# Meadowbank Education and Employment Precinct Schools Project

# Remediation/Construction Waste Management Plan Report

**SSD 18_9343**

**Prepared by Foresight Environmental**

**For School Infrastructure NSW**

**11th October 2019**

This report is based on information provided by The NSW Department of Education c/o Woods Bagot 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 Woods Bagot.

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 | 2/10/19 | Scott Ebsary | | Draft for review |
| 2 | 8/10/19 | Scott Ebsary | | Updated with minor amendments and confirmed waste facilities |
| 3 | 11/10/19 | Scott Ebsary | | Project name change |

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# 1. Introduction

This construction and remediation waste management plan has been prepared by Foresight Environmental on behalf of the NSW Department of Education (the Applicant). It accompanies an Environmental Impact Statement (EIS) in support of State Significant Development Application (SSD 18_9343) for the new Meadowbank Education and Employment Precinct Schools Project (hereafter referred to as MEEPSP) at 2 Rhodes Street, Meadowbank (the site).

The K-12 MEEPSP will cater for 1,000 primary school students and 1,620 high school students. The proposal seeks consent for:

- A multi-level, multi-purpose, integrated school building with a primary school wing and high school wing. The school building is connected by a centralised library that is embedded into the landscape. The school building contains:
    - Collaborative general and specialist learning hubs, with a combination of enclosed and open spaces;
    - Adaptable classroom home bases;
    - Four storey central library, with primary school library located on ground floor and high school library on levels 1 to 3.
    - Laboratories and workshops;
    - Staff workplaces;
    - Canteens;
    - Indoor gymnasium;
    - Multipurpose communal hall;
    - Outdoor learning, play and recreational areas (both covered and uncovered).
- Associated site landscaping and public domain improvements;
- An on-site car park for 60 parking spaces; and
- Construction of ancillary infrastructure and utilities as required.

The purpose of this waste management plan is to demonstrate how the MEEPSP will implement best practice measures for management of waste during the remediation and construction phase of the development.

# 2. Waste Generation Estimate

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

- To maximise the reuse and recycling of demolition 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 quantities 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.

## 2.1 Remediation Works

Prior to the commencement of the major construction works, site remediation works are to be carried out to address the hazardous materials/contaminated soils identified in the Remediation Action Plan (RAP) prepared by Alliance Geotechnical. Specific details regarding the extent and type of contaminants present should be sought directly from the RAP. For the purposes of this report, the total volume of contaminated soils as identified in the RAP have been quantified for the purposes of determining the waste removal procedures and protocols. The RAP sets out the selected remediation strategy for the site which includes a combination of 'excavation and offsite disposal', and 'capping and isolation of impacted soils'.

The type of contaminants identified in the RAP for excavation are as follows:

- Lead and benzo(a)pyrene impacted soils
- Asbestos impacted soils

The table below details the total volume of contaminated soil that has been identified as requiring excavation and offsite disposal.

Table 1 – Estimated composition of demolition waste by volume

| Material | $M^3$ |
|---|---|
| Contaminated soil* | 5,811 |

## 2.2 Construction

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.

The table below details the estimated composition by volume of construction waste to be generated.

Table 2 – Estimated composition of construction waste by volume

| Material | $M^3$ |
|---|---|
| Fill/excavation | 934 |
| Concrete | 222 |
| Recycling residual | 48 |
| Metal | 29 |
| Insulation | 20 |
| Vinyl | 15 |
| Timber | 12 |
| Tiling | 10 |
| Plasterboard | 9 |
| Carpet | 3 |
| Brick | 2 |
| Waterproofing/sealant | 2 |
| **Total** | **1,306** |

# 3. 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 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 contractor will implement this Site Waste Minimisation and Management Plan, incorporating the following best practice management techniques as a minimum:

## 3.1 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

## 3.2 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

## 3.3 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.

## 3.4 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 readily recycled through the available facilities.

# 4. Waste Management Systems

## 4.1 Onsite and Offsite Systems

Onsite separation of the various waste streams is encouraged to lower recycling costs by avoid additional fees for sorting at appropriate facilities wherever possible. 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".

The following tables combine the estimated volumes for each component of the development as the recycling practices are to be replicated during each respective phase.

### 4.1.1. Construction

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

Table 3 – Waste management systems (construction)

| Material | Estimated volume ($m^3$) | Onsite (re-use or recycle) | Offsite (recycling contractor) |
|---|---|---|---|
| Fill | 934 | Suitable soil to be reused where appropriate for onsite landscaping/fill | All surplus fill will be taken offsite to suitable C&D facility for processing/reuse |
| Concrete | 236 | Crushed for road base/landscaping where possible | Separated where possible and taken to concrete recycling facility – deposited onsite directly into skips or trucks to be removed from site. |
| Tiling | | | |
| Brick | | | |
| Metal | 29 | | Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling |
| Timber | 15 | | Timber products and off cuts should be separated and free from contamination to |

| | | | |
|---|---|---|---|
| | | | be collected by contractor to be processed/reused |
| Plasterboard | 10 | | Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility |
| Residual Mixed Waste | 80 | | Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible |
| Insulation | | | |
| Carpet | | | |
| Waterproof | | | |
| Vinyl | | | |

Note: The quantities of construction waste materials have been estimated using industry guides for predicting waste quantities[1]. The figures in the table 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 5.

## 4.2 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

[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

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.

## 4.3 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 motorised plant leaving the site, is removed before the vehicle, trailer or motorised plant leaves the premises.

## 4.4 Hazardous Wastes

This document recognises the importance of effective hazardous waste management and draws from the following legislations:

- Protection of the Environment Operations Act 1997
- Protection of the Environment Operations (Illegal Waste Disposal) Act 2013
- Protection of the Environment Operations (Waste) Regulation 2014
- Waste Avoidance and Resource Recovery Act 2001
- NSW Waste Minimisation and Management Regulation 1996

During remediation works, contractors should be aware of the hazardous materials present onsite and the procedures for managing them (refer to the RAP). All contaminated soils as identified in the RAP will be required to be classified in accordance with the NSW EPA Waste Classification Guidelines 2014 prior to transport to, and disposal at an appropriately licensed disposal facility.

**At a minimum the presence of asbestos throughout the majority of the soil onsite would trigger a classification of "Special Waste" – however further detailed classification will be carried out by the remediation contractor to determine whether the concentrations of lead and benzo(a)pyrene impacted soils trigger a classification of "Hazardous Waste".**

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) 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).
- Unexpected finds protocol has been laid out in the RAP and will be carried out by any site worker encountering an unexpected find of hazardous material.

## 4.5 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 its work
- Implements procedures to ensure waste resulting from its 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 RAP and SWMMP as detailed in section 4.6 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 its 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.

## 4.6 Training and Education

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

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.

# 5. Waste Facilities

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

## SolveCo

| Contact | Materials Accepted |
|---|---|
| 38 Links Road, St Marys NSW 2760<br>http://www.solveco.com.au/Page_Hazard.html | • Solid Fill – Soil<br>• Hazardous materials |

## Bingo Industries

| Contact | Materials Accepted |
|---|---|
| 3-5 Duck St<br>Auburn NSW 2144<br>https://www.bingoindustries.com.au/waste-management/commercial-waste-services/soil-contamination | • Solid Fill – Soil (clean and contaminated)<br>• Asbestos<br>• Iron & Steel and Other Metals<br>• Plasterboard<br>• Bricks |

NB concrete may not accepted at this facility

## Suez Kemps Creek Resource Recovery Park

| Contact | Materials Accepted |
|---|---|
| 1725 Elizabeth Drive<br>Kemps Creek NSW 2178<br>https://www.suez.com.au/en-au/who-we-are/suez-in-australia-and-new-zealand/our-locations/waste-management-kemps-creek | • Contaminated waste<br>• Biosolids<br>• Mixed Putrescibles<br>• Non Putrescibles |

NB soil fill may not accepted at this facility