



# Leigh Design

*waste management plans for all urban developments*

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## Waste Management Plan



### Proposed Development:

**Bills Street, Hawthorn (DHHS Project No. 302817)**

**1-12 Bills Street, Hawthorn, Victoria**

### Prepared for:

**Hayball Pty Ltd**

### Document Control

Report Date: 10 June 2021 (supersedes report dated 4 December 2020)

Prepared By: Leonardo Russi, BEng (Mech), MEng (Env)

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## **WASTE MANAGEMENT SUMMARY**

- The Operator, as defined below, shall be responsible for managing the waste system and for developing and implementing adequate safe operating procedures.
- Waste shall be stored within the development (hidden from external view).
- Users shall sort their waste and dispose garbage and recyclables via the chute and/or directly into designated collection bins.
- Waste shall be collected within the development. The collection contractor shall transfer bins between the waste areas and the truck.
- A private contractor shall provide waste collection services.

## **GLOSSARY**

**Operator:** refers to the Owners Corporation and/or Facility Management, who shall manage site operations (via cleaners, staff and contractors, if required).

**User:** refers to residents and site staff, who shall utilise the waste system.

## **1 SPACE AND SYSTEM FOR WASTE MANAGEMENT**

### **1.1 Development Description and Green Star Initiatives**

This development shall consist of residential apartments. The number of residences is stated in Table 1 (below).

This Waste Management Plan (WMP) includes Green Star initiatives associated with Operational Waste Credit 8 (option 8A - Performance Pathway). For Green Star purposes, the following is required:

- **Landfill Diversion Target:** Table 1 outlines the forecasted solid waste volumes and weights (garbage/landfill, recycling, and organics). In terms of ongoing operational activities, it is recommended adopting a 50% garbage generation target relative to the total solid waste weight (with the balance 50% weight comprising recycling and organics). Therefore, a solid waste Landfill Diversion Target of 50% by weight should be adopted.
- **Monitoring Procedures:** The operator shall separately weigh garbage, recycling, and organic waste and keep monthly records (data sourced from the waste collector could be adopted). A calculation of the landfill diversion rate (percentage by weight) should be included.
- **Methods Separating Waste Streams:** Receptacles for garbage, recycling, and organics shall be provided at each tenement to encourage at-source separation of waste (as noted in Section 4.4, training and instructions shall be provided). Signed and colour-coded bins shall be provided at the Bin Stores as specified in Table 4 so that users could dispose waste into the appropriate bin. Also, separate waste trucks shall collect each of the waste streams.
- **Waste System Drawings:** Refer to enclosed Ground, Lower Ground 1 and Lower Ground 2 floor plans.
- **Waste Auditor Qualifications:** Enclosed please find a CV for Leonardo Russi.

## 1.2 Estimated Garbage and Recycling Generation

The following table summarises the waste estimate (m<sup>3</sup>/week):

Table 1: Waste Estimate

| <b>Waste Source</b>                                   | <b>Base Qty (est.)</b> | <b>Garbage</b> | <b>Organics</b> | <b>Commingled Recycling</b> |
|---|------------------------|----------------|-----------------|-----------------------------|
| Build A Apartments (1 bed)                            | No. of units = 21      | 1.26           | 0.25            | 1.26                        |
| Build A Apartments (2 bed)                            | No. of units = 6       | 0.48           | 0.10            | 0.48                        |
| Build A Apartments (3 bed)                            | No. of units = 9       | 1.08           | 0.22            | 1.08                        |
| Build B Apartments (1 bed)                            | No. of units = 10      | 0.60           | 0.12            | 0.60                        |
| Build B Apartments (2 bed)                            | No. of units = 9       | 0.72           | 0.14            | 0.72                        |
| Build B Apartments (3 bed)                            | No. of units = 7       | 0.84           | 0.17            | 0.84                        |
| Build C Apartments (1 bed)                            | No. of units = 12      | 0.72           | 0.14            | 0.72                        |
| Build C Apartments (2 bed)                            | No. of units = 14      | 1.12           | 0.22            | 1.12                        |
| Build C Apartments (3 bed)                            | No. of units = 5       | 0.60           | 0.12            | 0.60                        |
| Build E Apartments (2 bed)                            | No. of units = 5       | 0.40           | 0.08            | 0.40                        |
| Build E Apartments (3 bed)                            | No. of units = 4       | 0.48           | 0.10            | 0.48                        |
| Build F Apartments (1 bed)                            | No. of units = 9       | 0.54           | 0.11            | 0.54                        |
| Build F Apartments (2 bed)                            | No. of units = 29      | 2.32           | 0.46            | 2.32                        |
| Build F Apartments (3 bed)                            | No. of units = 8       | 0.96           | 0.19            | 0.96                        |
| Build G Apartments (1 bed)                            | No. of units = 36      | 2.16           | 0.43            | 2.16                        |
| Build G Apartments (2 bed)                            | No. of units = 20      | 1.60           | 0.32            | 1.60                        |
| Build G Apartments (3 bed)                            | No. of units = 2       | 0.24           | 0.05            | 0.24                        |
| <b>TOTAL (m<sup>3</sup>/wk)</b>                       |                        | <b>16.12</b>   | <b>3.22</b>     | <b>16.12</b>                |
| <i>Waste Density (tonnes/m<sup>3</sup>)</i>           |                        | <i>0.105</i>   | <i>0.280</i>    | <i>0.060</i>                |
| <i>Approx. Weight (tonnes/week)</i>                   |                        | <i>1.69</i>    | <i>0.90</i>     | <i>0.97</i>                 |
| <i>Approx. Percentage by Weight of Combined Total</i> |                        | <i>47.51</i>   | <i>25.34</i>    | <i>27.15</i>                |

Note: Waste figures are based on Council's volumetric requirements while adopting a 20% organics diversion from the garbage estimate. Waste from common areas is included in the above apartment figures. Waste densities are based on NABERS information.

### 1.3 Collection Services

Based on the anticipated waste volume, a private contractor shall be required to collect waste. The Operator shall choose a waste collection provider, negotiate a service agreement, and pay for these services.

Note: Every rateable tenement is liable to pay the municipal Environmental Levy irrespective of the level of collection services provided by Council.

### 1.4 Location, Equipment, and System Used for Managing Waste

The waste management system is summarised as follows:

- Apartment receptacles for garbage, recycling and organics.
- Public receptacles at amenity areas.
- Six Garbage Chutes and six Recycling Chutes (in pairs), each with residential level intakes and Bin Store discharge.
- Building A, F and G Bin Stores located at Lower Ground Level 1.
- Building B and C Bin Stores located at Lower Ground Level 2.
- Building E Bin Store located at Ground Level.
- Three Hard / Other Waste Rooms (two at Lower Ground Level 1 and one at Lower Ground Level 2).
- Collection bins (kept within the above Bin Stores - refer to Table 2).

The various collection waste-streams are summarised as follows:

Garbage: General waste shall be placed in tied plastic bags and stored within bins.

Recycling: All recyclables shall be commingled into a single type of collection bin (for loose paper, cardboard, glass, aluminium, steel, and plastics). However, if glass separation is required in future, some recycling storage capacity shall be repurposed for glass bins.

Green Waste: Garden organics shall be collected and disposed by the future landscape maintenance contractor.

Food Organics: Users shall place selected compostable waste into Organics bins (acceptable materials generally include: food scraps, raw vegetables, coffee grinds, tea bags, paper towels/serviettes, and flowers), subject to service availability. Approved compostable liners are recommended for these bins.

Other Waste Streams: The disposal of hard/electronic/liquid and other wastes (polystyrene, batteries, paint, chemicals and detox items, etc) shall be organised with the assistance of the Operator.

These items (including e-waste) shall remain within the development until the Operator arranges a private collection from the subject land in accordance with requirements from the relevant authority. In particular e-waste must not be disposed in landfill.

The following table summarises bin quantity/capacity, collection frequency, and area requirements (based on Table 1):

**Table 2: Bin Schedule and Collection Frequency**

| <b>Waste Source</b>  | <b>Waste Stream</b> | <b>Bin Qty</b> | <b>Bin Litres</b> | <b>Collections per Week</b> | <b>Net Area m<sup>2</sup></b> |
|--|---------------------|----------------|-------------------|-----------------------------|-------------------------------|
| Building A (shared bins)   | Garbage             | 2              | 1,100             | 2                           | 3.2                           |
|  | Recycling           | 2              | 1,100             | 2                           | 3.2                           |
|  | Organics            | 2              | 240               | 2                           | 1.0                           |
|  | Hard/E-Waste        | -              | -                 | At Call                     | 1.5                           |
| Building B (shared bins)   | Garbage             | 2              | 660               | 2                           | 2.4                           |
|  | Recycling           | 2              | 660               | 2                           | 2.4                           |
|  | Organics            | 1              | 240               | 2                           | 0.5                           |
|  | Hard/E-Waste        | -              | -                 | At Call                     | 1.5                           |
| Building C (shared bins)   | Garbage             | 2              | 1,100             | 2                           | 3.2                           |
|  | Recycling           | 2              | 1,100             | 2                           | 3.2                           |
|  | Organics            | 2              | 240               | 2                           | 1.0                           |
|  | Hard/E-Waste        | -              | -                 | At Call                     | 1.5                           |
| Building E (shared bins)   | Garbage             | 1              | 660               | 2                           | 1.2                           |
|  | Recycling           | 1              | 660               | 2                           | 1.2                           |
|  | Organics            | 1              | 120               | 2                           | 0.5                           |
|  | Hard/E-Waste        | -              | -                 | At Call                     | 1.5                           |
| Building F (shared bins)   | Garbage             | 2              | 1,100             | 2                           | 3.2                           |
|  | Recycling           | 2              | 1,100             | 2                           | 3.2                           |
|  | Organics            | 2              | 240               | 2                           | 1.0                           |
|  | Hard/E-Waste        | -              | -                 | At Call                     | 2.0                           |
| Building G (shared bins)   | Garbage             | 2              | 1,100             | 2                           | 3.2                           |
|  | Recycling           | 2              | 1,100             | 2                           | 3.2                           |
|  | Organics            | 2              | 240               | 2                           | 1.0                           |
|  | Hard/E-Waste        | -              | -                 | At Call                     | 2.0                           |
| <b>Net Waste Storage Area (excludes circulation), m<sup>2</sup>:</b> |                     |                |                   |                             | <b>47.8</b>                   |

**Notes:**

- The Operator shall organise hard waste collections (as required).
- Bins shall be sourced by the Operator (either purchased from a supplier or leased from the collection contractor).
- Subject to stakeholders' preference/capability (and as built constraints), bin sizes and quantities can be changed. Also, recyclables can be either commingled or split into bins for separate recycling streams.

### 1.5 Planning Drawings, Waste Areas, and Management of the Waste System

The plans illustrate sufficient space for onsite bin storage, as required by the above schedule.

Notwithstanding the above, collection days shall be staged appropriately and the Operator shall stipulate procedures for effective management of the available space.

### 1.6 Collection Bin Information

The following bins shall be utilised (see Sect. 4.4 for signage requirements):

Table 3: Bin Details

| Capacity (litres) | Height (mm) | Width (across front, mm) | Depth (side on, mm) | Empty Weight (kg) | Average* Gross Weight (kg) |
|-------------------|-------------|--------------------------|---------------------|-------------------|----------------------------|
| 120               | 930         | 480                      | 545                 | 10                | 26                         |
| 240               | 1060        | 585                      | 730                 | 13                | 45                         |
| 660               | 1250        | 1240                     | 780                 | 43                | 130                        |
| 1100              | 1330        | 1240                     | 1070                | 65                | 210                        |

Notes:

- \* = Average Gross Weight is based on domestic waste studies (which vary subject to locality and waste-type). Expect greater weight for wet or compacted waste.
- Use the above details as a guide only – variations will occur. The above is based on Sulo plastic (HDPE) flat-lid bins.
- Bins that receive waste under the chute shall be reinforced to withstand loads from waste falling at high speed.

Table 4: Boroondara Colour Coding

| Bin  | Garbage | Commingled Recycling | Green Waste |
|------|---------|----------------------|-------------|
| Lid  | Green   | Yellow               | Orange      |
| Body | Green   | Blue                 | Green       |

Note: For private bins, AS4123.7 bin colours can be adopted. Private bins shall be labelled to identify the waste generator and site address. For Food Waste / organics bins, AS 4123.7 bins have a Burgundy lid and a Dark Green or Black body.

## **2 ACCESS FOR USERS, COLLECTORS, AND COLLECTION VEHICLES**

### **2.1 User Access to Waste Facilities**

Upper level residents shall dispose sorted garbage and recyclables via chutes (available at upper apartment levels), in accordance with instructions from the chute supplier. The Operator shall assist residents to dispose large cardboard items and any other wastes unsuitable for chute disposal.

Residents without chute intakes at their own level shall dispose sorted waste directly into the bins located within their respective Bin Store.

Site staff shall maintain the various public and amenity waste receptacles (if required, using a suitable trolley and the lift).

Note: The Operator shall have access to the Bin Stores to rotate the bins, ensuring that empty bins are available along the circulation area so that users are able to reach them. Also, the Operator shall monitor the filling of the bins under the chutes and change these when full.

### **2.2 Collection Arrangements and Access to Waste Facilities**

- A private contractor shall collect waste within the onsite carparks at Ground and Lower Ground Levels.
- Collection staff (driver and assistant) shall have access to the Bin Stores and transfer bins to the truck and back to the stores.
- The waste collection shall be carried-out by rear-lift vehicles (nom. 6.4m long, 2.1m high, and 6.4 tonnes gross vehicle mass, needing a 2.3m height clearance when lifting 660L bins and needing a 2.5m height clearance when lifting 1100L bins).



### **3 AMENITY, LOCAL ENVIRONMENT, AND FACILITY DESIGN**

#### **3.1 Noise Minimisation Initiatives**

- Collection bins shall feature rubber wheels for quiet rolling during transfers.
- Chutes and waste areas shall meet BCA and AS2107 acoustic requirements.
- Local laws shall be observed for all operations in public and private areas.
- For private services, the hours of waste collections shall be as specified in Council's local laws. Also, Section 5 of the Victorian EPA Noise Control Guideline Publication 1254 (see below) shall be observed to protect the acoustic amenity of the development and surroundings.

##### Victorian EPA Noise Control Guideline Publication 1254 October 2008 (excerpt)

##### [Section] 5. Domestic Refuse Collection

The main annoyance produced by domestic refuse collections occurs in the early morning (i.e. before 7:00am). Therefore, if possible, routes should be selected to provide the least impact on residential areas during that time.

Collection of refuse should be restricted to the following criteria:

- Collection occurring once a week should be restricted to the hours: 6am to 6pm Monday to Saturday.
- Collections occurring more than once a week should be restricted to the hours: 7am to 6pm Monday to Saturday.
- Compaction should only be carried out while on the move.
- Bottles should not be broken up at the point of collection.
- Routes which service entirely residential areas should be altered regularly to reduce early morning disturbance.
- Noisy verbal communication between operators should be avoided where possible.

#### **3.2 Litter Reduction and Prevention of Stormwater Pollution**

The Operator shall be responsible for:

- Promoting adequate waste disposal into the bins (to avoid waste-dumping).
- Securing the waste areas (whilst affording access to users/staff/contractors).
- Preventing overfilled bins, keeping lids closed and bungs leak-free.
- Abating any site litter and taking action to prevent dumping and/or unauthorised use of waste areas.
- Requiring the collection contractor to clean-up any spillage that might occur when clearing bins.

The above will minimise the dispersion of site litter and prevent stormwater pollution (thus avoiding impact to the local amenity and environment).

#### **3.3 Ventilation, Washing, and Vermin-Prevention Arrangements**

Waste areas shall feature:

- Ventilation in accordance with Australian Standard AS1668. For chute ventilation, a fan with riser to a rooftop exhaust shall be utilised.
- Tight-fitting doors (all other openings shall have vermin-proof mesh or similar).
- Impervious flooring (also, smooth, slip-resistant, and appropriately drained).

- A graded bin wash area, hosecock, hose, and a suitable floor-waste connected in accordance with relevant authority requirements (alternatively, the Operator shall engage a suitable contractor to wash bins in a mobile bin-wash vehicle). The bin and wash areas may overlap, as stored bins can be moved so that a bin can be washed.
- A water-flushing nozzle with accessible water cock shall be provided at the head of each chute. Include a floor waste and hosecock near each chute outlet.

The Operator shall regularly clean waste areas/equipment. Also, access doors and bin-lids shall be kept closed.

### **3.4 Design and Aesthetics of Waste Storage Areas and Equipment**

Waste shall be placed within collection bins and stored in designated onsite areas (hidden from external view). Following waste collection activities, bins shall be returned to the storage areas as soon as practicable.

Waste facilities shall be constructed of durable materials and finishes, and maintained to ensure that the aesthetics of the development are not compromised. These facilities and associated passages shall be suitably illuminated (this provides comfort, safety, and security to users, staff, and contractors). Access doors shall feature keyless opening from within.

Chutes shall be sized and designed as recommended by a reputable chute manufacturer (chutes are proprietary items). The chute supplier shall fix safe-operating instructions to each intake-door and place a warning sign on each chute outlet.

For improved safety, each chute outlet shall be shrouded with a suitable rubber skirt and designed to minimise the effect of falling waste into the associated bin (and to stop dispersion of debris). Also, access to each chute outlet shall be restricted to trained personnel only (this area shall be suitably fenced and kept locked). The Operator shall train staff and waste collectors concerning hazards associated with the chute discharge area.

The design and construction of waste facilities and equipment shall conform to the Building Code of Australia, Australian Standards, and local laws.

## **4 MANAGEMENT AND SUSTAINABILITY**

### **4.1 Waste Sorting, Transfer, and Collection Responsibilities**

Garbage shall be placed within tied plastic bags prior to transferring into the collection bins or chutes. Cardboard shall be flattened and recycling containers un-capped, drained, and rinsed prior to disposal into the appropriate bin/chute. Bagged recycling is not permitted.

Refer to Section 2 for waste transfer requirements and collection arrangements.

### **4.2 Facility Management Provisions to Maintain & Improve the Waste System**

The Operator shall manage site operations (refer to the glossary in page 2).

It shall be the responsibility of the Operator to maintain all waste areas and components, to the satisfaction of users, staff, and the relevant authority (users shall maintain their internal waste receptacles).

The Operator shall ensure that maintenance and upgrades are carried-out on the facility and components of the waste system. When required, the Operator shall engage an appropriate contractor to conduct services, replacements, or upgrades.

### **4.3 Arrangements for Protecting Waste Equipment from Theft and Vandalism**

It shall be the responsibility of the Operator to protect the equipment from theft and vandalism. This shall include the following initiatives:

- Secure the waste areas.
- Label the bins according to property address.
- Waste shall be collected within the subject site.

### **4.4 Arrangements for Bins/Equipment Labelling and Ensuring Users and Staff are Aware of How to Use the Waste System Correctly**

- The Operator shall provide appropriate signage for the bins. Signage is available at the following internet address: [www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au).
- The Operator shall publish/distribute “house rules” and educational material to:
  - Inform users/staff about the waste management system and the use/location of the associated equipment (provide the summary in page 2 of this report).
  - Improve facility management results (lessen equipment damage and chute blockages, reduce littering, and achieve cleanliness).
  - Advise users/staff to sort and recycle waste with care to reduce contamination of recyclables.

#### **4.5 Sustainability and Waste Avoidance/Reuse/Reduction Initiatives**

The *Environment Protection Act 1970* includes principles of environment protection and guidance for waste management decision making. Also, the *Sustainability Victoria Act 2005* established Sustainability Victoria as the statutory authority for delivering programs on integrated waste management and resource efficiency.

From a design perspective, the development shall support the acts by providing an adequate waste system with ability to sort waste.

The Operator shall promote the observance of the acts (where relevant and practicable) and encourage users and staff to participate in minimising the impact of waste on the environment. For improved sustainability, the Operator shall consider the following:

- Observe the waste hierarchy in the *Environment Protection Act 1970* (in order of preference): a) waste avoidance, b) reuse, c) recycle, d) recovery of energy, e) treatment, f) containment, and g) disposal.
- Peruse the Sustainability Victoria website: [www.sustainability.vic.gov.au](http://www.sustainability.vic.gov.au).
- Participate in Council and in-house programs for waste minimisation.
- Establish waste reduction and recycling targets; including periodic waste audits, keeping records, and monitoring of the quantity of recyclables found in landfill-bound bins (sharing results with users/staff).

#### **4.6 Waste Management Plan Revisions**

For any future appropriate Council request, changes in legal requirements, changes in the development's needs and/or waste patterns (waste composition, volume, or distribution), or to address unforeseen operational issues, the Operator shall be responsible for coordinating the necessary Waste Management Plan revisions, including (if required):

- A waste audit and new waste strategy.
- Revision of the waste system (bin size/quantity/streams/collection frequency).
- Re-education of users/staff.
- Revision of the services provided by the waste collector(s).
- Any necessary statutory approval(s).

## 5 **SUPPLEMENTARY INFORMATION**

- The Operator shall observe local laws and ensure that bins aren't overfilled or overloaded.
- Waste incineration devices are not permitted, and offsite waste treatment and disposal shall be carried-out in accordance with regulatory requirements.
- For bin traffic areas, either level surfaces (smooth and without steps) or gentle ramps are recommended, including a roll-over kerb or ramp. Should ramp gradients, bin weight, and/or distance affect the ease/safety of bin transfers, the Operator shall consider the use of a suitable tug.
- The Operator and waste collector shall observe all relevant OH&S legislation, regulations, and guidelines. The relevant entity shall define their tasks and:
  - Comply with Worksafe Victoria's Occupational Health and Safety Guidelines for the Collection, Transport and Unloading of Non-hazardous Waste and Recyclable Materials (June 2003).
  - Assess the Manual Handling Risk and prepare a Manual Handling Control Plan for waste and bin transfers (as per regulatory requirements and Victorian COP for Manual Handling).
  - Obtain and provide to staff/contractors equipment manuals, training, health and safety procedures, risk assessments, and adequate personal protective equipment (PPE) to control/minimise risks/hazards associated with all waste management activities. As a starting point, these documents and procedures shall address the following:

| <b>Task (to be confirmed)</b>               | <b>Hazard (TBC)</b>                              | <b>Control Measures (TBC)</b>   |
|---|--|---|
| Sorting waste and cleaning the waste system | Bodily puncture. Biological & electrical hazards | Personal protective equipment (PPE). Develop a waste-sorting procedure  |
| Bin manual handling                         | Sprain, strain, crush                            | PPE, staff training. Maintain bin wheel-hubs. Limit bin weight. Provide mechanical assistance to transfer bins  |
| Chute discharge                             | Strike & debris from falling waste               | PPE, staff training, and signage, maintain access restrictions. Include a suitable curtain/skirt and a locked mesh fence around the discharge zone of the chute |
| Bin transfers and emptying into truck       | Vehicular strike, run-over                       | PPE. Develop a Hazard Control Plan for transfers and collections. Maintain visibility. Use a mechanical bin-tipper  |
| Truck access (reversing & manoeuvring)      | Vehicular incident, strike, run-over             | PPE. Use a trained spotter. Develop a truck-manoeuving and traffic-control procedure  |

Note: The above shall be confirmed by a qualified OH&S professional who shall also prepare site-specific assessments, procedures, and controls (refer to Section 6).

## **6 CONTACT INFORMATION**

**City of Boroondara** (local Council), ph 03 9278 4444

**Waste Wise Environmental** (private waste collector), ph 1300 550 408

**Kartaway** (private waste collector), ph 1300 362 362

**FJP Safety Advisors Pty Ltd** (OH&S consultant), ph 03 9255 3660

**Electrodrive Pty Ltd** (tug & trailer supplier – for bin transfers), ph 1800 033 002

**Warequip** (tug supplier – for bin transfers), ph 1800 337 711

**Sulo MGB Australia** (bin supplier), ph 1300 364 388

**One Stop Garbage Shop** (bin supplier), ph 03 9338 1411

**ASI JD MacDonald Pty Ltd** (chute supplier), ph 03 8558 7200

**Elephant's Foot** (chute supplier), ph 02 9780 3500

**Wastech Engineering Pty Ltd** (chute supplier), ph 1800 465 465

Note: The above includes a complimentary listing of contractors and equipment suppliers. The stakeholders shall not be obligated to procure goods/services from these companies. Leigh Design does not warrant (or make representations for) the goods/services provided by these suppliers.

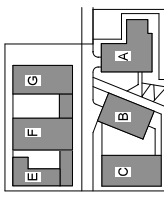
## **7 LIMITATIONS**

The purpose of this report is to document a Waste Management Plan, as part of a Planning Permit Application.

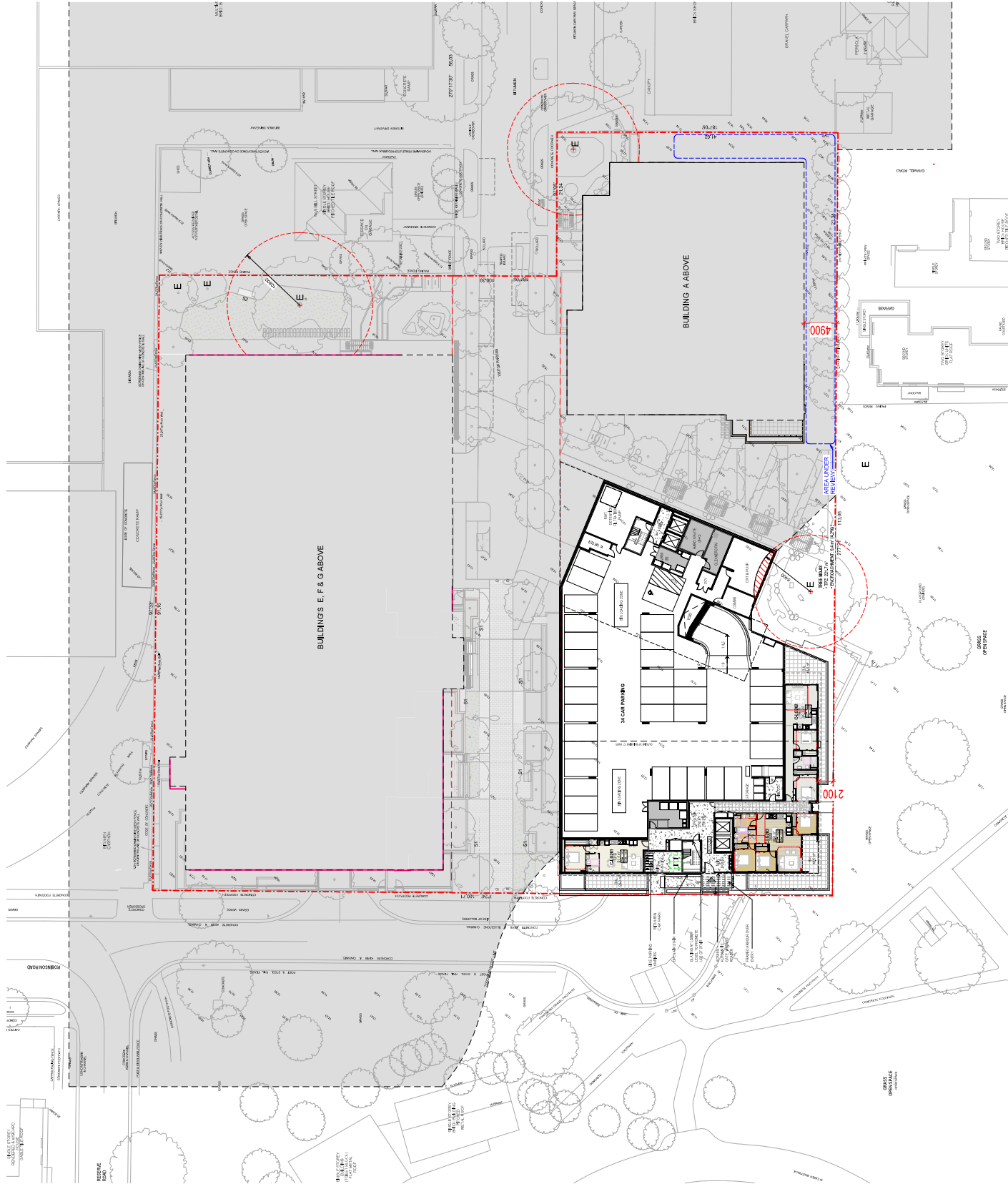
This report is based on the following conditions:

- Operational use of the development (excludes demolition/construction stages).
- Drawings and information supplied by the project architect.
- The figures presented in this report are estimates only. The actual amount of waste will depend on the development's occupancy rate and waste generation intensity, the user's disposition toward waste and recycling, and the Operator's approach to waste management. The Operator shall make adjustments, as required, based on actual waste volumes (if the actual waste volume is greater than estimated, then the number of bins and/or the number of collections per week shall be increased, STCA).
- This report shall not be used to determine/forecast operational costs, or to prepare feasibility studies, or to document operational/safety procedures.

## KEY PLAN



**NOTE:** LANDSCAPE BACKGROUNDS PENDING COORDINATION. FOR CURRENT LANDSCAPE DESIGN, REFER TO URBAN DESIGN REPORT



| Rev | Description                   | Date       |
|-----|-------------------------------|------------|
| 5   | DRAFT TP SET FOR COORDINATION | 28.05.2021 |
| 4   | DRAFT TP SET FOR CONSULTATION | 28.05.2021 |
| 3   | DRAFT TP SET FOR CONSULTATION | 21.05.2021 |
| 2   | DRAFT TP SET FOR CONSULTATION | 19.05.2021 |
| 1   | DRAFT TP SET FOR CONSULTATION | 18.05.2021 |

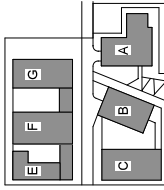


| Address           | Sydney            | Reston            |
|-------------------|-------------------|-------------------|
| <b>McDonough</b>  | <b>McDonough</b>  | <b>McDonough</b>  |
| Level 3           | Ground floor      | Level 3           |
| 250 Anderson Lane | 250 Anderson Lane | 250 Anderson Lane |
| Reston, VA 20190  | Reston, VA 20190  | Reston, VA 20190  |
| T +61 2 9558 2544 | T +61 2 9558 2544 | T +61 2 3211 0621 |

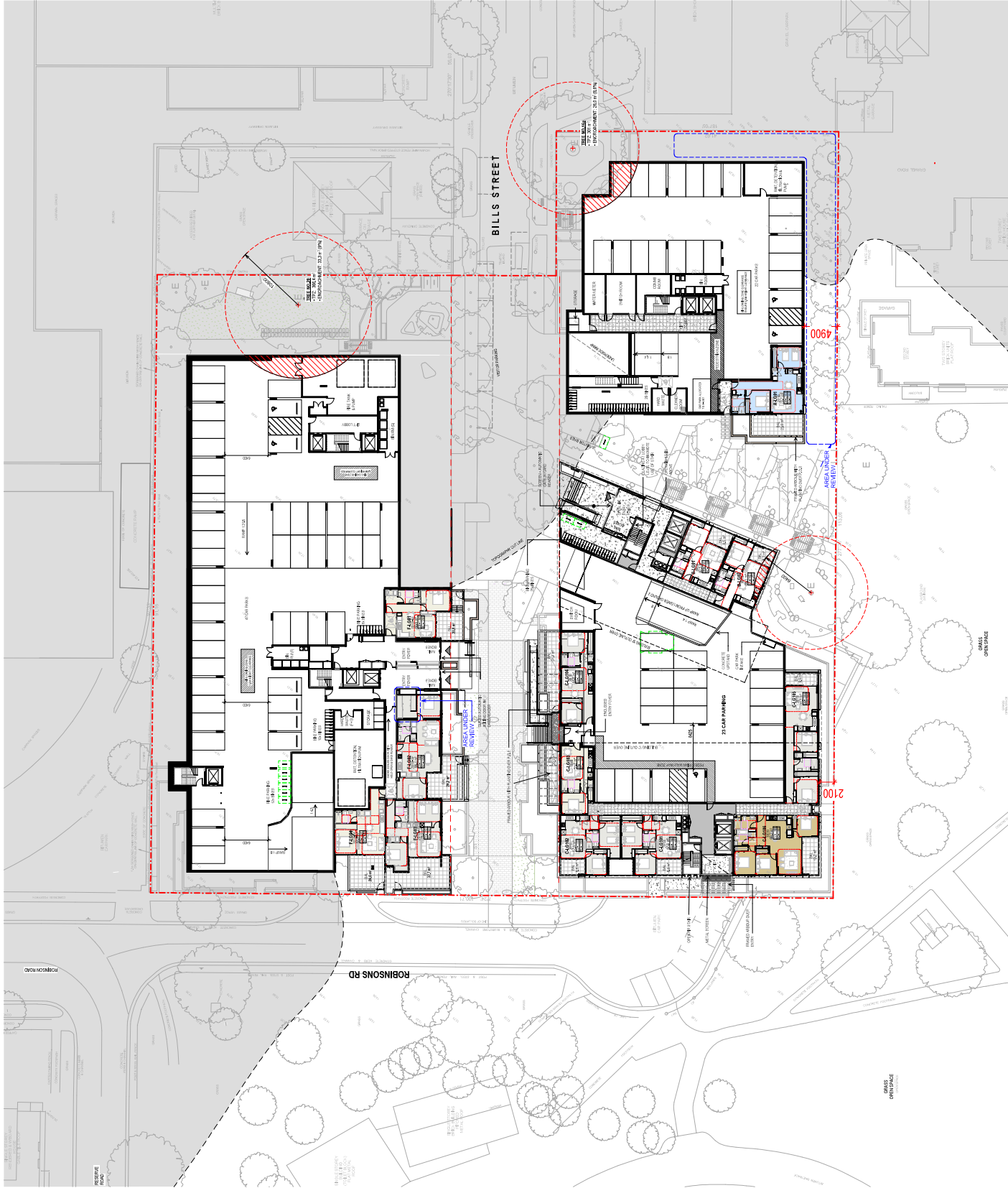


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## KEY PLAN



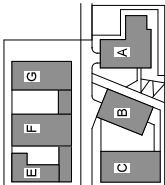
**NOTE:** LANDSCAPE BACKGROUNDS  
PENDING COORDINATION.  
FOR CURRENT LANDSCAPE  
DESIGN, REFER TO URBAN  
DESIGN REPORT

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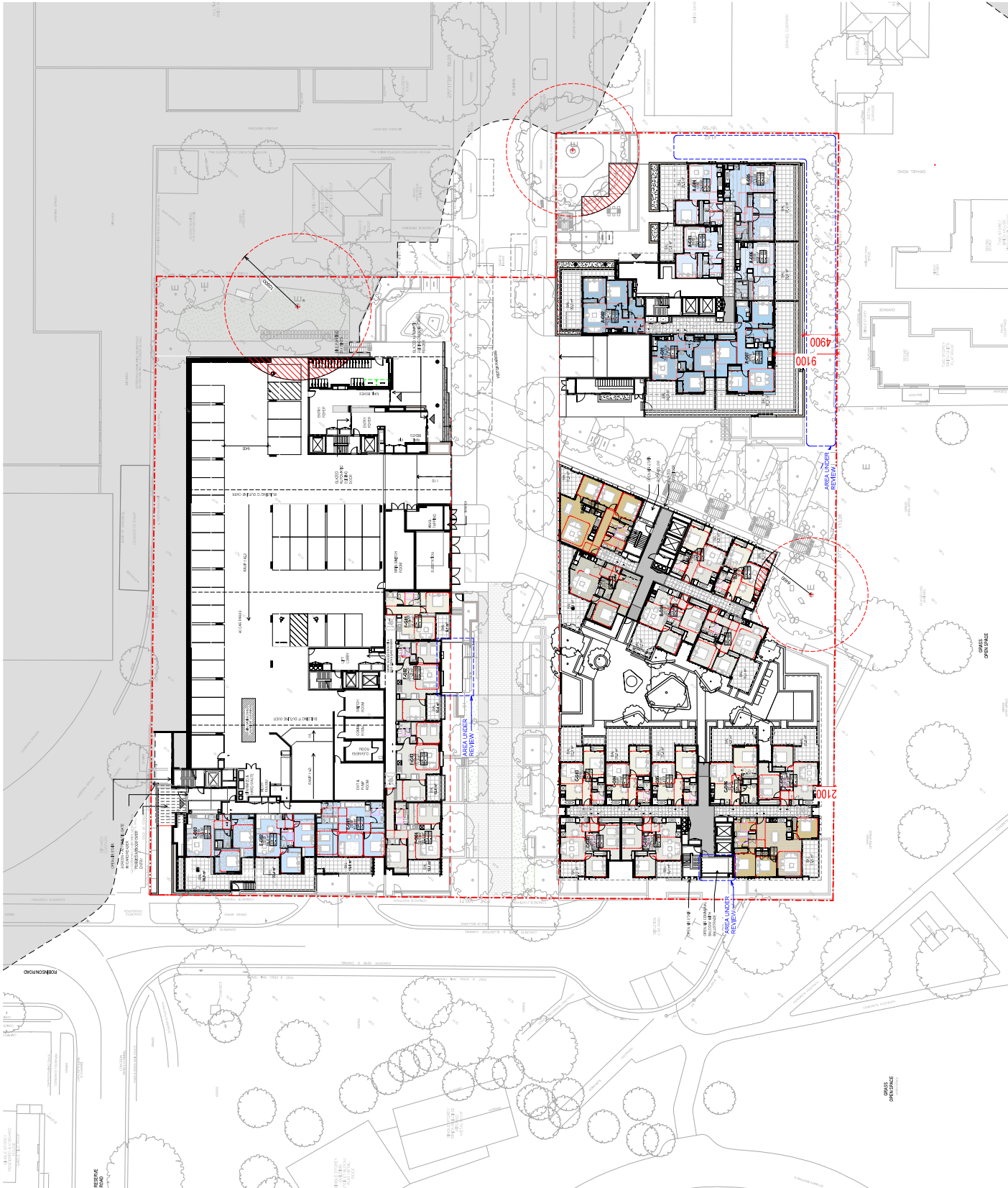
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KEY PLAN



**NOTE:**  
LANDSCAPE BACKGROUNDS  
FOR CURRENT LANDSCAPE  
DESIGN REPORT



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**hnp**

**VICTORIA**  
HAWTHORN  
HAWTHORN

**BILLS STREET**  
1-13 BILLS ST.  
HAWTHORN

| Drawn By   | Checked By | Date Printed | Scale  |
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| A          | Checked By | 1/1/2021     | 1:1000 |
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| 2480       | AR-TP01.04 | 5            |        |



# Leigh Design

*waste management plans for all urban developments*

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I [www.leighdesign.com.au](http://www.leighdesign.com.au)

## **CURRICULUM VITAE – LEONARDO RUSSI**

Position: Principal Engineer

Qualifications:

- Bachelor of Science in Mechanical Engineering (Honours), 2001.
- Master's degree in Environmental Engineering Management, 2014.

Affiliation & Memberships:

- Waste Management Association of Australia.

### **PROFESIONAL EXPERTISE**

Consulting engineer at over five-hundred residential and commercial developments since 2009 (assisting developers, architects, and project managers):

- Peer review and waste management information for Sustainability and Green Star Assessments.
- Waste Management Planning (waste strategy and facility design).
- Equipment selection and specification.
- Liaison with regulatory authorities.
- Conducted waste reviews/audits at a number of existing facilities (including hospitals, shopping centres, hotels, and residential buildings), where modifications to the existing waste systems were documented.

### **SELECTED GREEN STAR PROJECTS**

- Avion Mixed Use Development (245-251 Normanby Road, South Melbourne, Vic).
- Student accommodation (17-21 Wills Street, Melbourne, Vic).

### **GUIDELINES**

The following guidelines are regularly used:

- Policy for Waste Minimisation in Developments (Council of the City of Sydney 2005, New South Wales).
- Better Practice Guide for Waste Management in Multi-Unit Dwellings (Department of Environment and Climate Change 2008, New South Wales).
- Australian Waste Definitions (Sustainable Resource Use 2012, Australia).
- Guidelines for Preparing a Waste Management Plan (City of Melbourne 2017, Victoria).
- Better Practice Guide for Waste Management and Recycling in Multi-Unit Developments (Sustainability Victoria 2019, Victoria).