FORESIGHT ENVIRONMENTAL

Lindfield Learning Village

100 Eton Road, Lindfield

Stage 2 & 3

Construction Waste Management Plan

Prepared by Foresight Environmental

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This report is based on information provided by The NSW Department of Education c/o Designinc Sydney Pty Ltd coupled with Foresight Environmental's knowledge of waste generated within the education and commercial sectors. 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 Designinc Sydney.

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	26 June 2019	Scott Ebsary	Kyle Renwick	Initial issue for review
2	4 July 2019	Scott Ebsary		Incorporate minor Designinc feedback
3	11 July 2019	Patrick Arnold		Incorporate minor Designinc feedback
4	15 October 2020	Scott Ebsary		Updated to include reference to dust prevention for condition B15

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1. Introduction

Overview

This operational waste management plan has been prepared by Foresight Environmental on behalf of the NSW Department of Education and School Infrastructure NSW (the Applicant). It accompanies a Response to Submissions Report in support of State Significant Development Application (SSD 16_8114) for Lindfield Learning Village (the site).

On 24 October 2018 the Minister for Planning granted partial development consent to SSD 8114 for Phase 1 construction and operation of a new school for 350 students. The remainder of SSD 8114 (as originally proposed) has not yet been granted consent and has been subject to further investigation, assessment and engagement with the relevant agencies (DPE, RFS, OEH, RMS, TfNSW) and Council.

The Response to Submissions and supporting documents seek approval for the remainder of SSD 8114, being:

Contingency stage of construction:

- Use of the approved Phase 1 administration areas (located outside the temporary fire wall) for student occupation (this is contingent on the timing for delivery of Stages 2 and 3 below and may not be required).

Stage 2 of construction:

- Works to accommodate 1,050 students (including the approved 350).
- Repurposing of the Phase 1 area.
- A loop road around the southern portion of the site for emergency vehicles, buses and drop off and pick up vehicles.

Stage 3 of construction:

- Works to accommodate an additional 950 students in the western wing of the building.

The SSD does not seek approval for vegetation management outside the site boundary. Any vegetation management outside the site boundary is the subject of separate approval.

The purpose of this operational waste management plan is to outline the systems and practices involved in managing waste and recycling during the ongoing operation of the School as detailed within the EIS.

Response to Submissions

To date there have been no issues raised by agencies during exhibition of SSD 8114 and subsequent Response to Submissions for Phase 1 for this operational waste management plan.

2. Overview of Development

The proposed stage 2 and 3 development at the former UTS Ku-ring-gai campus consists of extensive internal repurposing works involving the removal of many internal brick and framework walls, removal of asbestos-lined external glazing, removal of carpet and other existing internal surfaces and fixtures.

Construction of the proposed Lindfield Learning Village consists of:

- Shared facilities including drama and music theatres, cafeteria/dining and other specialist learning spaces, including science labs, wood work and metal workshops etc;
- Administration area for the whole school;
- Teaching spaces for the Aurora education;

The following table provide details on the waste estimates and collection protocols for the proposed development during demolition and construction phases.

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

The following waste estimates address the stage 2 and stage 3 works of the proposed Lindfield Learning Village development which consists of the extensive internal demolition and construction of six home bases. The waste quantity estimates and materiality are based on the cost plan provided by DesignInc Sydney.

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.

All waste generated during the project should be assessed, classified and managed in accordance with the "Waste Classification Guidelines Part 1: Classifying Waste (DECCW, December 2009).

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 1 below details the estimated composition by area or volume of construction waste to be generated during the construction works.

Table 1 - Composition of stage 2 & 3 construction waste by volume

Material	M^3
Timber	358
Concrete	319
Plasterboard	227
Glazing	136
Carpet	103
Paint	49
General Residual	45
Recycling residual	45
Total	**1,284**

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 project's 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 demolition team will implement this Site Waste Minimisation and 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 wherever 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

Table 2 details the expected waste materials and management systems for the construction phase of the project.

Table 2 – Waste management systems (construction)

Material	Estimated volume (m^2 or m^3 where indicated)	Onsite (re-use or recycle)	Offsite (recycling contractor)	Disposal (contractor and landfill site)
Timber	358m^3		Separated onsite then returned to supplier for re-use if appropriate or transported timber recycling yard	
Concrete*	319m^3		Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site.	
Plasterboard	227m^3		Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility	
Glazing	136m^3		Stockpiled and collected as required by specialty glass recycler or taken to appropriate C&D facility for separation and recycling	
Carpet	103m^3		Stockpiled and collected as required by carpet supplier for recycling contractor	Unsuitable material will be taken to landfill for disposal
Paint	49L		Clean tins recycled by metal recycler where possible	Residue/wash-off hardened and disposed appropriately
Residual general recyclables	45m^3		Collected by contractor and disposed at appropriate recycling facility	
Residual general waste	45m^3			Collected by contractor and disposed at appropriate landfill

*Concrete waste and concrete rinse water is not to be disposed of on the project site. Un-set concrete waste should be returned in the agitator trucks to the supplier where possible or directed to a dedicated watertight skip to prevent the entry of precipitation. Concrete rinse water should also be captured and directed to a watertight skip to prevent the entry of precipitation – rinse water should then be disposed of at an appropriate water treatment facility.

Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities[1]. The figures in Table 2 above are estimates and are used as a guide for designing the waste management systems on site. These figures will be adjusted according to the final building material selection and quantities. The waste management systems will be adjusted as necessary.

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.

[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

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 or bin numbers 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 if necessary.

The waste storage area does not have to be enclosed. However, bins should be covered where possible to prevent transmission of dust and fine particles, odour, wind impacts, vermin and vandalism or theft. Bins 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.
4. Airborne fibers and dust should be controlled at the site using appropriate measures for the specific application which may include:
    a. Watering – a water tanker can spray water over the affected areas of the site to prevent dust becoming airborne
    b. Mulch and Vegetation – bare or dusty areas can be covered with mulch or seeded if appropriate to retain soil onsite and prevent dust from becoming airborne
    c. Barriers – a sediment barrier or wind fence in appropriate areas can help to limit the effect of wind and soil blow-off from the site.

5.4 Hazardous Wastes

During any demolition and material recovery activities, contractors should beware of potentially hazardous materials. 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 Site Waste Minimisation and 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
- 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 and to ensure 90% of construction waste has been diverted from landfill.

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.