



The Forest High School - Allambie Heights

Construction & Demolition

Waste Management Plan

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| Document Information | | |
|----------------------|---|-------------------------------|
| Client | Johnstaff | |
| Prepared by | Foresight Environmental | |
| Document name | The Forest High School - Allambie Heights - Construction & Demolition Waste Management Plan | |
| Author | Matt Bielby | |
| Reviewed | Scott Ebsary | |
| Revision | Revision Date | Details/comments |
| 1 | 16/09/2022 | Draft report |
| 2 | 19/09/2022 | Updated Report |
| 3 | 29/09/2022 | Updated Demolition quantities |

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1. Introduction

This construction and demolition waste management plan has been prepared by Foresight Environmental on behalf of Johnstaff for the proposed development at The Forest High School - Allambie Heights.

The plan details how the proposed development will manage the waste and recycling generated during the demolition and construction phases of the development and to address the waste management requirements of the Secretary's Environmental Requirements (SEARs). This report will be included within the Environmental Impact Statement that will accompany a State Significant Development Application (SSDA).

2. 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 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 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.

2.1 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.

The tables below detail the estimated composition by volume of demolition waste to be generated.

Table 1 - Estimated composition of demolition waste by volume

| Material | M ³ |
|-------------------|----------------|
| Contaminated Fill | 1,425t |
| Fill | 1,178t |
| Bitumen | 1,867 |
| Brick | 25 |
| Total | 4,495 |

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.

Table 2 below details the estimated composition by volume of construction waste to be generated. Note, these are preliminary estimates based on high level architectural plans - it is anticipated that these estimates will be reviewed and updated as appropriate as more detailed information becomes available in the form of construction cost plans and quantity surveys.

Table 2 - Estimated composition of construction waste by volume

| Material | M ³ |
|----------------------|----------------|
| Mixed Residual Waste | 250 |
| Concrete | 20 |
| Timber | 10 |
| Plasterboard | 8 |
| Metal | 5 |
| Carpet | 1 |
| Total | 294 |

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’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 construction and demolition teams will implement this Waste 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 clear signage to ensure appropriate disposal of all waste types
- Process the material for recycling either onsite or offsite

To achieve operational and spatial efficiency throughout the course of the project, the appointed waste contractor will be selected on the basis that they are able to achieve >90% diversion from landfill through effective sorting of recyclable materials at an appropriately licensed C&D recycling facility. Through this process, the onsite management of waste becomes far more streamlined by enabling the majority of materials to be disposed together rather than allocating individual bins or stockpiles for different material types (which would be unfeasible within the project timelines and spatial constraints).

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 recycled due to contamination, legal requirements or lack of facilities to enable recycling.

4. Waste Management Systems

4.1 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 - this is particularly relevant for higher value recycling stream i.e. metal. However, to maximise operational and spatial efficiency, it is highly likely that the majority of materials will be disposed together and will be collected for separating and processing at an offsite recycling facility.

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. Demolition

Table 3 - Waste management systems (demolition)

| Material | Estimated volume (m ³) | Onsite (re-use or recycle) | Offsite (recycling contractor) |
|--------------------------|------------------------------------|----------------------------|--|
| Contaminated Fill | 1,425t | | Collected by contractor and disposed of in landfill facility. |
| Fill | 1,178t | Re-used where possible | |
| Bitumen | 1,867 | | Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible - materials will be deposited onsite directly into skips or trucks to be removed from site. |
| Brick | 25 | | |

4.1.2. Construction

Table 4: Waste management systems (construction)

| Material | Estimated volume (m ³) | Onsite (re-use or recycle) | Offsite (recycling contractor) |
|-----------------------------|------------------------------------|---|--|
| Mixed Residual Waste | 250 | | Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible - materials will be deposited onsite directly into skips or trucks to be removed from site. |
| Concrete | 20 | Crushed and reused onsite as aggregate/road base where possible | |
| Timber | 10 | | |
| Plasterboard | 8 | | |
| Metal | 5 | | |
| Carpet | 1 | | |

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 5.

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

4.2 Waste Storage and Collection

Designated waste storage areas will be established for the collection of all waste and recyclables. The waste storage areas 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 areas do 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.

4.3 Site waste control and management

To ensure adequate site environmental standards are maintained, it 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. Appropriate control measures to eliminate/minimise the airborne emission of dust and fibres, such as:
 - a. Dust screening barrier around site and relevant areas within site
 - b. Cover stockpiles
 - c. Water suppression

4.4 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).

4.4.1. Asbestos

To manage the risk of asbestos during the demolition/construction phase the following minimum requirements must be implemented:

- Identify all asbestos and asbestos containing material and record in an asbestos register for the project
- Assess the risk of exposure to airborne asbestos
- Eliminate or minimise the risks associated with asbestos by implementing control measures
- Continually review control measures to ensure they are effective

If asbestos is identified a detailed asbestos management plan is required to be prepared for the project which must:

- Identify the location of asbestos and any naturally occurring asbestos.
- Include decisions—and reasons for them—about the management of asbestos at the site, for example safe work procedures and control measures.

- Outline procedures for incidents and emergencies involving asbestos, including who is responsible for what.
- Be maintained with up-to-date information.
- Be accessible to any worker who has carried out or intends to carry out work at the workplace and any health and safety representatives who represent workers at the site.
- Provide information, consultation and training responsibilities to workers carrying out work involving asbestos

4.5 Contracts and Purchasing

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

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 regard to the WMP 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 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.

4.6 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 regard to packaging.

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

5. Waste Facilities

The following waste recycling facilities provide disposal options for the project. The waste generated through the development will either be taken directly to the below facilities or via transfer station. The nearest transfer station to the project is Belrose Resource Recovery Centre. It is the responsibility of the site manager to ensure that the chosen facilities can accept the material being sent to it.

Bingo Recycling Centre - Auburn

| Contact | Materials Accepted |
|--|--|
| 3-5 Duck St, Auburn https://www.bingoindustries.com.au/recycling-centres/recycling-centres-sydney-and-surrounds/auburn | <ul style="list-style-type: none"> Aluminium Scrap, Iron & Steel, Other Metals Bricks Cement Ceramics/ tiles Plasterboard |

Concrete Recyclers - Camellia

| Contact | Materials Accepted |
|--|---|
| Thackeray St, Camellia, NSW https://concreterecyclers.com.au/ | <ul style="list-style-type: none"> Concrete Bricks Ceramics/ Tiles |

Sydney Transwaste Industries - Homebush West

| Contact | Materials Accepted |
|--|---|
| 160 Arthur Street, Homebush West, NSW http://www.transwaste.com.au/ | <ul style="list-style-type: none"> Asbestos Concrete Bricks Garden Cuttings |