (Villas and Townhouses)

5.4.1 General Requirements

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany the Development Application for a proposed multi-dwelling housing development.

2. The site plan and floor layout plans submitted with a Development Application must show:

    (a) The location of an indoor waste/recycling cupboard (or other appropriate storage space) for each dwelling;

    (b) The location of individual waste/recycling storage areas (such as for townhouses and villas) or a communal waste/recycling storage room(s) able to accommodate Council's waste, recycling and garden waste bins;

    (c) An identified location for individual compost containers or communal compost container;

    (d) An identified collection point for the collection and emptying of Council's waste, recycling and garden waste bins;

    (e) The path of travel for moving bins from the storage area to the identified collection point (if collection is to occur away from the storage area);

(f) The on-site path of travel for collection vehicles (if collection is to occur on-site), taking into account accessibility, width, height and grade.

3. Waste storage for multi dwelling housing developments may be located within the rear yard area of each dwelling, in a position from which bins may be readily wheeled to the street for collection. Alternatively a communal waste storage area may be provided.

   The following storage provision shall be made per dwelling:

- Waste: 120 litres per week per dwelling;
- Recycling: 120 litres per week; and
- Green waste: 120 litres per fortnight per dwelling.

5.4.2 Requirements for Waste Storage Areas:

1. Any communal waste storage area shall be located in a position which is accessible by all residents for the depositing of waste and for the relocation of bins to the collection position.
2. The storage facility must be well lit and easily accessible from the main pedestrian access points within the development, in order to improve safety for residents.
3. Each bin and bin type must be readily accessible and manoeuvrable in and out of the proposed storage area.
4. The storage area shall be free of all obstructions so as not to restrict movement and servicing of the bins or containers.
5. All storage areas must have bump rails to prevent bins from making contact with walls for the purposes of noise reduction.
6. There shall be no lip or step between access point to the storage area and the collection point.
7. The ground surface of the storage area shall be of a smooth finish to enable easy movement of the bins/containers and minimise noise impacts.

5.4.3 Requirements for Communal Waste Storage Areas:

1. A communal waste facility must be provided for:
   - Developments incorporating more than six (6) dwellings; or
   - Multi-dwelling housing developments where the number of bins proposed cannot be accommodated within 50% of the developments frontage on collection day; or
   - Developments where site constraints make access to the street difficult for individual occupants; or
   - Developments with frontage to a major road, where on-site garbage collection is required.
2. Communal waste storage areas must be designed to accommodate bins with the minimum dimensions specified in Appendix 3:
3. The size of waste bins shall be determined having regard to the ability of the bins to be wheeled to the street for collection by a contractor. The body corporate or a caretaker is responsible for the movement of bins to their collection point.

4. Council may consider the location of the storage facility within the front building line setback area of the development site. Any such storage facility must be architecturally designed to reflect the design style of the proposed building and not detract from the visual amenity and streetscape character in the immediate vicinity. In this respect, the storage facility must be screened from the street frontage via a minimum 1.5 metre high brick or masonry wall and feature landscaping and an open pergola or other similar roofline feature, in order to improve the streetscape appearance of the facility.

   Applicants should refer to the Department of Environment and Climate Change's '*Better Practice Guide for Waste Management in Multi-Unit Dwellings'* for additional guidance.

5. There must be an unobstructed and Continuous Accessible Path of Travel (as per *Australian Standard 1428 Design for Access and Mobility - 2001*) from the waste/recycling storage area(s) or room(s) to:

   - The entry to any Adaptable Housing (as per Australian Standard 4299 Adaptable Housing - 1995)
   - The principal entrance to each residential flat building
   - The point at which bins are collected/emptied.
   - In instances where a proposal does not comply with these requirements, Council will consider alternative proposals that seek to achieve a reasonable level of access to waste/recycling storage area(s) or room(s).

5.5 Residential Flat Buildings

5.5.1 General Requirements

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany the Development Application for a proposed residential flat building.

2. The site plan and floor layout plans for the proposed residential flat building must show:

   (a) The location of an indoor waste/recycling cupboard (or other appropriate storage space) for each dwelling;

   (b) The location of the proposed communal waste/recycling storage room(s) able to accommodate all waste, recycling and garden waste bins required for the total development;

   (c) The location of any garbage chute(s) and interim storage facilities for recyclable materials;

   (d) The location of any service rooms (for accessing a garbage chute) on each floor of the building;

   (e) The location of any waste compaction equipment;

   (f) An identified location for individual compost containers or communal compost container;

   (g) An identified collection point for the collection and emptying of Council's waste, recycling and garden waste bins;

   (h) The path of travel for moving bins from the storage area to the identified collection point (if collection is to occur away from the storage area); and

   (i) The on-site path of travel for collection vehicles, taking into account accessibility, width, height and grade.

5.5.2 Requirements for a Communal Waste Storage Facility

1. Residential flat buildings must include communal waste/recycling storage facilities in the form of a waste/recycling storage room (or rooms) designed in accordance with Appendix 4 and the *Better*

Practice Guide for Waste Management in Multi-Unit Dwellings.

2. The waste/recycling storage room must be designed to accommodate bins with the minimum dimensions specified in Appendix 3, based on the number of bins required to service the total development

3. The waste/recycling storage room must be located in a position which is accessible by all residents for the depositing of waste and for the relocation of bins to the collection position.

4. Council may in exceptional circumstances consider the location of the storage facility within the front building line setback area of the development site, in instances where a waste/recycling storage room is not possible within the basement due to access impediments or excessive slope constraints, and subject to appropriate collection arrangements being provided.

   Any such storage facility must be architecturally designed to reflect the design style of the proposed building and not detract from the visual amenity and streetscape character in the immediate vicinity. In this respect, the storage facility must be screened from the street frontage via a minimum 1.5 metre high brick or masonry wall and feature landscaping and an open pergola or other similar roofline feature, in order to improve the streetscape appearance of the facility.

   In this circumstance, it must be satisfactorily demonstrated why a basement waste and recycling storage facility cannot be achieved. However, for the majority of cases, a basement waste and recycling storage facility will be required and hence, sufficient clearance height must be incorporated into the development upfront.

   Applicants should refer to the Department of Environment and Climate Change's '*Better Practice Guide for Waste Management in Multi-Unit Dwellings'* for design guidelines.

5. Each bin and bin type must be readily accessible and manoeuvrable in and out of the proposed waste/recycling storage room.

6. For residential flat buildings involving ten (10) or more dwellings, a dedicated room or caged area must be provided for the temporary storage of discarded bulky items which are awaiting removal. The storage area must be readily accessible to all residents and must be located adjacent to or in close proximity to the main waste/recycling storage room or area.

7. The storage facility must be well lit and easily accessible from the main pedestrian access points within the development, in order to improve safety for residents.

8. The storage area shall be free of all obstructions so as not to restrict movement and servicing of the bins or containers.

9. All storage areas must have buffers or wheel stops to prevent bins from making contact with walls for the purposes of noise reduction.

10. There shall be no lip or step between access point to the storage area and the collection point.

11. The ground surface of the storage area shall be of a smooth finish to enable easy movement of the bins/containers and minimise noise impacts.

12. There must be an unobstructed and Continuous Accessible Path of Travel (as per *Australian Standard 1428 Design for Access and Mobility - 2001*) from the waste/recycling storage room(s) or area(s) to:

    - The entry to any Adaptable Housing (as per Australian Standard 4299 Adaptable Housing - 1995);
    - The principal entrance to each residential flat building; and

- The point at which bins are collected/emptied.

  In instances where a proposal does not comply with these requirements, Council will consider alternative proposals that seek to achieve a reasonable level of access to waste/recycling storage room(s) or area(s).

13. Where the number of bins proposed can be accommodated within 50% of the developments frontage on collection day, bins may be collected from a kerbside location. In instances where kerbside bin collection can not be accommodated or is not appropriate due to safety or functional constraints, bins must be collected onsite.

14. Where bins cannot be collected from a kerbside location, the development must be designed to allow for on-site access by garbage collection vehicles of dimensions detailed in Appendix 7. The proposed collection vehicle must be nominated in the development application documentation and must be supported by evidence demonstrating that such a collection service is readily available.

    The site must be configured so as to allow collection vehicles to enter and exit the site in a forward direction and so that collection vehicles do not impede general access to, from or within the site. Access driveways to be used by collection vehicles must be of sufficient strength to support such vehicles.

    Note: As a minimum requirement for collection vehicle access, Council will require indemnity against claims for loss or damage to the pavement or other driving surface. Council may also require indemnity against liabilities, losses, damages and any other demands arising from any on-site collection service. In all cases, a hazard assessment will need to be conducted prior to Council agreeing to undertake the service.

15. Should a collection vehicle be required to enter a property, access driveways and internal roads must be designed in accordance with *Australian Standard 2890.2 Parking Facilities – Off-Street Commercial Vehicle Facilities – 2002*.

16. If bins need to be moved from normal storage areas to a different location for collection purposes, it is the responsibility of agents of the owners' corporation to move the bins to the collection point no earlier than the evening before collection day and to then return the bins to their storage areas no later than the evening of collection day. Bins are to remain in their on-site storage areas at all other times.

17. Residents should have access to a cold water supply for the cleaning of bins and the waste storage areas. Storage areas should be constructed and designed to be weather proof and easy to clean, with wastewater discharged to sewer.

18. Garbage chutes must be designed in accordance with **Appendix 5**, the *Building Code of Australia* and the guidelines contained in *Better Practice Guide for Waste Management in Multi-Unit Dwellings*. Garbage chutes are not suitable for recyclable materials and must be clearly labelled to discourage improper use. Alternative interim disposal facilities for recyclables should be provided at each point of access to the garbage chute system. No garbage chutes are permitted on balcony areas.

19. A communal green waste bin must be provided of sufficient capacity to accept waste from the landscaped areas.

20. Each dwelling unit should be provided with an indoor waste/recycling cupboard (or other appropriate storage space) for the interim storage of a minimum one day's garbage and recycling generation.

5.6 Mixed Use Development

5.6.1 General

1. Where residential and commercial land uses occur within the one building or development, waste management will necessitate a balancing of variable demands, including preservation of residential amenity.

5.6.2 Controls / Requirements

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany the Development Application.

2. The controls for Residential Flat Buildings apply to the residential component of mixed-use development.

3. The controls for Commercial Developments apply to the non-residential component of mixed-use development.

4. Mixed Use development must incorporate separate and self-contained waste management systems for the residential component and the non-residential component. In particular, the development must incorporate separate waste/recycling storage rooms/areas for the residential and non-residential components. Commercial tenants must be prevented (via signage and other means), from using the residential waste/recycling bins and vice versa.

5. The residential waste management system and the non-residential waste management system must be designed so that they can efficiently operate without conflict. Conflict may potentially occur between residential and non-residential storage, collection and removal systems, and between these systems and the surrounding land uses. For example, collection vehicles disrupting peak residential and commercial traffic flows or causing noise issues when residents are sleeping.

6. A garbage storage room at the basement level must be provided for mixed use developments.

7. A bin collection layout must be submitted with a Development Application.

8. A communal green waste bin must be provided of sufficient capacity to accept waste from any landscaped areas located on the site.

9. Waste storage for the commercial component of the building must be calculated having regard to the anticipated waste generation rates of the intended occupants (Refer to Appendix 2).

10. The garbage storage room must be designed to accommodate the number of bins required for the development. The storage room must be located in a position which is accessible by all residents for the depositing of waste and for the relocation of bins to the collection position.

11. The garbage storage room must be designed to accommodate bins with the following minimum dimensions as indicated in Appendix 6

5.7 Commercial Development and Change of Use (Shops, Offices, Food Premises, Hotels, Motels, Licensed Clubs, Education Establishments, Entertainment Facilities and Hospitals)

5.7.1 General Requirements

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany the

Development Application.

2. The plans submitted with the application must show:

   (a) The location of the designated waste and recycling storage room(s) or areas, sized to meet the waste and recycling needs of all tenants;

   (b) The location of temporary waste and recycling storage areas within each tenancy. These are to be of sufficient size to store a minimum of one day's worth of waste;

   (c) An identified collection point for the collection and emptying of waste, recycling and garden waste bins;

   (d) The path of travel for moving bins from the storage area to the identified collection point (if collection is to occur away from the storage area); and

   (e) The on-site path of travel for collection vehicles (if collection is to occur on-site).

3. There must be convenient access from each tenancy and / or larger waste producing area of the development to the waste / recycling storage room(s) or area(s). There must be step-free access between the point at which bins are collected / emptied and the waste / recycling storage room(s) or area(s).

4. Every development must include a designated general waste / recycling storage area or room(s) designed in accordance with Appendix 6 Commercial/Industrial Waste and Recycling Storage Areas.

5. Depending upon the size and type of the development, it may be necessary to include a separate waste / recycling storage room or area for each tenancy.

6. Arrangements must be in all parts of the development for the separation of recyclable materials from general waste. Arrangements must be in all parts of the development for the movement of recyclable materials and general waste to the main waste / recycling storage room / area. For multiple storey buildings, this may require the provision of a goods lift.

7. The waste / recycling storage room or area must be able to accommodate bins that are of sufficient volume to contain the quantity of waste generated at the rate described in Appendix 4, Waste / Recycling Generation Rates between collections.

8. A waste / recycling cupboard must be provided for each and every kitchen area in a development, including kitchen areas in hotel rooms, motel rooms and staff food preparation areas. Each waste / recycling cupboard must be of sufficient size to hold a minimum of a single days waste and to hold separate containers for general waste and recyclable materials.

9. For sites containing road frontages, the development should be designed to make provision for adequate access arrangements for servicing of the waste and recycling storage bin area from the rear or secondary access road.

10. Any garbage chutes must be designed in accordance with the requirements of the Building Code of Australia and Appendix 5 to this part of the DCP.

5.7.2 Operational Requirements

1. All commercial tenants must keep written evidence on site of a valid contract with a licensed waste contractor for the regular collection and disposal of the waste and recyclables that are generated on the site.

2. Between collection periods, all waste / recyclable materials generated on site must be kept in enclosed bins with securely fitting lids so the contents are not able to leak or overflow. Bins must stored in the designated waste / recycling storage room(s) or area(s).

3. The waste / recycling storage room or area must provide separate containers for the separation of recyclable materials from general waste. Standard and consistent signage on how to use the waste management facilities should be clearly displayed.

4. Waste management facilities must be suitably enclosed, covered and maintained so as to prevent polluted wastewater run-off entering the stormwater system.

5. Premises which generate at least 50 litres per day of meat, seafood or poultry waste must have that waste collected on a daily basis or must store that waste in a dedicated and refrigerated waste storage area until collection.

6. Arrangements must be in place regarding the regular maintenance and cleaning of waste management facilities. Tenants and cleaners must be aware of their obligations in regards to these matters.

7. Premises that discharge trade wastewater must do so only in accordance with a written agreement from the local sewer authority. In the Sydney Metropolitan Area this is Sydney Water. Sydney Water defines trade wastewater as 'any liquid, and any substance contained in it, which may be produced at the premises in an industrial and commercial activity, but does not include domestic wastewater (e.g. from hand-basins, showers and toilets).'

5.8 Industrial Development

5.8.1 Requirements

1. A completed Site Waste Minimisation and Management Plan (SWMMP) shall accompany the Development Application.

2. The plans submitted with the application must show:

   (a) The proposed location of the waste and recycling storage area to meet the requirements of the industrial development; and

   (b) The proposed on-site path of travel and manoeuvring of waste collection trucks servicing the development.

3. The industrial development must include a designated general waste and recycling storage area in accordance with Appendix 5 to this chapter.

4. All industrial organisations must keep written evidence on-site of a valid contract with a licensed waste contractor.

5. The type and number of containers used to hold waste and recyclable materials must be compatible with the collection practices of the nominated waste contractor.

6. Arrangements must be in place regarding the regular maintenance and cleaning of waste management facilities.

7. Liquid waste storage must be undertaken in accordance with relevant legislation (i.e. requirements for spill kits, emergency response plans, installation of appropriate bunding etc).

8. Premises that discharge trade wastewater must do so only in accordance with a written agreement from the local sewer authority. In the Sydney Metropolitan Area this is Sydney Water. Sydney Water defines trade wastewater as 'any liquid, and any substance contained in it, which may be produced at the premises in an industrial and commercial activity, but does not include domestic wastewater (e.g. from hand-basins, showers and toilets).'

Appendix: 1

Site Waste Minimisation and Management Plan Template

Applicant and Project Details (All Developments)	
Applicant Details	
Application No.	
Name	
Address	
Phone number(s)	
Email	
Project Details	
Address of development	
Existing buildings and other structures currently on the site	
Description of proposed development	
This development achieves the waste objectives set out in the DCP. The details on this form are the provisions and intentions for minimising waste relating to this project. All records demonstrating lawful disposal of waste will be retained and kept readily accessible for inspection by regulatory authorities such as Wollongong City Council, NSW EPA or NSW WorkCover..	
Name	
Signature	
Date	

(Source: NSW Department of Environment and Climate Change. Model Waste Not DCP Chapter 2008)

Demolition (All Types of Development)

Address of development: _____

	Reuse	Recycling	Disposal	
Type of waste generated	**Estimate Volume (m^3) or Weight (t)**	**Estimate Volume (m^3) or Weight (t)**	**Estimate Volume (m^3) or Weight (t)**	**Specify method of on site reuse, contractor and recycling outlet and /or waste depot to be used**
Excavation material				
Timber (specify)				
Concrete				
Bricks/pavers				
Tiles				
Metal (specify)				
Glass				
Furniture				
Fixtures and fittings				
Floor coverings				
Packaging (used pallets, pallet wrap)				
Garden organics				
Containers (cans, plastic, glass)				
Paper/cardboard				
Residual waste				
Hazardous/special waste e.g. asbestos (specify)				
Other (specify)				

(Source: NSW Department of Environment and Climate Change. Waste Not DCP Chapter 2008)

Construction (All Types of Development)

Address of development: _____

	Reuse	Recycling	Disposal	
Type of waste generated	**Estimate Volume (m^3) or Weight (t)**	**Estimate Volume (m^3) or Weight (t)**	**Estimate Volume (m^3) or Weight (t)**	**Specify method of on site reuse, contractor and recycling outlet and/or waste depot to be used**
Excavation material				
Timber (specify)				
Concrete				
Bricks				
Tiles				
Metal (specify)				
Glass				
Plasterboard (offcuts)				
Fixtures and fittings				
Floor coverings				
Packaging (used pallets, pallet wrap)				
Garden organics				
Containers (cans, plastic, glass)				
Paper/cardboard				
Residual waste				
Hazardous/special waste (specify)				

(Source: NSW Department of Environment and Climate Change Model Waste Not DCP Chapter 2008)

Ongoing Operation (Residential, Multi Unit, Commercial, Mixed Use and Industrial)

Address of development: _____

Show the total volume of waste expected to be generated by the development and the associated waste storage requirements.

	RECYCLABLES		COMPOSTABLES	RESIDUAL WASTE*	OTHER
	Paper/ cardboard	Metals/ plastics/glass			
Amount generated (L per unit per day)					
Amount generated (L per development per week)					
Any reduction due to compacting equipment					
Frequency of collections (per week)					
Number and size of storage bins required7					
Floor area required for storage bins (m^2)					
Floor area required for manoeuvrability (m^2)					
Height required for manoeuvrability (m)					

* Current “non-recyclables” waste generation rates typically include food waste that might be further separated for composting.

Construction Design (All Types of Developments)

Outline how measures for waste avoidance have been incorporated into the design, material purchasing and construction techniques of the development:

Materials

Lifecycle

Detail the arrangements that would be appropriate for the ongoing use of waste facilities as provided in the development. Identify each stage of waste transfer between residents' units/commercial tenancies and loading into the collection vehicle, detailing the responsibility for and location and frequency of, transfer and collection.

Plans and Drawings (All Developments)

The following checklists are designed to help ensure SWMMPs are accompanied by sufficient information to allow assessment of the application.

Drawings are to be submitted to scale, clearly indicating the location of and provisions for the storage and collection of waste and recyclables during:

- Demolition
- Construction
- Ongoing operation.

DEMOLITION

Do the site plans detail/indicate:

	Tick Yes
Size and location(s) of waste storage area(s)	
Access for waste collection vehicles	
Areas to be excavated	
Types and numbers of storage bins likely to be required	
Signage required to facilitate correct use of storage facilities	

CONSTRUCTION

Do the site plans detail/indicate:\

	Tick Yes
Size and location(s) of waste storage area(s)	
Access for waste collection vehicles	
Areas to be excavated	
Types and numbers of storage bins likely to be required	
Signage required to facilitate correct use of storage facilities	

On-Going Operational Phases of The Development

Do the site plans detail/indicate:

	Tick Yes
Space	
Size and location(s) of waste storage areas	
Recycling bins placed next to residual waste bins	
Space provided for access to and the manoeuvring of bins/equipment	
Any additional facilities	
Access	
Access route(s) to deposit waste in storage room/area	
Access route(s) to collect waste from storage room/area	
Bin carting grade	
Location of final collection point	
Clearance, geometric design and strength of internal access driveways and roads	
Direction of traffic flow for internal access driveways and roads	
Amenity	
Aesthetic design of waste storage areas	
Signage – type and location	
Construction details of storage rooms/areas (including floor, walls, doors, ceiling design, sewer connection, lighting, ventilation, security, wash down provisions etc)	

Appendix: 2 Waste / Recycling Generation Rates

Construction Waste Generation

'Rule of Thumb' for renovations and small home building

- Timber 5-7% of material ordered
- Plasterboard 5-20% of material ordered
- Concrete 3-5% of material ordered
- Bricks 5-10% of material ordered
- Tiles 2-5% of material ordered

(Source: Waste Planning Guide for Development Application, Inner Sydney Waste Board, 1998)

Ongoing Operation Waste Generation

Premises type	Waste generation	Recyclable material generation
Backpackers' Hostel	40L/occupant space/week	20L/occupant space/week
Boarding House, Guest House	60L/occupant space/week	20L/occupant space/week
Food premises:		
• Butcher	80L/100m^2 floor area/day	Variable
• Delicatessen	80L/100m^2 floor area/day	Variable
• Fish Shop	80L/100m^2 floor area/day	Variable
• Greengrocer	240L/100m^2 floor area/day	120L/100m^2 floor area/day
• Restaurant, Café	10L/1.5m^2 floor area/day	2L/1.5m^2 floor area/day
• Supermarket	240L/100m^2 floor area/day	240L/100m^2 floor area/day
• Takeaway food shop	80L/100m^2 floor area/day	Variable
Hairdresser, Beauty Salon	60L/100m^2 floor area/week	Variable
Hotel, Licensed Club, Motel	5L/bed space/day 50L/100m^2 bar area/day 10L/1.5m^2 dining area/day	1L/bed space/day 50L/100m^2 bar area/day 50L/100m^2 dining area/day
Offices	10L/100m^2 floor area/day	10L/100m^2 floor area/day
Shop less than 100m^2 floor area Shop greater than 100m^2 floor area	50L/100m^2 floor area/day 50L/100m^2 floor area/day	25L/100m^2 floor area/day 50L/100m^2 floor area/day

Premises type	Waste generation	Recyclable material generation
Showroom	40L/100m^2 floor area/day	10L/100m^2 floor area/day
Multi-Unit Dwellings[1]	80L/unit/week	40L/unit/week

(Sources: Department of Environment and Climate Change Model Waste Not DCP Chapter 2008 which was adapted from Waverley Council Code for the Storage and Handling of Waste.[1] Appendix A, Better Practice Guide For Waste Management In Multi-Unit Dwellings 2007)

Appendix: 3 Indicative Bin Sizes

Bin type	Height	Depth	Width
80 Litre Bin	870mm	530mm	450mm
120 Litre Bin	940mm	560mm	485mm
140 Litre Bin	1065mm	540mm	500mm
240 Litre Bin	1080mm	735mm	580mm
660 Litre Bin	1250mm	850mm	1370mm
$2m^3$ Skip Bin	865mm	1400mm	1830mm
$3m^3$ Skip Bin	1225mm	1505mm	1805mm
$4.5m^3$ Skip Bin	1570mm	1605mm	1805mm

These dimensions are only a guide and differ slightly according to manufacturer, if bins have flat or dome lids and are used with different lifting devices.

Additional bin dimensions are available in *Better Practice Guide for Waste Management In Multi-Unit Dwellings 2007*.

Appendix: 4

Waste Recycling/Storage Rooms in Multi–Unit Dwellings

1. Building Code of Australia

Waste/recycling storage rooms must be constructed in accordance with the requirements of the Building Code of Australia (BCA).

2, Location and Appearance

Waste/recycling storage rooms must be integrated into the design of the overall development. It is preferable that such rooms be located behind the front building line. Wherever possible, the room should be in a basement location within the main building envelope (rather than a separate stand-alone structure). Materials and finishes visible from outside should be similar in style and quality to the external materials used in the rest of the development.

Waste/recycling storage rooms must be located and designed in a manner that reduces adverse impacts upon the inhabitants of any dwellings on the site and upon neighbouring properties. The location and design of the room should minimise adverse impacts associated with:

- The proximity of the room to any dwellings
- The visibility of the room
- Noise generated by any equipment located within the room
- Noise generated by the movement of bins into and out of the room
- Noise generated by collection vehicles accessing the site; and
- Odours emanating from the room.

3. Size

• Waste/recycling storage rooms must be of adequate size to comfortably accommodate all waste and recycling bins associated with the development.

4. Layout

The gradient of waste/recycling storage room floors and the gradient of any associated access ramps must be sufficiently level so that access for the purpose of emptying containers can occur in accordance with WorkCover NSW Occupational Health and Safety requirements.

Within waste/recycling storage rooms, containers used for the storage of recyclable materials should be kept separate from (but close to) general waste containers — so that the potential for contamination of recyclable materials is minimised.

Appendix: 5 Garbage Chutes

1. Garbage Chute Design

(a) Garbage chutes must be constructed in accordance with the requirements of the *Building Code of Australia*.

(b) Garbage chutes must be located and insulated in a manner that reduces noise impacts.

(c) Chutes, service openings and charging devices must be constructed of material (such as metal) that is smooth, durable, impervious, non-corrosive and fire resistant.

(d) Chutes, service openings and charging devices must be capable of being easily cleaned.

(e) Chutes must be cylindrical and should have a diameter of at least 500mm.

(f) There must not be any bends (or sections of reduced diameter) in the main shaft of the chute.

(g) Internal overlaps in the chute must follow the direction of waste flow.

(h) Chutes must deposit rubbish directly into a bin or compactor located within a waste / recycling storage room.

(i) A cut-off device must be located at or near the base of the chute so that the bottom of the chute can be closed when the bin or compacting device at the bottom of the chute is withdrawn or being replaced.

(j) The upper end of a chute should extend above the roofline of the building.

(k) The upper end of a chute should be weather protected in a manner so that the upward movement of air out of the chute is not impeded.

2. Garbage Chute Service Room Design

(a) The service opening on each floor of the building must be located in a dedicated service room.

(b) The charging device for each service opening must be self-closing and must not project into the main chute.

(c) Each service room must include containers for the storage of recyclable materials. Signage regarding the materials that can be recycled should be displayed near these containers.

(d) Each service room must be located for convenient access by users and must be well ventilated and well lit.

(e) Branches connecting service openings to the main chute are to be no more than 1 metre long.

(f) The floors, walls and ceilings of service rooms must be finished with smooth, durable materials that are capable of being easily cleaned.

(g) Service rooms must include signage that clearly describes the types of materials that can be deposited into the garbage chute and the types of materials which should be deposited into recycling bins.

3. Management

(a) Garbage chutes are not to be used for the disposal of recyclable materials. Signage to this effect should be displayed near service openings.

(b) Arrangements must be in place for the regular maintenance and cleaning of garbage chutes and any associated service rooms, service openings and charging devices.

(c) Arrangements must be place for the regular transferral of recyclable materials (which are stored in service rooms) to the main waste / recycling storage room.

Appendix: 6

Commercial / Industrial Waste and Recycling Storage Areas

1. Compliance with the Building Code of Australia

(a) Waste / recycling storage areas must be constructed in accordance with the requirements of the Building Code of Australia.

2. Location and Appearance of Storage Areas

(a) Waste / recycling storage areas must be integrated into the design of the overall development.

(b) Waste and recycling storage areas must be located and designed in a manner that reduces adverse impacts upon neighbouring properties and the streetscape. The location and design of the areas should minimise adverse impacts associated with:

(i) The proximity of the storage area to any neighbouring dwellings;

(ii) The visibility of the area;

(iii) Noise generated by any equipment located within the storage area;

(iv) Noise generated by the movement of bins into and out of the storage area; and

(v) Odours emanating from the storage area.

3. Size and Layout of the Storage Areas

(a) Waste and recycling storage areas must be of adequate size to comfortably accommodate all waste and recycling bins associated with the development.

(b) Waste and recycling storage areas must be able to accommodate separate general waste bins and recycling bins which are of sufficient volume to contain the quantity of waste generated between collections.

(c) The gradient of waste and recycling storage area floors and the gradient of any associated access ramps must be sufficiently level so that access for the purpose emptying containers can occur in accordance with relevant Occupational Health and Safety legislation.

(d) Within waste and recycling storage areas, containers used for the storage of recyclable materials should be kept separate from general waste containers, in order to minimise the potential for contamination of recyclable materials.

4. Servicing Access Requirements

(a) The development must be designed to allow adequate access by collection vehicles used by the nominated waste contractor. Wherever possible, the site must be configured to allow collection vehicles to enter and exit the site in a forward direction and so collection vehicles do no impede general access to, from and within the site. Access driveways to be used by collection vehicles must be of sufficient strength to support such vehicles.

(b) Servicing arrangements for the emptying of bins must be compatible with the operation of any other loading / unloading facilities on-site.

(c) In retail and business development, convenient access is required between each retail / commercial tenancy and the waste and recycling storage area. The access route between the storage area and the servicing point must be step-free.

(d) Waste and recycling storage areas must have a smooth, durable floor and must be enclosed with durable walls / fences that extend to the height of any containers which are kept within.

(e) Doors and gates to waste and recycling storage areas must be durable. There must be a sign adjacent to the door / gate that indicates that the door is to remain closed when not in use. All doors and gates must be openable from inside and outside the storage area and must be wide enough to allow for the easy passage of waste and recycling containers.

(f) Waste and recycling storage areas must be serviced by hot and cold water provided through a centralised mixing valve. The hose cock must be protected from the waste containers and must be located in a position that is easily accessible when the area is filled with waste containers.

(g) The floor must be graded so that any water is directed to the sewer authority approved drainage connection located upon the site.

5. Signage

(a) Waste and recycling storage areas must include signage that clearly describes the types of materials that can be deposited into recycling bins and general garbage bins.

6. Management

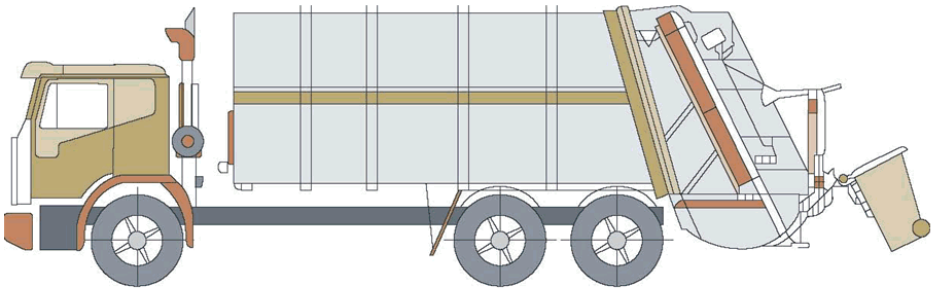
(a) Arrangements must be in place for the regular maintenance and cleaning of waste and recycling storage areas. Waste and recycling containers must only be washed in an area which drains to a sewer authority approved drainage connection.

Appendix: 7 Collection Vehicles

Waste collection vehicles may be side loading, rear-end loading, front-end loading or crane trucks. The size of vehicle varies according to the collection service. The following characteristics represent the typical collection vehicle, however, these are only for guidance. It may be possible to engage a collection service provider to use smaller collection vehicles to service developments with narrow roadways and laneways, or for on-site collections. However, as the availability of smaller vehicles to make services is limited, developments should be designed to accommodate vehicles of a similar size to that reported below.

Rear loading collection vehicle

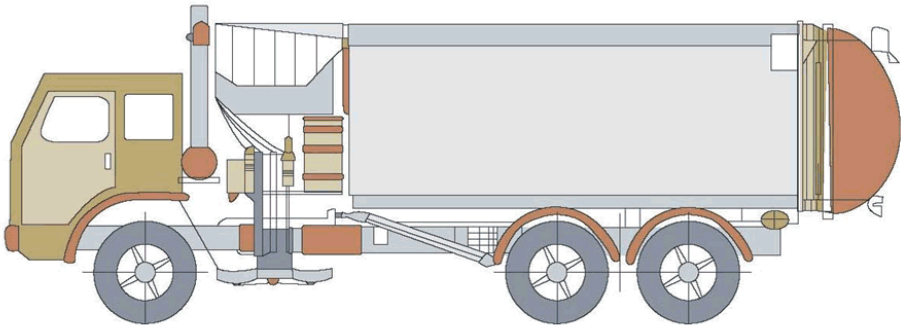
This is commonly used for domestic garbage and recycling collections from Multiple Dwellings and Residential Flat Buildings. It can be used to collect waste stored in MGBs or bulk bins, particularly where bins are not presented on the kerbside.



Rear loading collection vehicle	
Length overall	10.24m
Width overall	2.5m
Operational height	3.5m
Travel height	3.5m
Weight (vehicle only)	12.4 tonnes
Weight (payload)	9.5 tonnes
Turning circle	18.0m

Side loading collection vehicle

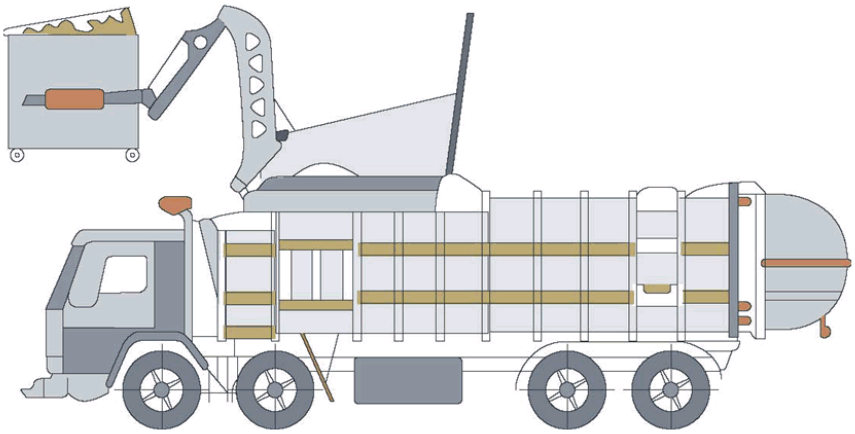
This is the most commonly used vehicle for domestic garbage and recycling collections. It is only suitable for collecting MGBs up to 360 litres in size.



Side-loading collection vehicle	
Length overall	9.64m
Front overhang	1.51m
Wheelbase	5.20m
Rear overhang	2.93m
Turning circle kerb to kerb	17.86m
Turning circle wall to wall	20.56m
Front of vehicle to collection arm	3.8m
Maximum reach of side arm	3.0m
Travel height	3.63m
Clearance height for loading	3.9m

Front lift-loading collection vehcicle

This is mainly used for collecting commercial and industrial waste, and is only suitable for bulk bins with front lift pockets (not MGBs).



Front-lift loading collection vehicle	
Length overall	10.52m
Front overhang	1.51m
Wheelbase	5.84m
Rear overhang	3.17m
Turning circle kerb to kerb	22.10m
Turning circle wall to wall	23.66m
Travel height	3.82m
Clearance height for loading	6.1m

Part E: General Controls – Environmental Controls

Chapter E19: Earthworks (Land Reshaping Works)

Contents

Document Control

Document ID: Wollongong DCP 2009 – E19 Earthworks

Rev No	Adoption Date	In force date	Revision Details
0	15/12/09	1/3/10	Adopted
1	27/7/11	3/8/11	Revised
2	11/12/17		Contaminated Lands Review update

1 INTRODUCTION

1. This Chapter of the DCP outlines Council's requirements and environmental management measures required for development involving earthworks. Other parts of this DCP include more detailed controls regarding the dimensions of filling and excavation works permitted for specific development, such as residential development.

2. The Local Environmental Plan requires that development consent be obtained for earthworks, except in certain circumstances and includes several matters that must be considered when assessing Development Applications for earthworks.

   The following definitions are as contained in the LEP.

   Fill: Refer to LEP

   Excavation: Refer to LEP

   Land reshaping involves a combination of filling and excavation.

3. These uses could be undertaken alone or as an ancillary component to other development such as excavation of a basement for a residential flat building or land reshaping works associated with a subdivision.

2 OBJECTIVES

1. The main objectives of this Chapter of the DCP are to:

   a) Provide guidelines for land filling, excavation and land reshaping works;

   b) Prevent land filling, excavation or land reshaping works which create or contribute to environmental problems both on and off site;

   c) Ensure the future use of land is not adversely affected by land reshaping works;

   d) Ensure that no adverse impact occurs to local drainage systems (including groundwater systems), overland flow characteristics and flood storage;

   e) Ensure that appropriate environmental management measures are applied to conserve the landscape and protect water quality;

   f) Promote appropriate rehabilitation and revegetation of the site;

   g) Protect human safety and the integrity of existing buildings and assets;

   h) Minimise amenity impacts upon surrounding neighbourhoods;

   i) Facilitate the regulated disposal / use of excavated material;

   j) Ensure that buildings are designed to fit the lot and ensure that the nature, extent and depth of land reshaping works are kept to appropriate levels; and

   k) Ensure compliance with the legal requirements regarding the removal of excess materials and importation of fill materials in accordance with the NSW EPA *Waste Classification Guidelines* (2014).

   l) Promote the beneficial reuse of VENM and ENM where appropriate (as defined in the Protection of the Environment Operations (Waste) Regulation 2014).

3 INFORMATION REQUIREMENTS FOR LODGEMENT WITH THE DEVELOPMENT APPLICATION

1. Any Development Application involving only fill, excavation or other land reshaping works will be required to be supported by a Statement of Environmental Effects (SEE) report which demonstrates the need for the proposed earthworks and considers the potential impacts on:

   (a) Existing or constructed landform, trees and vegetation;

   (b) Geotechnical stability;

   (c) Dust and air pollution;

   (d) Soil erosion and sedimentation;

   (e) Water pollution;

   (f) Groundwater, surface water, stormwater, flood storage;

   (g) Contamination;

   (h) Salinity and Acid Sulphate Soils; and

   (i) Neighbourhood amenity and aesthetics.

2. The Statement of Environmental Effects (SEE) must also include information on the following:

   (a) Method of compaction and degree of compaction;

   (b) Method of excavation;

   (c) Method of drainage;

   (d) Haulage routes;

   (e) Destination of extracted material;

   (f) Potential impacts on adjoining properties/the environment and proposed mitigation measures;

   (g) A flood study, where required by Council (Refer to Part E Floodplain Management in this DCP); and

   (h) A Virgin Excavated Natural Material (VENM) or appropriate Waste Classification (such as ENM), where required by Council, outlining the origin and classification of materials imported and exported from site.

3. The Development Application must also be accompanied by a survey plan and a site plan (at a 1:100 or 1:200 scale) which shows:

   (a) Existing natural contour levels and proposed finished contour (shown in bold) levels at 2 metre intervals in Australian Height Datum (AHD);

   (b) Cross section plans identifying the nature, extent and depth of excavation and/or land filling and associated works, batter slopes and any retaining structures;

(c) The location of cut, fill, batters, drainage and retaining structures;

(d) Existing natural features, dams, watercourses, trees and especially any trees or other vegetation likely to be affected by works;

(e) The location of any contaminated materials, acid sulphate soils, coal wash or similar materials that require specialised handling, treatment or segregation;

(e) Staging plans, where land reshaping is proposed to be done in stages;

(g) An Erosion and Sedimentation Control Plan (compliant with relevant standards i.e. the 'blue book' http://www.environment.nsw.gov.au/resources/water/BlueBookVol1.pdf);

(h) Rehabilitation Plan for applications involving earthworks without associated built development works that indicates:

i. Vegetation to be retained, removed and rehabilitated;

ii. Final landform;

iii. Proposed site stabilisation and weed control mechanisms;

iv. Whether fill material is capable of sustaining suitable plant growth.

4. Where development involves fill materials being temporarily stockpiled on any land, the site plan must show the location, quantity, height and configuration of proposed stockpiles. The Statement of Environmental Effects must detail:

(a) The proposed period of stockpiling (topsoils retained for beneficial reuse must be managed in an appropriate manner to maintain soil viability);

(b) Any proposed preparation requirements, such as land clearing;

(c) Soil erosion, sedimentation and dust controls proposed to be implemented during the temporary stockpiling of the landfill material, including any proposed covering protection or stabilisation; and

(d) Soil characteristics, including the potential for leaching or contamination, of the stockpiled materials.

4 DEVELOPMENT STANDARDS

4.1 Stormwater Management, Sediment Control and Land Stability

1. It is the responsibility of the developer undertaking earthworks to ensure such works do not adversely impact on stormwater drainage, groundwater, surface water quality or land stability. Note: It is an offence to pollute waters under the *Protection of the Environment Operations Act 1997*.

2. Erosion and Sediment control infrastructure must be installed as soon as practical and where possible at the onset of any earthworks.

3. Areas of excavation must be suitably retained/battered so that uphill areas are stable and do not lose development potential.

4. Filling must be suitably retained / battered so as to avoid slumping, or sediment entering into drainage systems or downstream properties.

5. An application involving earthworks must address impacts on the geotechnical stability, groundwater, acid sulphate soils, contamination and salinity of the site. Earthworks on steep slopes (i.e. land having a gradient of 15% or greater) and/or earthworks greater than 1 metre in height will generally be required to submit a geotechnical report stating the suitability of the land for development. This report shall comply with the requirements contained in the Geotechnical chapter in Part E of this DCP.

6. Any excavation within the zone of influence for any other structure or building requires a Dilapidation Report (prepared by a suitably qualified engineer) demonstrating the existing condition of neighbouring buildings and structures. The Dilapidation Report will be required to be submitted with the Development Application. Prior to works commencing a Structural Report may be necessary to propose measures that will protect the integrity of buildings and structures.

7. The alteration of overland flow or local drainage shall not be permitted to adversely impact on adjoining or adjacent properties. No net loss of flood storage and /or conveyance will be permitted. In this regard, Council may require the developer to undertake a flood study to demonstrate the likely impacts and make recommendations for the design of the proposed earthworks.

8. For exposed earthworks, a site management program incorporating sediment, dust and erosion control measures (e.g. cleaning of sediment traps, fences, access control, basins and maintenance of vegetative cover) must be implemented prior to the commencement of any works and maintained throughout the duration of the earthworks and until vegetation cover / suitable stabilisation is established (i.e. in accordance with the 'blue book' requirements for the stabilisation of materials).

4.2 Imported Fill

1. Imported fill must be free from any soil contamination and accompanied by an appropriate waste classification prepared in accordance with the requirements of the NSW EPA *Waste Classification Guidelines* (2014) and with consideration of the *Protection of the Environment Operations (Waste) Regulations* (2014). All imported material must be classified as virgin excavated natural material (VENM). In restricted circumstances where deemed appropriate Excavated Natural Material (ENM) may also be accepted as long as it is in keeping with the requirements of any regulatory bodies and the proposed site use. Demolition or putrescibles waste cannot be buried ion site and is not permitted to remain on site in any circumstance.

2. Where earthworks involve land known or suspected to be contaminated, the provisions of the Contaminated Land Management Chapter in Part E of this DCP will also apply.

4.3 Earthworks Planning, Design and Construction

1. All earthworks are to be planned, designed and constructed in accordance with Australian Standard *AS3798 – Guidelines on earthworks for commercial and residential developments*.

2. Batter cross-slopes should be restricted to a slope of 25% (1 vertical in 4 horizontal).

3. Excavation of hard bedrock in urban areas shall be undertaken in a manner that minimises amenity impacts on the surrounding neighbourhood. Methods of excavation are to be selected appropriate for the bedrock type such that noise and vibration nuisance generated by the works are within Department of Environment and Climate Change limits.

4. All excavations and backfilling shall be executed safely and in accordance with appropriate professional standards and NSW Work Cover Authority requirements

5. Fill should not cover topsoil. Topsoil should be removed, stockpiled and replaced over the fill.

4.4 Use of Coalwash as Fill Material

Coal Washery Reject (CWR) is locally known as "Coalwash" and is a by-product of the coal mining industry. Currently the reuse of CWR is managed via the EPA under The Coal Washery Rejects Order 2014 and The Coal Washery Rejects Exemption 2014. Council recommends these documents be consulted prior to any reuse applications of CWR. Failure to complete reuse applications of CWR in accordance with this documents will result in a breach of the Protection of the Environment Operations (Waste) Act 2014 (refer to http://www.epa.nsw.gov.au/wasteregulation/orders-exemptions.htm).

CWR can, in appropriate settings, be beneficially reused due to favourable engineering properties for use as a general fill. Despite CWR containing a residue of combustible material (which may be a significant portion of the total volume of the material), reuse may be advantageous due to the availability of the materials in the Illawarra area combined with a history of low risk controlled application scenarios (i.e. engineered fill in major road upgrades).

In some rare circumstances, this residue of combustible material has been ignited and once ignited is costly to manage and problematic to extinguish.

This Clause of Chapter E19 of the Wollongong DCP sets the minimum standard for the use of CWR such that the likelihood of ignition is within acceptable limits and updates Council's Policy No32.03 dated 2 December 1996 Minute No364 'Coal Washery Refuse in Subdivisions.'

CWR is permitted for use as a general fill in civil engineering earthworks subject to its use being in compliance with the conditions described in Chapter E19 of the Wollongong DCP (Clause 4.4 in particular) and the relevant legislations (i.e. the various relevant Resource Recovery Exemptions prepared under the Protection of the Environment and Operations (Waste) Act 2014).

4.4.1 Development Controls

1. Very coarse CWR material (greater than 150mm particle size) is to be rejected.

2. Very fine slurry CWR material (tailings) is to be rejected.

3. Notwithstanding sub-clause 1 and 2 above, a homogenous mixture of uniformly graded CWR incorporating some very coarse materials and some very fine slurry materials is acceptable.

4. During placement and compaction of CWR, site controls are to be maintained in place to prevent run-off and dust nuisance.

5. Service trenches within the CWR are to be backfilled with inert material such as sand, road base or another granular material.

6. Notwithstanding the level of compaction of the CWR, sites developed with CWR will be designated Class P sites in accordance with Australian Standard AS2870 Residential Slabs and Footings.

7. Footings and foundation systems for any structures to be placed on the completed CWR fill emplacement, compacted in accordance with this Chapter of the Wollongong DCP, are to be designed by a structural engineer based on advice from a geotechnical consultant.

Where the completed CWR emplacement is not in preparation for an overlying future structure, it is to be covered with not less than 300mm of inert cover such as topsoils.

Supply of CWR

8. The supply of CWR is to comply with the relevant exemptions prepared by the EPA and document under the Protection of the Environment Operations (Waste) Act 2014 (i.e. http://www.epa.nsw.gov.au/resources/waste/rro14-coal-wash-rejects.pdf).

9. The generator of the CWR must provide to the consumer of the CWR a written statement of compliance with the above exemption.

10. The statement of compliance from the generator must clearly state that the CWR has been appropriately assessed against the requirements of The Coal Washery Rejects Order 2014 (Section 4).

Placement and Compaction

11. Placement of the CWR is to comply with Australian Standard AS3798 Guidelines on Earthworks for Commercial and Residential Developments and the NSW EPA Coal Washery Reject Exemption 2014 (http://www.epa.nsw.gov.au/resources/waste/rre14-coal-wash-rejects.pdf).

12. Materials must not be placed beneath water, including groundwater.

13. Compaction is to be undertaken with Level 1 engineering control as defined in AS3798.

14. The minimum density ratio of the compacted CWR is to be 100% standard as determined by test methods AS1289.5.1.1 and AS1289.5.4.1. Moisture content determinations are to be in accordance with AS1289.2.1.1 with the exception that a 50^{o}C oven is to be used.

15. If nuclear gauges are to be used to determine field wet density then the field moisture content is to be determined by test method AS1289.2.1.1 with the exception that a 50^{o}C oven is to be used (as per sub-clauses 13 above).

16. A works-as-executed geotechnical report is required which demonstrates that the completed works comply with this Chapter of the Wollongong DCP.

    The works-as-executed geotechnical report will describe the residual geotechnical constraints on the compacted CWR fill which are to be accommodated in the design of foundation systems and footings for any structures proposed to be built on the fill.

Pre-existing CWR fill (onsite).

16. Any pre-existing CWR fill is assumed to be uncontrolled fill and not compliant with this Chapter of the Wollongong DCP.

17. Geotechnical advice is required to either:

    a) Demonstrate that the pre-existing CWR fill complies with sub-clause 9 under the heading *Supply of CWR* with respect to its content of residual combustibles **and** sub-clauses 14 under the heading *Placement and Compaction* and sub-clause 15 under the heading *Placement and Compaction* with respect to its in-situ density; or

    b) Detail a site remediation program setting out a program of remedial works which can be undertaken so that the pre-existing CWR can be brought into compliance with sub-clause 9 under the heading *Supply of CWR* with respect to its content of residual combustibles

and sub-clauses 14 under the heading *Placement and Compaction* and sub-clause 15 under the heading *Placement and Compaction* with respect to its in-situ density.

c) Any CWR which is determined to be non-compliant due to it being high in residual combustibles content may be blended with an inert material in sufficient proportion to bring the overall combustibles content of the blended material into the acceptable range for compliance with the Chapter of the Wollongong DCP.

18. If the CWR is to support a structure and, after seeking the geotechnical advice of sub-clause 17, is considered by the developer to be impractical to be brought into compliance with this Clause of the Wollongong DCP then the CWR is to be removed.

19. If the developer chooses to remediate the CWR into compliance with this Chapter of the Wollongong DCP then the works are to be undertaken in accordance with the requirements under the Placement and Compaction heading and by following a program developed through sub-clause 18(b).

4.5 Revegetation Requirements

Vegetation providing a dense, uniformly distributed cover shall be required as soon as possible following site disturbance to prevent erosion and sedimentation occurring. Soil erosion and sediment control measures must be in place prior to disturbance of the site and maintained during earthworks until such time as revegetation of the site has been completed.

4.6 Certification of Works

1. Council may require the following information prepared by suitably qualified persons on completion of works:

   (a) Surveyors report and works-as-executed plans with finished contour levels at 2m intervals to AHD;

   (b) Hydraulic certification;

   (c) Engineering certification of the completed earthworks in accordance with the recommendations of AS3798 and controlled fill is to have Level 1 Engineering Certification as defined in AS3798;

   (d) Site Contamination Audit Statement issued by an accredited site auditor pursuant to Part 4 of the Contaminated Land Management Act 1997 confirming that the site is suitable for the proposed land use activity (i.e. contaminants have either been remediated and / or removed from the site or contamination levels are below the NSW Department of Environment and Climate Change or ANZECC threshold criteria); and

   (e) Documentation supporting the assessment of the materials in accordance with relevant Protection of Environment Operations (Waste) Act 2014 exemptions listed above.

Contents

Figures

Document Control

Document ID: Wollongong DCP 2009 – E20 Contaminated Land Management

Rev No	Adoption Date	In force date	Revision Details
0	15/12/09	1/3/10	Adopted
1	27/7/11	3/8/11	Revised
2	11/12/17		Contaminated Lands Review update

1 INTRODUCTION

1. This chapter outlines Council's procedures in dealing with the assessment of known or potentially contaminated land and the remediation and subsequent validation of contaminated land.

2. This policy directly relates to the State Environmental Planning Policy No. 55 – Remediation of Land (SEPP 55), the Contaminated Land Management Act 1997 and the joint NSW Department of Urban Affairs & Planning & Environment Protection Authority publication titled *Managing Land Contamination: Planning Guidelines SEPP 55 Remediation of Land (August 1998)*. In the advent of a discrepancy between this DCP, and the above documentation, the latter will preside.

2 OBJECTIVES

1. The objectives of the Contaminated Land Management policy are to:-

   a) Consider the likelihood of contamination upfront in the planning and development process;
   b) Ensure that any proposed development of an identified contaminated site will not result in any unacceptable levels of risk to human health or the environment;
   c) Avoid inappropriate restrictions on the development of known or potentially contaminated sites;
   d) Ensure site investigations and remediation work are carried out in a satisfactory manner and where appropriate are subject to independent validation and/or Site Audit Statement (SAS) prepared by an EPA Accredited Site Auditor;
   e) Ensure that ongoing responsibility for the management and monitoring of contaminated land is clearly and legally assigned (Through mechanisms such as Environmental Management Plans and Section 88B Property Title Notifications).

3 CONTAMINATED LAND MANAGEMENT ACT 1997

Duty to Report Contamination on Land which presents a Significant Risk of Harm to Human Health or the Environment

1. The Contaminated Land Management Act 1997 requires that either the landowner or the person whose activities have caused contamination must notify the NSW Environmental Protection Agency as soon as practicable after becoming aware of the contamination incident or activity. Reference should be made to the NSW EPA Guidelines on the Duty to Report Contamination under the *Contaminated Land Management Act* (2015)

2. A formal notice under section 60 of the Contaminated Land Management Act 1997 is required

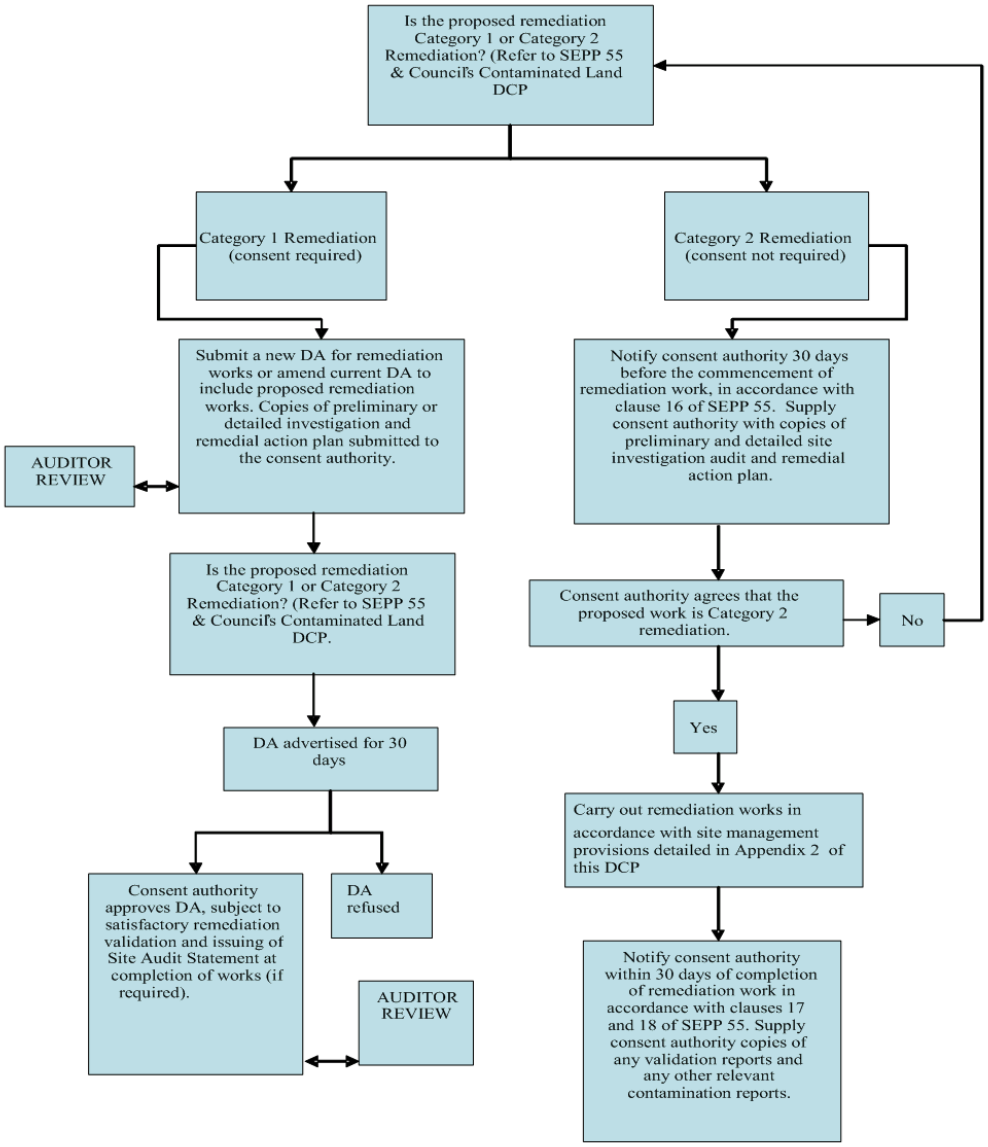
4 STATE ENVIRONMENTAL PLANNING POLICY NO. 55 REMEDIATION OF LAND (SEPP 55)

1. The aim of SEPP 55 is to provide for a state-wide planning approach to the assessment, remediation and validation of contaminated land.

2. Under SEPP 55, Council is required in determining a Development Application to consider whether land is contaminated and whether the proposed remediation of any identified contamination site will satisfactorily render the land suitable for the intended land use upon the site.

3. SEPP 55 states that a person must not carry out a category 1 remediation work except with the consent of the consent authority. Under the SEPP, a person may however carry out category 2 remediation work, without the consent of the consent authority (however the local consent authority must be informed of the intended remediation works 30 days prior to commencement).

5. For more information relating to the categories of work and the requirements refer to the SEPP.



** NOTE: Development consent may be required if works such as demolition or shoring are involved.

Figure 1: Procedure for category 1 and category 2 remediation work

4.1 Reporting Requirements

4.2 General

The key principle in considering contaminated land and the likelihood of land contamination is to determine any issues as early as possible in the planning and development process. This section provides an overview of the requirements in the SEPP 55. For full detail of requirements refer to the SEPP.

4.3 Stages for investigation

1. There are 4 main stages associated with the investigation of a site for potential contamination and its subsequent remediation and validation, namely:-
    - Stage 1 – Preliminary Investigation;
    - Stage 2 – Detailed Investigation;
    - Stage 3 – Remediation Action Plan; and
    - Stage 4 – Validation Report.

All reporting must be completed in accordance with relevant regulations, legislation and guidance documentation. Reports must also be completed by appropriately experienced and qualified consultants with a demonstrated history of working on CLM projects.

At any stage throughout the investigation, remediation and validation process Council may request a Site Audit Statement (SAS) be prepared by an appropriately accredited NSW EPA Auditor. The costs associated with the preparation of the SAS are to be covered by the applicant. Council may request a SAS when:

- Council has reasonable grounds to believe the information provided to Council is incomplete or incorrect.
- Council wishes to confirms the information provided conforms to relevant legislations, guidelines (etc.).
- Council does not have the capability to undertake appropriate technical reviews (i.e. a site with complex contamination issues and significant risks to human health and the environment).

4.3.1 Stage 1 – Preliminary Investigation

2. The main requirements of a preliminary investigation are to:-
    i) Identify any past or present potentially contaminating activities;
    ii) Review available historic records (i.e. including Council & NSW Government Department Records);
    iii) Conduct a preliminary visual inspection;
    iv) Provide a preliminary assessment of any site contamination; and
    v) Provide the basis for a more detailed investigation if required.

For an indicative list of industries and potential contaminants please refer to SEPP No. 55 Remediation of Land and the Planning Guidelines “Managing Contaminated Land”

4.3.2 Stage 2 – Detailed Investigation

1. A detailed investigation is only necessary where a preliminary investigation indicates that the land is contaminated or the site history confirms that the site is or was exposed to potentially contaminating industry or activities.
2. The requirements of the detailed investigation are:-

i) To define the nature, extent and degree of all contamination (i.e. soil, water and soil vapour);
ii) To assess potential risk posed by contaminants to health and environment; and
iii) To obtain sufficient information for the development of a viable Remedial Action Plan (RAP), if required.

As part of the detailed investigation and assessment of site contamination issues, proponents are required to take into account any relevant technical standards or guideline requirements.

4.3.3 Stage 3 – Remedial Action Plan

1. The Remedial Action Plan (RAP) is based on information from the previous Preliminary Site History and Detailed Investigation stages and shall demonstrate what remediation measures are required to deal with any identified contamination in order to render the site suitable for the proposed development or land use activity. The objectives of the remediation strategy and the recommended site contamination remediation clean-up criteria must be clearly stated in the RAP.
2. If development consent is required, then a RAP must be considered by Council, prior to the determination of the Development Application.

4.3.4 Stage 4 – Completion of Remediation Work - Validation Reporting, Site Auditing & Monitoring

1. SEPP 55 requires the submission of a formal Notice of Completion of Remediation Work to Council within 30 days from the date of completion of the remediation works.
2. Upon satisfactory completion of remediation and validation works any ongoing site management requirements (such as Environmental Management Plans) must be registered on the property title (in accordance with the Conveyancing Act 1919).
3. Refer to the SEPP for more information.

5 PROCEDURES FOR DEVELOPMENT APPLICATIONS & COMPLYING DEVELOPMENT CERTIFICATE APPLICATIONS

1. Were land is contaminated or has the potential for contamination Council requires the following:

a) A preliminary investigation report in accordance with the requirements of this policy and relevant legislation;

b) a Detailed Site Contamination Investigation Report is required where the preliminary investigation report reveals that the site is or was previously used by a potentially contaminating land use or soil and / or groundwater analysis reveals elevated contaminants above threshold levels;

c) Council may, as a matter of due diligence, request a Site Audit Statement to be provided from an accredited Site Auditor, in order to certify that the site is suitable for its intended use even if the Preliminary Investigation confirms that the site has no issues and the visual assessment of the site reveals no evidence of any contamination;

d) Where the Detailed Site Contamination Investigation Report indicates that the site is subject to soil strata, soil vapour and / or groundwater table contamination above threshold limits, a Remedial Action Plan will be required;

e) Contaminated land consultants who prepare preliminary investigation, detailed investigation, RAP's and validation reports must be accredited via one of the following:

- the Site Contamination Practitioners Australia (SCPA) scheme;
- the Environment Institute of Australia and New Zealand's (EIANZ) Contaminated Land Assessment Specialist Certified Environmental Practitioner (CLA Specialist CEnvP) scheme; or
- the Soil Science Australia (SSA) Certified Professional Soil Scientist Contaminated Site Assessment and Management (CPSS CSAM) certification.

f) Council will not continue the assessment until satisfied with the information in the detailed report or RAP.

Council may grant a conditional Development Consent with conditions of consent relating to the preparation of a Remedial Action Plan (prior to the issuing of the Construction Certificate), completion of the remediation works (during the construction phase) and the completion of a

validation report and 'signing' off' of the remediation work by the Site Auditor through a Site Audit Statement at prior to the occupation of the building or commencement of the land use stage.

Alternatively, Council may grant a "Deferred Commencement" Consent pursuant to Section 80(3) of the Environmental Planning and Assessment Act 1979, particularly where the level of contamination is in the opinion of Council significant and / or the proposed land use is a sensitive land use with respect to potential contamination impacts. The "Deferred Commencement" Consent will require the completion of a range of "pre-conditions" prior to the consent becoming operative.

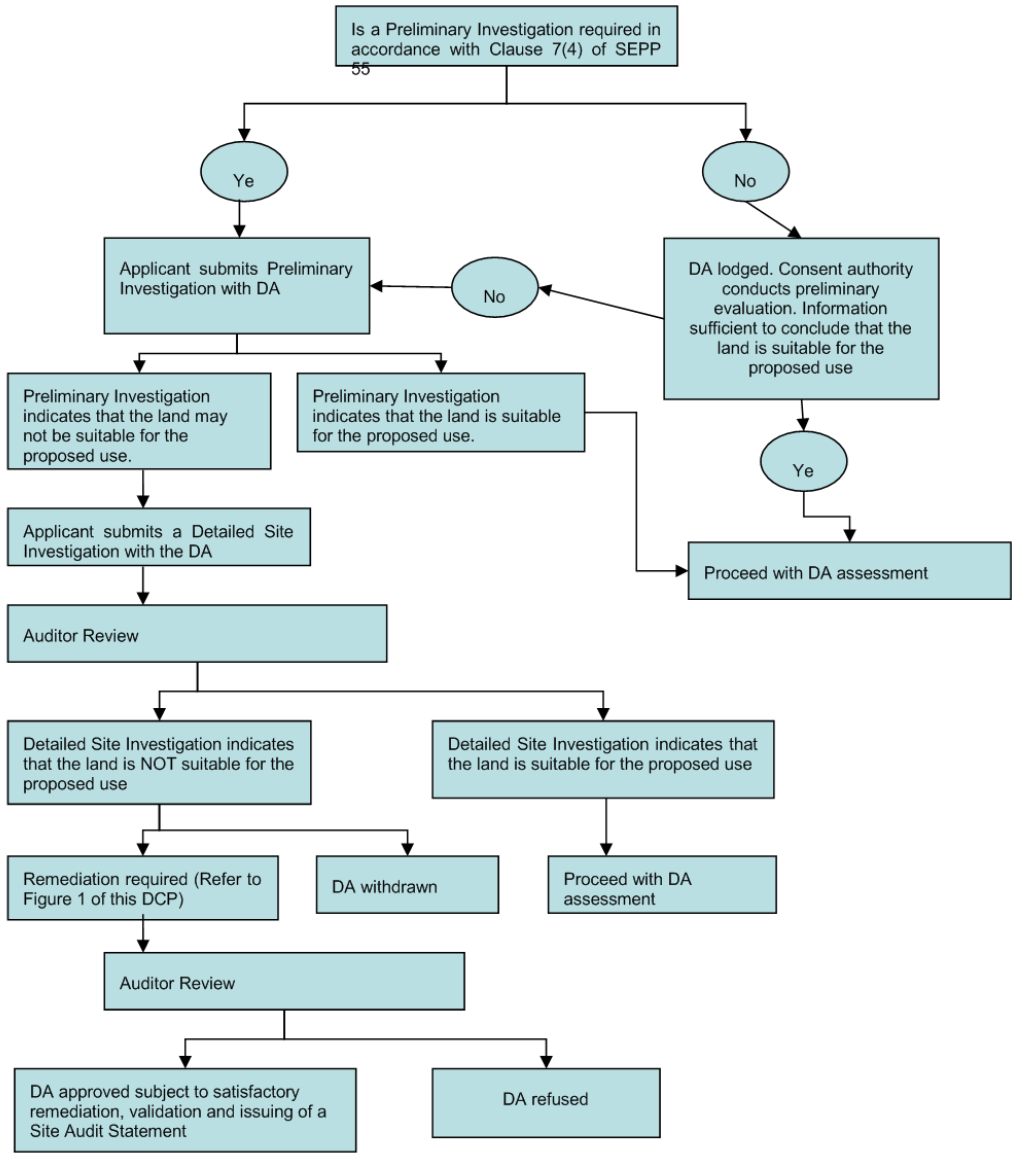
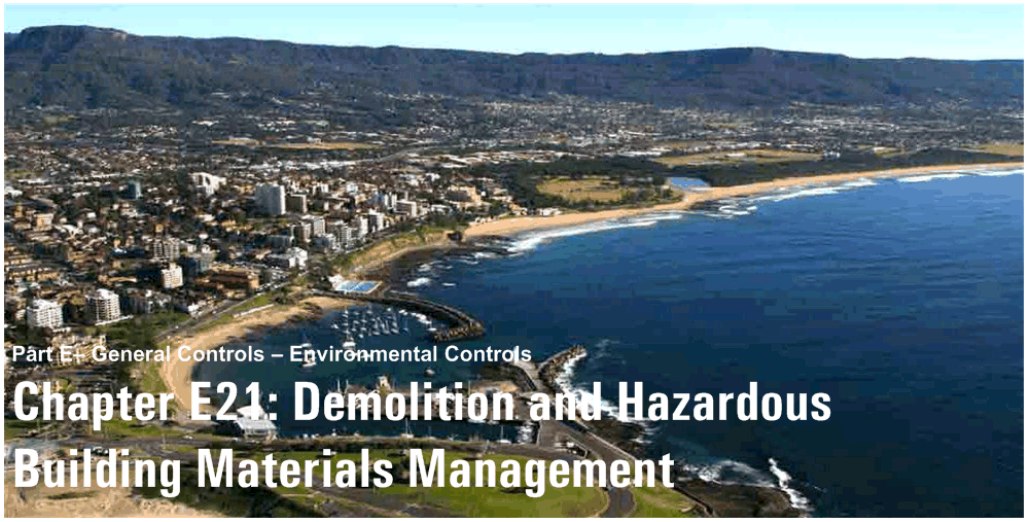


Figure 2: Council procedure for considering land contamination issues for Development Applications



Part E: General Controls – Environmental Controls

Chapter E21: Demolition and Hazardous Building Materials Management

Contents

Document Control

Document ID: Wollongong DCP 2009 – E21 Demolition and Hazardous Building Material Management

Rev No	Adoption Date	In force date	Revision Details
0	15/12/09	1/3/10	Adopted
1	11/12/17		Contaminated Lands Review update

1 INTRODUCTION

1. This Chapter outlines the general submission requirements and controls for the demolition of buildings or structures.

2. The Chapter also provides guidelines to assist in protecting the health and safety of property owners and site workers when carrying out demolition and building works involving hazardous building materials.

2 OBJECTIVES

1. The objectives of this Chapter of the DCP are to:

a) Ensure that demolition is undertaken in a manner that minimises waste generation and adverse amenity impacts.

b) Protect the health and safety of persons involved in or situated in close proximity to demolition works particularly those involving hazardous building materials; and

c) Ensure hazardous building materials are removed in accordance with relevant NSW WorkCover Authority requirements and relevant Australian Standards.

3 DEFINITIONS

"Asbestos" means the fibrous form of those mineral silicates that belong to the serpentine or amphibole groups of rock forming minerals, including actinolite, amosite (brown asbestos), anthophyllite, chrysotile (white asbestos), crocidolite (blue asbestos) and tremolite. (OHS Regulations 2001).

"Asbestos removal work" means any work, in which bonded or friable asbestos material is removed, repaired or disturbed. (OHS Regulation 2001).

"Contaminated Dust" means dusts accumulated in a building structure that are contaminated with substances that are considered hazardous (i.e. lead and other heavy metals, pesticides and asbestos).

"Hazardous Building Materials" means building materials that are considered to cause adverse health impacts such as cancer, neurological issues and mesothelioma. Common hazardous building materials include (but not limited to) asbestos, lead paint, PCBs and contaminated dusts.

"Lead Paint" is described in the Australian Standards (AS 4361.2-1998) as paint or paint films that contain more than 1% lead by weight of the total volume.

"PCBs" means Polychlorinated biphenyls, a group of synthetic, chlorinated organic compounds often found in electrical equipment that pre dates 1975.

4 RELEVANT LEGISLATION

4.1 Environmental Planning and Assessment Act 1979 and Wollongong Local Environmental Plan 2009

1. The demolition of a building or works is considered a form of development, under the *Environmental Planning and Assessment Act 1979*.

2. Under Schedule 2 of *Wollongong Local Environmental Plan 2009* (WLEP 2009), certain minor demolition work may be classified as exempt development where it is in compliance with the following requirements:

(a) Must be demolition of a structure, the erection of which would be exempt development under WLEP 2009.

(b) Activity must be carried out within the property boundary.

(c) Must be demolition of an entire structure, not part of a structure.

(d) Must be carried out in accordance with AS *2601—2001, Demolition of structures* and any relevant WorkCover guidelines.

(e) If a structure is likely to have been treated with pesticides, must avoid contact with the top 10–20mm of soil.

3. Under Schedule 3 of WLEP 2009, the demolition of single storey dwelling houses and outbuildings may be classified as complying development where it is in compliance with the following requirements:

(a) Must be demolition of a building or structure, the demolition of which is necessary to enable the erection of a dwelling house under Schedule 3 of WLEP 2009.

(b) Must not involve the demolition of a building or structure that has more than one storey.

(c) Must be undertaken in accordance with *AS 2601—2001, Demolition of structures.*

4. In order for demolition to qualify as either exempt or complying development it must also comply with clause 3.1 or 3.2 of WLEP 2009. Development consent is required for all other demolition works.

4.2 Workplace Health and Safety Regulation 2011

1. The main legislation regarding the removal and handling of hazardous materials (including asbestos) is the *Workplace Health and Safety Regulation 2011*.

2. Under the above regulation, a licence authorised by the NSW WorkCover Authority is required for all friable asbestos work and bonded asbestos work where the asbestos has a surface area of more than 10 square metres.

4. Under the above regulation, a person undertaking 'lead risk' work must notify WorkCover NSW.

3. The main legislation dealing with the disposal of asbestos material is governed by the *NSW EPA Waste Classification Guidelines (2014)*.

4.3 Protection of the Environment Operations Act 1997

1. Under the above legislation it is an offence to pollute the environment in any way and a pollution event may be considered a punishable offence within the Act.

5 DEMOLITION OF BUILDINGS

1. The demolition of any building or structure (i.e. subject to appropriate consent being issued) must be carried out in accordance with Australian Standard *AS 2601 -2001 – Demolition of Structures.*

5.1 Demolition work plan

1. Any Development Application lodged for the demolition of a building or structure must include a Demolition Work Plan. The Demolition Work Plan shall include the following information:
2. Site location plan showing the building or structure which is proposed to be demolished.
3. The name, address and contact telephone numbers and license number of the demolition contractor and the asbestos removal contractor (i.e. where asbestos material is required to be removed from the building or structure);
4. Details as to the qualifications and experience of the demolition contractor.
5. Details as to the height of the building or structure above ground level and the distance of the building or structure from all boundaries.
6. Details of the type of building including footing, structural steel and concrete components, wall roof information.
7. A detailed list of any hazardous material (including asbestos) that might be within the building and procedures to be utilised for storage, transport and disposal of these hazardous materials.
8. Details of the methods of demolition proposed, including all equipment to be utilised onsite. Information concerning the noise rating of any jackhammers or other mechanical plant shall be submitted, including details of the noise level above the ambient at the property boundary.
9. Proposed method(s) of demolition and proposed removal of any hazardous material including any asbestos material;
10. Written documentation as to the proposed demolition measures being carried out in accordance with Australian Standard *AS 2601 – 2001 – Demolition of Structures*.
11. A time sequence of the demolition, including the staging of the work, hours of operation and in addition the anticipated number of days involved in each component of the work.

    In this regard demolition works shall be generally limited by Council to the following hours:

    a. Monday to Friday: 7am to 5pm
    b. Saturday: 8am to 4pm
    c. Sundays and Public Holidays: No demolition work permitted

12. Details of any hoardings or fences, including overhead protection and scaffolding when necessary. Note: Refer to the provisions contained within the Hoardings Chapter of this DCP.
13. Details of any safety precautions necessary for persons carrying out the demolition or persons living within the vicinity or using facilities within the vicinity.
14. Proposed measures and processes to be implemented to ensure the health and safety of workers and community;
15. Proposed measures to be implemented to minimise any airborne asbestos and dust emissions (subject to compliance with the requirements of the NSW WorkCover Authority); and
16. Proposed methods and location of disposal of any asbestos or other hazardous materials (subject to compliance with the requirements of the NSW WorkCover Authority).

5.2 Other information requirements for demolition works

1. A Site Waste Minimisation and Management Plan (SWMMP) shall also be prepared in accordance with the requirements contained within the Waste Management Chapter in Part E of this DCP, with particular regard to the controls relating specifically to demolition.

2. A Dilapidation Report is also required for any demolition works situated within the zone of influence of any other building or structure. The Dilapidation Report must include photographic evidence of all building or structures within the zone of influence.

3. A Hazardous Building Materials Assessment (HBM) shall be prepared prior to commencement of demolition works. The report must be prepared so to achieve compliance with relevant guidance documentation including (but not limited to), regulations, codes of practice, and Australian standards.

6 HAZAROUS BUILDING MATERIALS MANAGEMENT

6.1 Types of asbestos and health impacts

1. According to relevant Australian Government publications (Safe Work Australia, NSW WorkCover) the main types of asbestos are:

   - Chrysotile (white asbestos);
   - Amosite (brown asbestos); and
   - Crocidolite (blue asbestos).

2. These types of asbestos are considered to range from hazardous to highly hazardous, especially where they are in a poor or deteriorated condition or disturbed during activities that produce dust containing asbestos fibres.

3. Chrysotile (white asbestos) is the only form of asbestos that was commercially used from the serpentine group of silicates. Chrysotile was previously used in the manufacture of:

   - Asbestos cloth, tapes, ropes and gaskets for packing and in thermal and chemical insulation;
   - Asbestos cement sheets and pipes for construction, casing for water and electrical / telecommunication services;
   - Fire rated doors, equipment and structural beams of buildings;
   - Rubber, plastics, thermosetting resins, adhesives, paints, coatings, caulking compounds and sealants for thermal, electrical and insulation applications;
   - Filters; and
   - Packing and friction material such as gaskets, brake and clutch linings.

4. Amosite (brown asbestos) and crocidolite (blue asbestos) were used in a range of products until the mid 1980's. These products were mainly:

   - Asbestos cement sheets and pipes for construction, casing for water and electrical / telecommunication services; and
   - Thermal and chemical insulation i.e. fire rated doors, limpet spray, lagging and gaskets.

5. **Non-friable asbestos** means material containing asbestos that is not friable asbestos, including material containing asbestos fibres reinforced with a bonding compound (Safe Work Australia: How to Safely Remove Asbestos 2011).

6. **Friable asbestos** means material that is in a powder form or that can be crumbled, pulverised or reduced to a powder by hand pressure when dry, and contains asbestos (Safe Work Australia: How to Safely Remove Asbestos 2011).

Figure 1: Bonded Asbestos (Fibro)

Figure 2: Bonded Asbestos Tiles

Figure 3: Friable Asbestos – Pipe Lagging

Source: NSW WorkCover Authority (2008) *Working with Asbestos Guide 2008*

7. Asbestos fibres are made up of many very fine fibres so that as asbestos is further processed or disturbed, the airborne fibres become progressively finer and more hazardous. The most dangerous fibres are the smallest ones which are invisible to the naked eye, but which penetrate the deepest part of the lungs.

8. Breathing in the fibres of asbestos can bring the risk of asbestosis, lung cancer and mesothelioma. However, asbestos related diseases have a long delay or lag period in the order of 20 – 40 years between first exposure and the onset of symptoms and / or detection of the disease.

9. **Asbestosis** is the scarring of lung tissue that can result from the inhalation over a period of years of substantial amounts of asbestos. This results in breathlessness which may lead to disability and in some cases early death.

10. **Lung cancer** is related to the amount of fibre that is breathed in and the risk of lung cancer is greatly increased in those who also smoke tobacco.

11. **Mesothelioma** is a cancer of the pleura (outer lung lining) or of the peritoneum (the lining of the abdominal cavity). The risk of mesothelioma is less with chrysotile (white asbestos) than with other types of asbestos. Both pleural and peritoneal mesothelioma can result from exposure to amosite (brown asbestos) and crocidolite (blue asbestos).

6.2 Procedures for handling asbestos material

1. Handling, management and disposal of asbestos shall comply with NSW WorkCover and NSW EPA requirements. The NSW WorkCover Authority's (prepared by Safe Work Australia): *How to Safely Remove Asbestos, Code of Practice* (2011) recommends a range of work procedures for dealing with bonded asbestos material including asbestos cement. Further advice can be obtained from the enHealth Publication: *Asbestos, A guide for householders and the general public* (2013)

2. As at 1 January 2008, individuals are limited to handling a maximum area of 10 square metres of bonded asbestos material. Otherwise an appropriately licensed person must carry out the removal and disposal of the bonded asbestos material.

6.3 Lead Work

1. All lead removal works must comply with the relevant Workplace Health and safety regulations. In the event that works are not carried out by an appropriately licensed and insured contractor council recommends that DIY renovators review available resources regarding safe and acceptable removal processes.

7 REFERENCES

NSW WorkCover Authority. 2008.. *Working with Asbestos Guide 2008*

NSW WorkCover Authority's (prepared by Safe Work Australia): *How to Safely Remove Asbestos, Code of Practice* (2011)

enHealth Publication: *Asbestos, A guide for householders and the general public* (2013)

Workplace Health and Safety Regulation 2011.

NSW EPA Waste Classification Guidelines (2014).

AS 2601—2001, Demolition of structures

Wollongong City Council: *Asbestos Policy (October 2014)*

Contents

Figures

Document Control

Document ID: Wollongong DCP 2009 – E22 Soil Erosion and Sediment Control

Rev No	Adoption Date	In force date	Revision Details
0	15/12/09	1/3/10	Adopted
1	11/12/17		Contaminated Lands Review update

1 INTRODUCTION

1. The purpose of this Chapter of the DCP is to provide Council's minimum requirements for the implementation of Erosion and Sediment Control (ESC) measures on demolition and construction sites.

2 OBJECTIVES

1. The main objectives of this part of the DCP are to:

a) Minimise the amount of sediment and contaminated water which leaves sites whilst improving environmental outcomes throughout construction (i.e. improved surface water quality);

b) Minimise the disturbance of sites during land use development activities and preserve, wherever possible, existing vegetation on development sites from either damage or removal as a result of the construction works; and

c) Encourage prompt rehabilitation of construction sites by appropriate revegetation strategies.

3 INFORMATION REQUIREMENTS

1. A Development Application shall be accompanied by:

   (a) Basic Erosion Sediment Control Plan for disturbance areas less than 1000m^2.

   (b) Erosion Sediment Control Plan for (i) disturbances between 1000m^2 and 2500m^2, or (ii) for developments adjacent to 'Environmentally Sensitive Receptors' or (iii) within 50m of a watercourse or 100m of Lake Illawarra and Bellambi Lagoon or (iv) where impacts on adjacent water courses are likely.

   (c) Soil and Water Management Plan for disturbances greater than 2500m^2.

   (d) All development applications in the drinking water catchment must include a water cycle management study (WCMS) to help council and WaterNSW assess whether the development will have a neutral or beneficial effect on water quality (refer to http://www.waternsw.com.au/water-quality/catchment/development).

2. An Erosion and Sediment Control Plan or Soil and Water Management Plan should include the following information (compliance with the "blue book" for each document type is considered a minimum requirement):

   (a) A Basic Erosion Sediment Control Plan shall include a suitably detailed graphical representation of the site (with a scale of at least 1:200) that identifies all the pertinent matters pertaining to the management of ESC

   (b) An Erosion Sediment Control Plan must consist of relevant site drawings, plans (including ESC infrastructure) and supporting documentation as to how specific control measures will mitigate relevant ESC issues.

   (c) A Soil and Water Management Plan covers all site soil and water management issues where by ESC is one part of the overall management requirements. These plans include engineered solutions based on detailed numerical assessment of the probable site behaviour during construction.

3. It shall be prepared in accordance with the controls specified in this DCP. An example of a Basic Erosion and Sediment Control Plan is contained in Appendix 1.

4. All plans shall be prepared in accordance with the NSW Landcom publication titled *Managing Urban Stormwater: Soils and Construction Vol. 1 4th ed. March 2004* (Blue Book) or the latest version of this publication. Where there is an inconsistency between the Blue Book and the control measures specified in this DCP, the Blue Book shall prevail to the extent of the

inconsistency. All plans and there application must be periodically reviewed as works progress and updated or altered as required.

4 CONTROL MEASURES

4.1 Site Preparation

1. Sediment and erosion control measures are to be implemented prior to the commencement of any construction works.
2. Where vegetation exits on the site, buffer zones of vegetation should be retained along the boundaries of the site, particularly those adjacent to creeks and street gutters.

4.2 Erosion Control Measures

A range of erosion control measures may be used on building or subdivision sites to address potential soil erosion problems, including:

1. Temporary waterway crossings;
2. Temporary channels / drains and inlet / outlet works, in order to divert water from cut or fill slopes and to intercept off-site run-on water and spring water, especially in areas with moderate or high hazards of land instability;
3. Temporary contour banks or cellular confinement systems, to minimise sheet erosion problems;
4. Rock check dams or other alternative channel linings, to help reduce the erosive energy levels of concentrated water in constructed stormwater drainage channels;
5. Temporary water diversion structures such as earth banks (low flows or high flows);
6. Energy dissipators and outlet protection measures, in order to reduce water velocities to minimise soil erosion problems around drains and outlets; and
7. Sub-sub soil drainage measures, in order to provide controlled water flows through the soil strata.

4.3 Sediment Control Measures

1. Sediment fences should be constructed parallel to the contours of the site with appropriate checks in place to avoid creating concentrated flows.
2. A 150mm deep trench should be cut along the upslope line of the fence for the bottom of the geo-textile fabric of the sediment fence to be entrenched. Onsite mulch or other alternative materials may be used in preference to silt fencing if ESC outcomes can be maintained.
3. The 1.5 metre long (40mm square) hardwood star pickets for the sediment fence shall be driven into the ground at 2.5 metre intervals (maximum) at the downslope edge of the trench. The star pickets should be fitted with safety caps.
4. The self-supporting geo-textile fabric shall be affixed to the upslope side of the star pickets and placed within the toe of the trench. Only geo-textile fabric designed for the use of sediment fencing shall be used. The use of shade cloth for the purposes of sediment control fencing is not satisfactory.
5. The geo-textile fabric should be affixed to the star pickets by stapling or the use of wire ties. Wire tied sediment fences may be readily unhooked from their support posts during construction hours to allow the delivery of raw materials.

   Figure 1 in Appendix 2 shows the general construction requirements for sediment fences.

   Figure 2 in Appendix 2 shows the general construction requirements for straw bale filters.
6. Mesh and gravel inlet filter sediment traps are required to be provided in front of any stormwater drainage gutter inlet pits, in order to prevent coarse sediment entering the inlet pit.

7. Figures 3 and 4 in Appendix 2 give examples of acceptable inlet filter sediment traps.
8. The retention or planting of vegetated filter strips downslope of a construction site may help to trap coarse sediment which has escaped from a damaged section of a sediment barrier fence, especially during the majority of storm events.
9. Dense native grasses which reach a height of 150mm provide the best uniform dense groundcover for vegetated filter strips.
10. The installation of a minimum 400mm wide vegetated grass strip along the kerb line is recommended as the last sediment trap for coarse sediment together with geo-textile sediment barrier fences.
11. All ESC infrastructures must be maintained in good working order. The appropriateness and success of any plans must be revised if control measures become inefficient.
12. Water should not remain pooled within the site at any time. Water pooling (after periods of rain) is indicative of poor drainage or over capacity ESC infrastructure.

4.4 Wash-out Areas

A designated wash out area shall be set aside for waste water generating activities such as tile cutting and washing down concreting, paint and other trade equipment. This area shall be:

1. Located away from drainage lines and the street gutter.
2. All run off from the waste area shall be intercepted by a sediment fence, straw hay bales or another suitable filter device to prevent stormwater pollution.
3. Where possible, the wash out area shall be located on a grassed area or be surrounded by a vegetation buffer zone.
4. Under no circumstances is sediment and chemically contaminated water (i.e. pollution) allowed to leave the site at any time.

4.5 Stabilised Entry / Exit Points

The main vehicular access point should be constructed with a 150-200mm deep pad of 40mm – 75mm crushed rock or recycled concrete. The access point should be at least 7 metres wide and 5 metres long.

4.6 Air Pollution

Stockpiles of sand and soil shall be located in a sheltered position where possible and covered or watered to prevent material from being blown off the site.

4.7 Early Roof Water Connection

Temporary or permanent downpipes shall be installed prior to frame inspection.

4.8 Position of Stockpiles

Loads of building materials shall be deposited entirely within the allotment boundaries and located to control runoff into a drain, gutter or watercourse. They may also be situated within closed compounds.

4.9 Revegetation

Sites shall be stabilised / revegetated as soon as possible to prevent soil erosion. Excavated top soil should be reused as it generally contains nutrients, seeds and rootstock. Planting low maintenance native species will minimise the water, fertilizers and maintenance required for long term survival. Erosion and sediment control infrastructure must not be removed until suitable stabilisation has occurred.

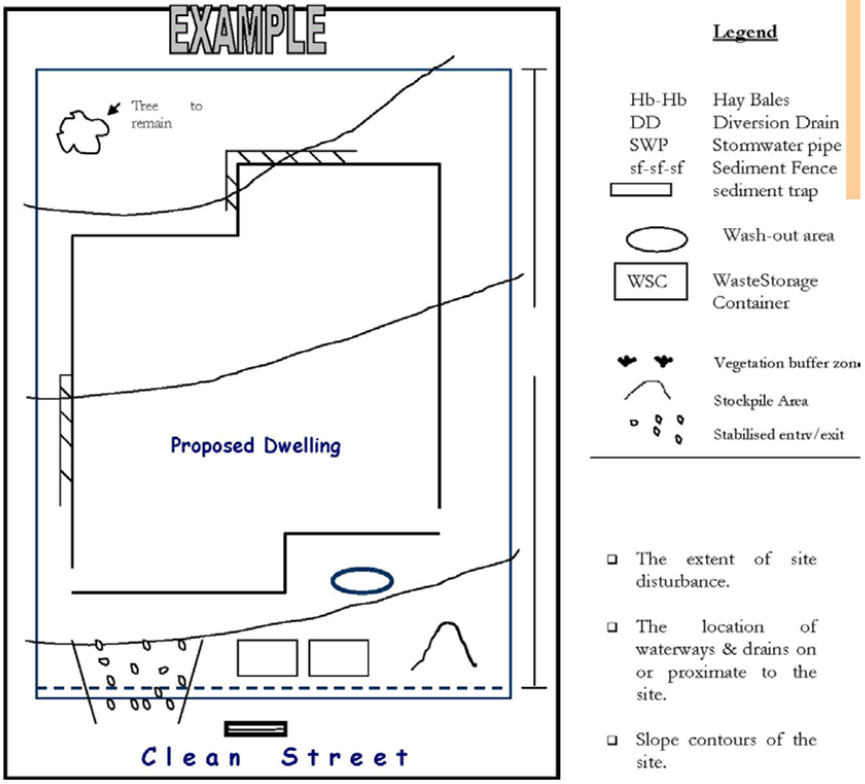
5 INSPECTION AND MAINTENANCE

Erosion and sediment control measures must be inspected:

1. By Council as spot inspections prior to commencement of any construction works;
2. Daily (i.e. when work is occurring on the site) or weekly (i.e. when work is not occurring on the site); and
3. Immediately after a rainfall event, in order to ensure such measures are maintained in a functional condition and any sediment is removed from the structure.

All erosion and sediment control measures shall be maintained in a satisfactory condition throughout the entire construction period up until such time as a final occupation certificate for a development project or a subdivision certificate for a subdivision has been issued.

Failure to control and appropriately maintain ESC infrastructure in a working order may result in sediment or contaminated surface water leaving a site. In accordance with relevant state legislation these actions are considered a pollution offence and are punishable under relevant environmental legislation.



Additional Details: Split level design to minimise cut and fill. Vegetation retained at rear of site to hold soil in place, and at front of site to trap sediment.

Appendix: 2

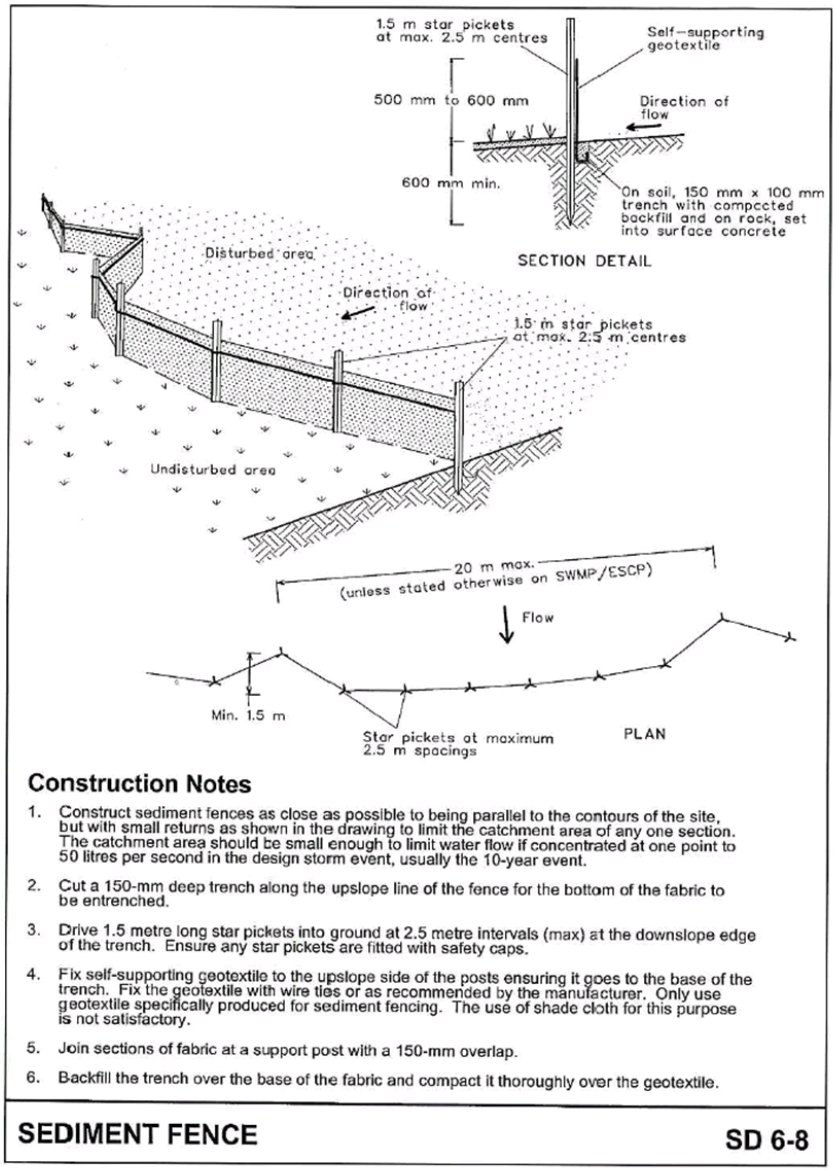


Figure 1: Sediment fencing

SOURCE: NSW Landcom. *Managing Urban Stormwater: Soils and Construction Volume 1 March 2004.*

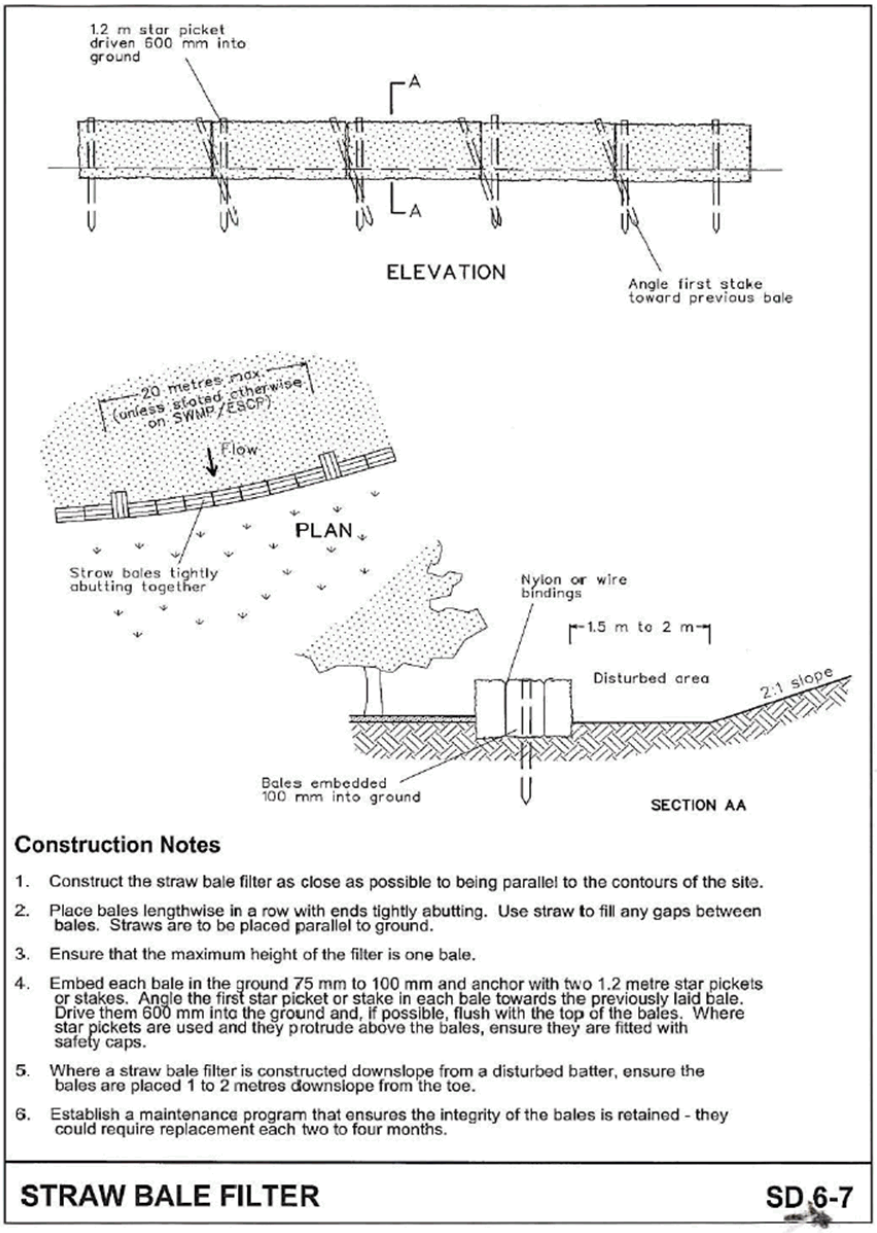


Figure 2: Straw bale filter

SOURCE: NSW Landcom. *Managing Urban Stormwater: Soils and Construction Volume 1 March 2004.*

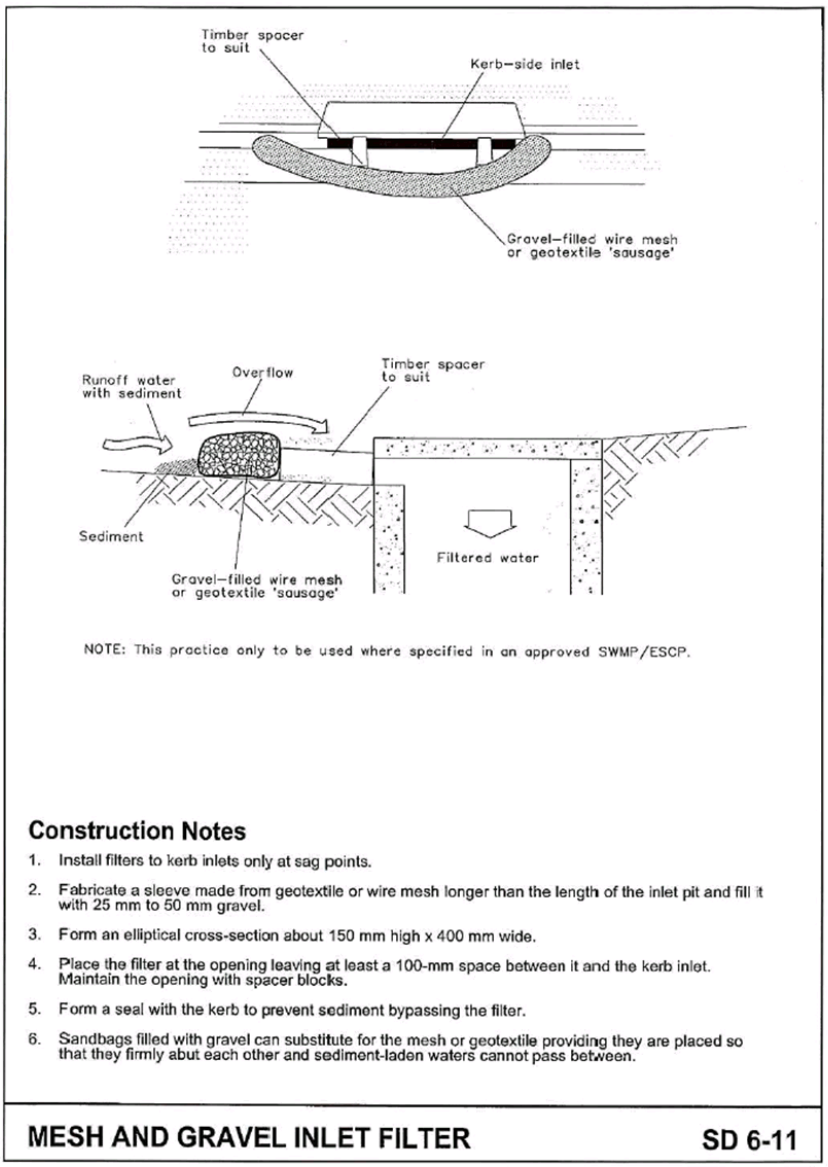


Figure 3: Mesh and gravel inlet filter

SOURCE: NSW Landcom. *Managing Urban Stormwater: Soils and Construction Volume 1 March 2004.*

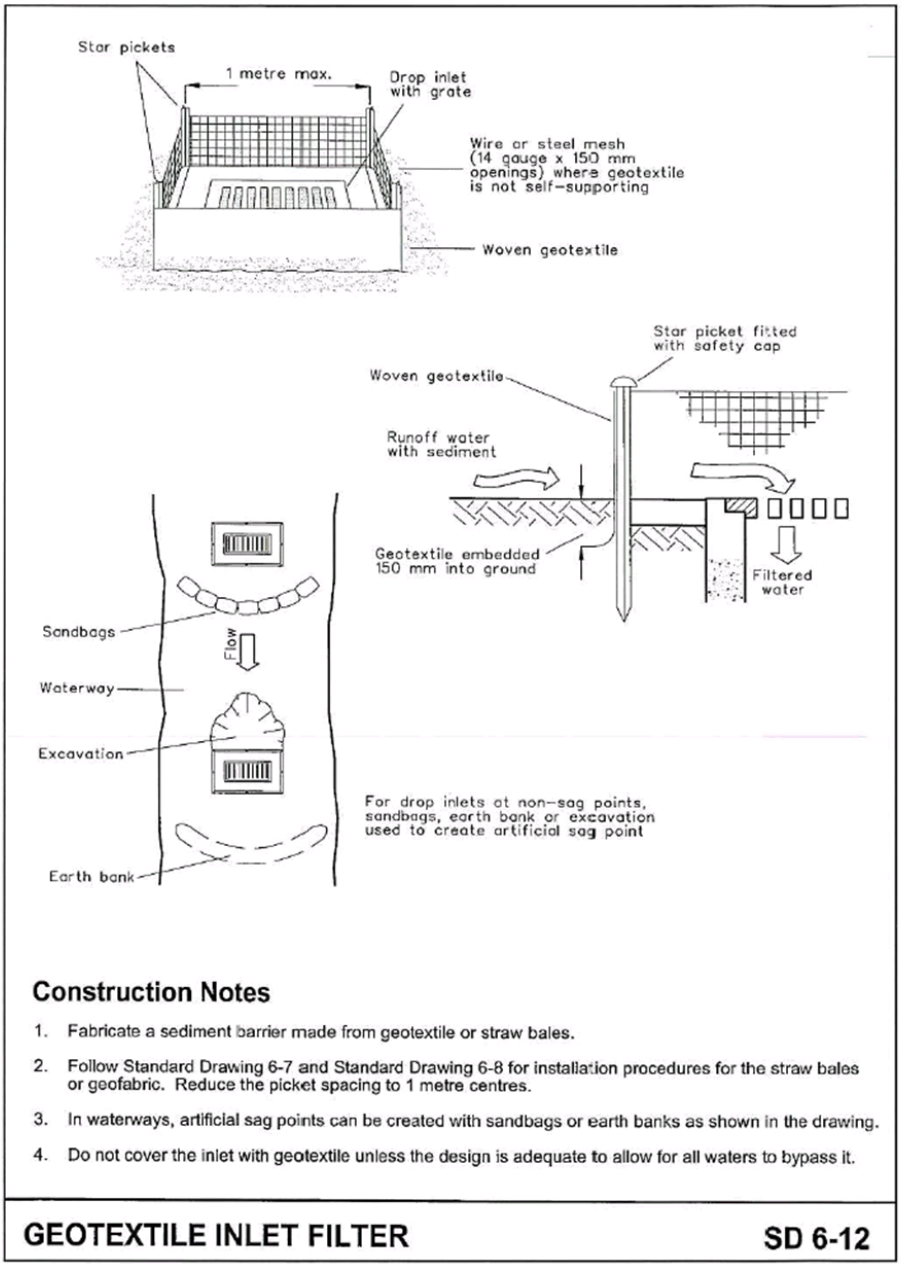


Figure 4: Geotextile inlet filter

SOURCE: NSW Landcom. *Managing Urban Stormwater: Soils and Construction Volume 1 March 2004.*