



Sydney Catholic School Austral St Anthony of Padua

Stage 1

Construction & Demolition Waste Management Plan

Prepared by Foresight Environmental
e. info@foresightenvironmental.com
w. www.foresightenvironmental.com

This report is based on information provided by Pepper Group Limited coupled with Foresight Environmental's knowledge of waste generated within the residential sector. To that extent this report relies on the accuracy of the information provided to the consultant. It has been compiled by Foresight Environmental on behalf of Pepper Group Limited.

This report is not a substitute for legal advice on the relevant environmental related legislation, which applies to businesses, contractors or other bodies. Accordingly, Foresight Environmental will not be liable for any loss or damage that may arise out of this project, other than loss or damage caused as a direct result of Foresight Environmental negligence.

Revision No.	Issue date	Author	Reviewed by	Reason/comments
1	7 August 2018	Kyle Renwick	Scott Ebsary	Draft issue for review
2	28 th August 2018	Kyle Renwick	Scott Ebsary	Update per feedback

Table of Contents

1. INTRODUCTION	4
2. OVERVIEW OF DEVELOPMENT	4
3. WASTE GENERATION ESTIMATE	5
3.1 DEMOLITION	5
3.2 CONSTRUCTION	7
4. WASTE MANAGEMENT STRATEGY	8
4.1 AVOID AND REDUCE	8
4.2 REUSE	9
4.3 RECYCLING	9
4.4 DISPOSAL	9
5. WASTE MANAGEMENT SYSTEMS	10
5.1 ONSITE AND OFFSITE SYSTEMS	10
5.1.1. DEMOLITION	10
5.1.2. CONSTRUCTION	11
5.2 WASTE STORAGE AND COLLECTION	12
5.3 SITE WASTE CONTROL AND MANAGEMENT	12
5.4 HAZARDOUS WASTES	12
5.5 CONTRACTS AND PURCHASING	14
5.6 TRAINING AND EDUCATION	15
6. WASTE FACILITIES	16
6.1 BINGO RECYCLING CENTRE AUBURN	16
6.2 WASTE TRANSFER STATIONS PTY LTD	16
6.3 SITA – EASTERN CREEK RESOURCE RECOVERY PARK	16

1. Introduction

This Construction and Demolition Waste Management Plan has been prepared by Foresight Environmental on behalf of Sydney Catholic School Austral (the 'Applicant'). The plan details the way in which the proposed development – Stage 1 at Sydney Catholic School Austral, St Anthony of Padua will manage the waste and recycling generated during the demolition and construction phases of stage 1 of the development.

2. Overview of Development

St Anthony of Padua Catholic School (STAPCS), Austral was established in 2017 based on a preliminary masterplan developed in collaboration with Sydney Catholic Schools and their key stakeholders for an integrated P-12 school to deliver learning around contemporary learning models. This Masterplan informed the preparation of a Development Application to Liverpool City Council in 2016.

Following the commencement of the school, the consultant team worked with Sydney Catholic Schools to develop and refine the Masterplan and Stage 1 project to allow for submission as a State Significant Development to be assessed by the NSW Department of Planning and Environment. This Masterplan and this application has been prepared for the growth and development of the existing school to create a four stream Primary School; eight stream Secondary School, and provide integrated Preschool and child care services. The school is to be developed to provide learning opportunities from early childhood education through to Year 12, and beyond, with the curriculum and learning environments created to provide opportunities for integration with the surrounding community.

Located within the Austral and Leppington North Growth Centre, the STAPCS will provide an important amenity for residents of the area - that is targeted to include the development of up 17,350 new dwellings - consistent with the planning frameworks prepared by NSW Planning and Environment. The Masterplan has been developed with a community minded focus, with the school as a key amenity to support the development of the Austral community within the Austral and North Leppington Growth Centre.

3. Waste Generation Estimate

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

- To maximize the reuse and recycling of demolition and construction materials
- To reduce the volume of materials going to landfill
- To maximise waste material avoidance and reuse on site
- To ensure that where practicable, an efficient recycling procedure is applied to waste materials
- To ensure efficient storage and collection of waste

3.1 Demolition

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

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

Based on the cost plan provided to Pepper Group Limited, it is estimated that approximately **1,688.92m³** of waste will be generated during the demolition/excavation phase of the development. The following table details the estimated composition by area or volume of demolition waste to be generated.

Table 1 - Composition of demolition waste by volume

Material	M ³
Metal	531.00
Concrete	435.80
Vegetation	420.75
Bricks	104.80
Mixed Residual Waste	87.89
Asphalt	87.00
Tiles	21.68
Total	1,688.92

3.2 Construction

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

Table 2 below details the estimated composition by area or volume of construction waste to be generated.

Table 2 - Composition of construction waste by volume

Material	M ³
Fill	48,278.50
Vegetation	77.62
General residual	72.00
Concrete	26.20
Asphalt	10.16
Carpet	7.64
Plasterboard	5.94
Brick	4.83
Metal	2.33
Tiling	1.64
Glazing	1.10
Paint	0.34
Timber	0.12
Total	48,488.43

4. Waste Management Strategy

Consideration of waste management during all phases of the development will provide the best opportunity to minimise the volume of waste generated throughout the projects lifetime. Whilst recycling and reuse of materials are important aspects of waste management, waste minimisation techniques incorporated into construction and demolition can prevent materials from being brought onto the site that will eventually become waste. The following waste hierarchy will be used as a guiding principle:



The construction and demolition team will implement this Waste Management Plan, incorporating the following best practice management techniques as a minimum:

4.1 Avoid and Reduce

Minimise the production of waste materials in the construction process by

Assessing and taking into consideration the resultant waste from different design and construction options

Purchasing materials that will result in less waste, which have minimal packaging, are pre-cut or fabricated.

Where possible, arrange for packaging to be removed by the delivery company

Not over ordering products and materials

Ordering materials cut to size to reduce waste material onsite

4.2 Reuse

Ensure that where ever possible, materials are reused either on site or offsite

- Identify all waste products that can be reused
- Any demolition and excavation materials should be salvaged and retained onsite for re-use where possible
- Put systems in place to separate and store reusable items
- Identify the potential applications for reuse both onsite and offsite and facilitate reuse

4.3 Recycling

Identify all recyclable waste products to be produced on site

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

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

4.4 Disposal

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

- Ensure the chosen waste disposal contractor complies with OEH requirements
- Implement regular collection of bins
- Maintain records of both recycled and general waste volumes being transferred offsite or reused onsite.
- The only materials to be sent to landfill are those that cannot be recycled due to contamination, legal requirements or lack of facilities to enable recycling.

5. Waste Management Systems

5.1 Onsite and Offsite Systems

Onsite separation of the various waste streams is encouraged to lower recycling costs so to avoid additional fees for sorting at appropriate facilities. However, it is highly unlikely that each stream will be separated and thus will need to be processed offsite for recycling. Those streams that may be hard to individually separate will be treated as “residual mixed waste”.

5.1.1. Demolition

Table 3 – Waste management systems (demolition)

Material	Estimated volume (m ³)	Onsite (re-use or recycle)	Offsite (recycling contractor)
Metal	531.00		Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling
Concrete	435.80	Crushed for road base where possible	Removed from site as required for recycling/reuse at C&D facility for processing.
Vegetation	420.75	Mulched and reused onsite where possible (landscaping)	Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes
Bricks	104.80	Clean fill	Separated onsite then transported to brick recycling facility
Residual Mixed Waste	87.89		Collected by contractor to be sorted and re-processed into recycled products where possible
Asphalt	87.00		Removed from site as required for recycling/reuse at C&D facility for processing.
Tiles	21.68		Stockpiled and collected as required by specialty metal recycling contractor for recycling/resale

5.1.2. Construction

Table 4 details the expected waste materials and management systems for the construction phase of the project.

Table 4 – Waste management systems (construction)

Material	Estimated volume (m ² or m ³ where indicated)	Onsite (re-use or recycle)	Offsite (recycling contractor)
Fill + contaminated fill*	It is expected that the overall fill and excavation is to cancel each other out leaving zero excess for the site.	Suitable soil to be reused or remediated (capped) where appropriate for onsite landscaping/fill	All surplus fill will be taken offsite to suitable C&D facility for processing/reuse
Residual Mixed Waste	95.95		Collected by contractor to be sorted and re-processed into recycled products where possible
Vegetation	77.62	Mulched and reused onsite where possible (landscaping)	Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes
Concrete	26.20	Crushed for road base	Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.
Asphalt	10.16		Removed from site as required for recycling/reuse at C&D facility for processing.

*refer to the Remediation Action Plan and section 5.4 of this report for specific details about contaminated fill.

Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities¹. The figures in Table 3 and 4 above are estimates and are used as a guide for designing the waste management systems on site. These figures will be adjusted according to the final building material selection and quantities. The waste management systems will be adjusted as necessary.

It should be noted that there are multiple offsite recycling/disposal facilities available for the appropriate processing of the materials detailed above and the facility choice will depend largely on the waste contractor/supplier engaged. See section 6.

¹ McGregor Environmental Services (2000) Predicting C&D waste quantities in the Inner Sydney Waste Board Waste Planning Guide for Development Applications-Planning for Less Waste (1998) NSW Waste Boards
7th August 2018

5.2 Waste Storage and Collection

A designated waste storage area will be established for the collection of all waste and recyclables. The waste storage area shall have appropriate signage to clearly identify the area to construction workers and to prevent unauthorised access to the area.

Stockpile size should be minimised by regular removal of waste from site and construction staging plans must allow for the waste storage area to move within the site as the development progresses.

The construction waste storage area does not have to be enclosed. However, containers should be covered where possible to prevent transmission of dust and fine particles, odour, wind impacts, vermin and vandalism or theft. Containers will be stored on a hardstand area with appropriate sediment control measures implemented to mitigate run-off into stormwater. Any spillages in the waste storage area should be treated immediately using a spill kit. Contaminated or hazardous wastes should be stored in a secure area with appropriate signage.

5.3 Site waste control and management

To ensure adequate site environmental standards are maintained, is recommended that the following controls be implemented and enforced by the proponent:

1. All waste generated during the project is assessed, classified and managed in accordance with the “Waste Classification Guidelines Part 1: Classifying Waste” (DECCW, December 2009)
2. The body of any vehicle or trailer, used to transport waste or excavation spoil from the premises, is covered before leaving the premises to prevent any spill or escape of any dust, waste or spoil from the vehicle or trailer
3. Mud, splatter, dust and other material likely to fall from or be cast off the wheels, underside or body of any vehicle, trailer or motorized plant leaving the site, is removed before the vehicle, trailer or motorized plant leaves the premises.

5.4 Hazardous Wastes

During any demolition and material recovery activities, contractors should beware of potentially hazardous materials. A detailed Remediation Action Plan has been prepared by Alliance Geotechnical for this project – this waste management plan defers to the RAP report for the specific provisions and protocols pertaining to the management, remediation and removal of any potentially hazardous wastes (i.e. asbestos, lead paint etc) that may be found onsite.

Hazardous construction materials should be disposed of in accordance with EPA guidelines in order to protect the environment and personnel. In order to avoid risk to the environment and any breach of legislation this development endeavours to uphold the following practices:

- Early identification and reporting of hazardous waste

- Reporting of any suspicious activities of involved stakeholders (waste generator, transporter or receiver) to including handling waste unlawfully or illegally dumping waste through the Environment Line on 131 555.
- Ensure waste is transported to a place that can lawfully accept it under Section 143 of the Protection of the Environment Operations Act 1997.
- Take all reasonable precautions and exercise due diligence at all times to prevent/minimise commission of any offence.
- Keep accurate written records such as:
 - who transported the waste (company name, ABN, vehicle registration and driver details, date and time of transport, description of waste)
 - copies of waste dockets/receipts from the waste facility (date and time of delivery, name and address of the facility, its ABN, contact person).

5.5 Contracts and Purchasing

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

The Head Contractor will ensure each subcontractor:

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

The Site Manager will be responsible for:

- Ensuring there is a secure location for on-site storage of materials to be reused on site, and for separated materials for recycling off site.
- Ensuring all skips/bins/stockpiles are clearly labelled identifying which material is suitable for each receptacle
- Engaging appropriate waste and recycling contractors to remove waste and recycling materials from the site
- Co-coordinating between subcontractors, to maximise on site reuse of materials
- Monitoring of bins on a regular basis by site supervisors to detect any contamination or leakage
- Ensuring the site has clear signs directing staff to the appropriate location for recycling and stockpiling station/s. And that each bin/skip/stockpile is clearly sign posted
- Providing training to all site employees and subcontractors in regards to the WMP as detailed in section 5.6 below.
- Should a subcontractor cause a bin to be significantly contaminated, the Site Manager will be advised by a non-conformance report procedure. The offending subcontractor will then be required to take corrective action, at their own cost. The non-conformance process would be managed by the Head Contractors' Quality Management Systems
- Retaining demolition and construction waste dockets to confirm and verify which facility received the material for recycling or disposal.

5.6 Training and Education

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

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

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

6. Waste Facilities

The following waste recycling facilities provide disposal options within reasonable distance to the project. It is the responsibility of the site manager to ensure that the chosen facilities can accept the material being sent to it.

6.1 BINGO Recycling Centre Auburn

Contact	Materials Accepted
3-5 Duck St Auburn NSW 2144 https://www.bingoindustries.com.au/recycling-centres/nsw/auburn/	<ul style="list-style-type: none"> • Solid Fill – Soil • Iron & Steel and Other Metals • Plasterboard • Bricks

6.2 Waste Transfer Stations Pty Ltd

Contact	Materials Accepted
33-39 Riverside Rd Chipping Norton NSW 2170 http://www.benedictrecycling.com.au/	<ul style="list-style-type: none"> • Solid Fill – Soil • Concrete • Iron & Steel and Other Metals • Bricks

6.3 SITA – Eastern Creek Resource Recovery Park

Contact	Materials Accepted
Wallgrove Road Eastern Creek NSW 2766 http://www.sita.com.au	<ul style="list-style-type: none"> • Concrete • Scrap Metal • Bricks

NB solid fill may not accepted at this facility