# 40 The Retreat Bringelly

# NSW 2556

## Construction & Demolition

## Waste Management Plan

Prepared by Foresight Environmental

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This report is based on information provided by **SCG Developments** coupled with Foresight Environmental's knowledge of waste generated within the health 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 **SCG Developments.**

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# 1. Introduction

This Construction and Demolition Waste Management Plan (C&DWMP) has been prepared by Foresight Environmental on behalf of **SCG Developments** to support a State Significant Development Application (SSDA). The plan details the way in which the proposed mixed-use development at 40 The Retreat, Bringelly (the Site) will manage the waste and recycling generated from the ongoing use of the development in accordance with the following guidelines:

- Western Sydney Aerotropolis Development Control Plan 2022 (The DCP)
- Better Practice Guide for Resource Recovery in Residential Developments 2019
- Better Buildings Partnership Operational Waste Guidelines

# 2. Overview of Proposed Development

## 2.1 Site Description

The Site is located at 40 The Retreat, Bringelly. It is legally described as Lot 272 DP 803167 and is owned by SCG Developments Pty Ltd. The Site is located in the Liverpool Local Government Area (LGA) within the Western Sydney Aerotropolis (Aerotropolis). Specifically, the Site is located in the Aerotropolis Core Precinct.

## 2.2 Development Description

This State Significant Development Application seeks consent for the detailed design and delivery (including construction and use) of a new mixed use residential development, to be developed in two (2) stages. Specifically, development consent is sought for:

### 2.2.1. Stage 1

- Overall site clearing and preparation works, including demolition of all existing development on the Site.
- The redevelopment of the northern portion of the Site, comprising:
    - Temporary Site access to the northern portion of the Site from The Retreat.

- Temporary bin enclosure adjacent the temporary access.
- Excavation works and construction of a shared two (2) storey basement to a maximum depth of RL 60.60, with capacity for 309 vehicle car spaces.
- Construction of three (3) individual mixed-use buildings, comprising:
    - Maximum building heights between 30.4m and 39.8m.
    - A total Gross Floor Area **(GFA)** of 26,191 sqm, comprising 25,731 sqm of residential GFA, 248 sqm of non-residential GFA and 212 sqm of retail GFA, distributed across the three buildings.
    - 254 residential units, distributed across the three buildings.
- Associated landscaping, communal open space and embellishment works.
- Delivery and augmentation of services.

### 2.2.2. Stage 2

- The redevelopment of the southern portion of the Site, comprising:
    - Removal of the Stage 1 temporary access from The Retreat.
    - Connection and access of the Stage 1 basement to the western boundary (to become a future Collector Road).
    - Excavation works and construction of a shared three (3) storey basement to a depth of RL 56.35, with capacity for 326 vehicle car spaces.
    - Site and basement access from the western boundary (to become a future Collector Road).
    - Construction of three (3) individual mixed-use buildings, comprising:
        - Maximum building heights between 23.8m and 39.9m.
        - A total Gross Floor Area (**GFA**) of 29,365 sqm, comprising 28,789 sqm of residential GFA, 211 sqm of retail GFA and 365 sqm of non-residential GFA, distributed across the three buildings.
        - 279 residential units, distributed across the three buildings.
- Associated landscaping, communal open space and embellishment works; and
- Delivery and augmentation of services.

A detailed description of the proposed development is detailed in Section 3.0 of the Environmental Impact Statement prepared by Ethos Urban.

**Figure 1: Site location in context**

# 3. Assessment Requirements

In accordance with section 4.39 of the *Environmental Planning & Assessment Act 1979* (**EP&A Act**), Secretary's Environmental Assessment Requirements (SEARs) for SSD 49645977 were issued on 18 November 2022. This report has been prepared to respond to the relevant issued SEARs, as set out in the table below.

**Table 1 – SEARS: Industry specific requirements for Mixed-use Residential Facilities**

| SSD-65729209: SEARS KEY ISSUES AND DOCUMENTATION<br>17. Waste Management Plan | LOCATION IN REPORT |
|---|---|
| • Identify, quantify, and classify the likely waste streams to be generated during **construction** and operation**.** | • **Section 5** |
| • Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. | • **Section 6, 7 & 8** |
| • Identify appropriate servicing arrangements for the site. | • **Section 9** |
| • If buildings are proposed to be demolished or altered, provide a hazardous materials survey | • **Refer to Contamination Report** |

# 4. Mitigation Measures

A range of issues have been identified and addressed throughout the report, to ensure that once operational the development runs as environmentally efficiently and safely as possible. The table below lists a summary of the main potential impacts and their mitigation measures that are detailed throughout the report.

**Table 2 – Summary of mitigation measures**

| POTENTIAL IMPACTS | MITIGATION MEASURES |
|---|---|
| **All waste going to landfill** | • Separation of all waste materials and taken to appropriate C&D facility for sorting |
| **Hazardous Waste** | • Addressed in Section 9.4, see also Contamination Report. |
| **Asbestos** | • See Section 9.4.1 |

# 5. Demolition & Construction Areas

The figures below show the areas to be demolished (left), and the buildings to be constructed (right), and Table 3 below shows the demolition and construction development profile. These areas have been calculated from the architectural plans and information provided to Foresight Environment, and at this stage are still high-level. They are subject to revision as more detailed plans are provided.

**Figure 2: Existing areas to be demolished and high-level development figure to be constructed**

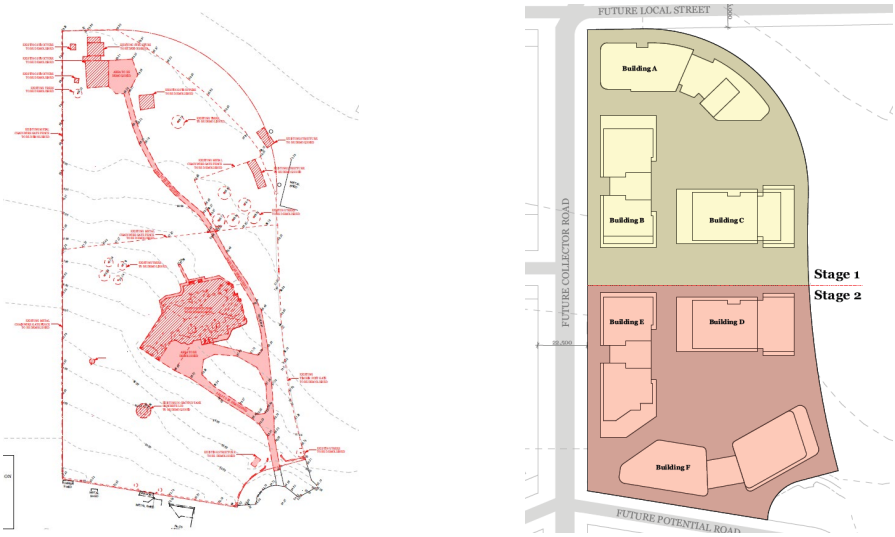


**Table 3 – Construction and Demolition total area**

| AREA | TOTAL $m^2$ |
|---|---|
| **Demolition** | 3,224 |
| **Construction** | 72,680 |

# 6. Assessment Requirements

In accordance with section 4.39 of the *Environmental Planning & Assessment Act 1979* (**EP&A Act**), Secretary's Environmental Assessment Requirements (SEARs) for SSD 49645977 were issued on 18 November 2022. This report has been prepared to respond to the relevant issued SEARs, as set out in the table below.

**Table 4 – SEARS: Industry specific requirements for Mixed-use Residential Facilities**

| SSD-65729209 - SEARS KEY ISSUES AND DOCUMENTATION<br>17. Waste Management Plan | DELIVERABLE |
|---|---|
| • Identify, quantify, and classify the likely waste streams to be generated during **construction** and operation. | **Section 5** |
| • Provide the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. | **Section 6** |
| • Identify appropriate servicing arrangements for the site. | **Section 7 & 8** |

# 7. 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.

## 7.1 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.

### 7.1.1. Estimating Waste Quantities – Demolition

To generate demolition waste generation estimates, the following method was used:

1. Quantify total demolition areas from *240308_40 The Retreat Bringelly – Final Architectural Plans_Optimized.pdf*
2. Use these quantities to estimate demolition wastage generation based on material percentages derived from industry standards [1] and Foresight Environmentals extensive database from similar projects.

[1] waste-management-guidelines-chapter-1-demolition-sep22.pdf (nsw.gov.au)

Please note the approximate percentage of recovered waste is only indicative and has been derived from various resource recovery centres in the Sydney district, and as such it is high level and subject to change. Once the specific waste contractor for the site is known, a more detailed analysis can be calculated.

The table below details the results - the estimated composition by volume of demolition waste to be generated.

**Table 5 – Estimated composition of demolition waste by volume**

| MATERIAL | $m^3$ | KG | TONNES | APPROX % RECOVERED |
|---|---|---|---|---|
| **Plasterboard** | 0.26 | 192 | 0.19 | 94 |
| **Green Waste** | 0.42 | 424 | 0.42 | 100 |
| **Metal** | 1 | 930 | 1 | 100 |
| **Timber*** | 2 | 2,668 | 3 | 33 – 100* |
| **General Residual** | 25 | 24,524 | 25 | 20 |
| **Brick** | 215 | 279,845 | 280 | 100 |
| **Concrete** | 352 | 880,289 | 880 | 100 |
| **TOTAL** | **596** | **1,188,872** | **1,189** | |

**Untreated timber has approximately 100% recovery rate, whereas treated timber is closer to 33%.*

## 7.2 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 4 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.

### 7.2.1. Estimating Waste Quantities – Construction

To generate construction waste generation estimates, the following method was used:

1. Quantify total construction area from *240308_40 The Retreat Bringelly – Final Architectural Plans_Optimized.pdf*

2. Use these areas to estimate construction wastage generation based on material percentages derived from industry standards [2] and Foresight Environmentals extensive database from similar projects.

Please note the approximate percentage of recovered waste is only indicative and has been derived from various resource recovery centres in the Sydney district, and as such it is high level and subject to change. Once the specific waste contractor for the site is known, a more detailed analysis can be calculated.

**Table 6 – Estimated composition of construction waste by volume**

| MATERIAL | $m^3$ | KG | TONNES | APPROX % RECOVERED |
|---|---|---|---|---|
| **Glazing** | 0.01 | 35 | 0.04 | 85 |
| **Textiles (Tiles, Carpet)** | 0.08 | 118 | 0.12 | 100 |
| **Plasterboard** | 0.34 | 240 | 0.24 | 100 |
| **Green Waste** | 1 | 509 | 1 | 100 |
| **Metals** | 1 | 5,488 | 5 | 100 |
| **Timber** | 12 | 13,220 | 13 | 33 – 100* |
| **General Residual** | 26 | 26,165 | 26 | 20 |
| **Recycling Residual** | 58 | 57,607 | 58 | 100 |
| **Concrete** | 139 | 346,834 | 347 | 100 |
| **TOTALS** | **236** | **450,216** | **450** | **-** |

**Untreated timber has approximately 100% recovery rate, whereas treated timber is closer to 33%.*
Note: The quantities of construction and demolition waste materials have been estimated using industry guides for predicting waste quantities. The figures 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.

[2] Waste Management Plan Application Template.doc (live.com)

# 8. 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:

## 8.1 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

## 8.2 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

## 8.3 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).

## 8.4 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.

# 9. Waste Management Systems

## 9.1 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.

### 9.1.1. Demolition

**Table 7 - Waste Management Systems**

| MATERIAL | ESTIMATED VOLUME ($m^3$) | ONSITE (RE-USE OR RECYCLE) | OFFSITE ONSITE (RE-USE OR RECYCLE) |
|---|---|---|---|
| **Timber** | 2 | | Timber products and off cuts should be separated and free from contamination to be collected by contractor to be processed/reused |
| **Green Waste** | 0.42 | Mulched and reused onsite where possible (landscaping) | Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes |
| **Bricks** | 215 | Crushed and reused onsite as aggregate/road base where possible | Removed from site as required for recycling/reuse at C&D facility for processing. |
| **Concrete** | 352 | | |
| **Plasterboard** | 0.26 | | Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible |
| **Metals** | 1 | | |
| **General Residual Waste** | 25 | | |

### 9.1.2. Construction

**Table 8 - Waste Management Systems**

| MATERIAL | ESTIMATED VOLUME ($m^3$) | ONSITE (RE-USE OR RECYCLE) | OFFSITE ONSITE (RE-USE OR RECYCLE) |
|---|---|---|---|
| **Metals** | 1.0 | | Stockpiled and collected as required by specialty metal recycler or taken to appropriate C&D facility for separation and recycling |
| **Timber** | 12 | | Timber products and off cuts should be separated and free from contamination to be collected by contractor to be processed/reused |
| **Plasterboard** | 0.34 | | Stockpiled onsite and collected by plasterboard supplier/recycler or taken to appropriate recycling facility |
| **Green Waste** | 1.0 | Mulched and reused onsite where possible (landscaping) | Separated where possible and taken to appropriate organic processing facility i.e. Australian Native Landscapes |
| **Glazing** | 0.01 | | Collected by contractor to be sorted and re-processed at an appropriate C&D recycling facility into recycled products where possible |
| **Textiles** | 0.08 | | |
| **General Residual Waste** | 26 | | |
| **Recycling Residual** | 58 | | |
| **Concrete** | 139 | 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. |

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 8.

## 9.2 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.

## 9.3 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

## 9.4 Hazardous Waste

A Contamination Report was conducted on the site by Environmental Consulting Services, which found that the site is suitable for redevelopment and sensitive land use. However, during any demolition and material recovery activities, all contractors should be aware of potentially hazardous materials. Hazardous construction materials should be disposed of in accordance with EPA guidelines to protect the environment and personnel. In order to avoid risk to the environment and any breach of legislation all

contractors involved in construction and demolition at the site will be responsible for observing 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).

### 9.4.1. Asbestos

If during demolition asbestos is found, 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

## 9.5 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.

## 9.6 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.

# 10. 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.

## Benedict Recycling Centre

| CONTACT | MATERIALS ACCEPTED |
|---|---|
| 33/39 Riverside Road, Chipping Norton<br>Chipping Norton Waste Management Recycling Centre (benedict.com.au) | • Construction & Demolition<br>• Iron & Steel<br>• Solid Fill |

## Liverpool Scrap Metal

| CONTACT | MATERIALS ACCEPTED |
|---|---|
| 9/377 Newbridge Road, Moorebank<br>Contact Us - Liverpool Scrap Metal | • Copper<br>• Brass<br>• Electric Motors |

## Remondis Resource Recovery Centre

| CONTACT | MATERIALS ACCEPTED |
|---|---|
| 29 Powers Road, Seven Hills<br>Construction demolition // REMONDIS Australia (remondis-australia.com.au) | • Metals<br>• Plasterboard<br>• Concrete |