21-41 Canberra Ave & 18-32 Holdsworth Ave.
St Leonards South, NSW

Residential Development

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

4/06/2021
Report No. SO798
Revision C

Client

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SCOPE

A Waste Management Plan (WMP) is to be submitted with all development applications for new and change-of-use developments that will generate construction, demolition, and operational waste.

This WMP applies only to the **construction** and **demolition** phases of the proposed development.

The requirements outlined in this WMP must be implemented on site during construction and demolition and may be subject to review upon any change to the design. Construction and demolition waste management requirements will also be subject to review as part of the Construction Management Plan.

The waste management for the **operational** phase of the development is addressed in a separate report completed by EFRS.

REVISION REFERENCE

Revision	Date	Prepared by	Reviewed by	Description
A	27/01/2021	W. Brunson	A. Armstrong	Draft
B	31/05/2021	W. Brunson	A. Armstrong	Amendment
B	04/06/2021	A. Armstrong	A. Armstrong	Amendment

CONTENTS

1 INTRODUCTION....1
1.1 Background....1
1.2 Site Summary....1
1.3 Site Location....2
1.4 Legislation and Guidance....3
1.5 Waste Diversion Targets....3
1.6 Report Objectives....3
1.7 Limitations....4
1.8 Lane Cove Council....4
2 GENERAL WASTE MANAGEMENT PROVISIONS....5
2.1 Stakeholder Roles and Responsibilities....5
2.2 Monitoring and Reporting....6
2.3 Opportunities for Reuse and Recycling....7
2.4 Management of Hazardous Waste Materials....8
2.5 Management of Excavation Waste....8
3 SITE SPECIFIC WASTE MANAGEMENT PROVISIONS....9
3.1 Demolition Waste Volumes and Management....9
3.2 Construction Waste Volumes and Management....11
3.3 Recycling Directory....13
3.4 Site-Specific Operational Measures....14
3.5 Location and Design of Waste Management Facilities....16
3.6 Existing Site....19
3.7 Proposed Development: Level 2 Floor Plan....20
3.8 Proposed Development: Level 1 Floor Plan....21

LIST OF TABLES

Table 1. Stakeholder Roles and Responsibilities....5
Table 2. Potential Reuse/Recycling Options for Construction Materials....7
Table 3. Demolition Waste Conversion....9
Table 4. Demolition Waste Management....10
Table 5. Construction Waste Conversion....11
Table 6. Construction Waste Management....12

1 INTRODUCTION

1.1 Background

EFRS has been tasked to prepare the following waste management plan for the management of construction and demolition waste generated at 27-41 Canberra Ave. & 26-32 Holdsworth Ave., St Leonards South, NSW.

Waste management strategies and auditing are a requirement on construction sites to promote strong sustainability outcomes. It is EFRS's belief that a successful waste management strategy contains three key objectives:

i. ***Promote responsible source separation*** to reduce the amount of waste that goes to landfill, by implementing convenient and efficient waste management systems

ii. ***Ensure adequate waste provisions and robust procedures*** that will cater for potential changes during the operational phase of the development

iii. ***Comply*** with all relevant Australian Standards, council codes, policies, and guidelines.

1.2 Site Summary

The proposed development falls under the LGA of Lane Cove Council. The site is currently occupied by:

- 17 x single dwellings (brick and weatherboard, 1 – 2 stories)

The proposal consists of:

- Five buildings (7, 8, 9, 10, and 11)
- Bldg 7 has 6 levels and 45 dwellings
- Bldg 8 has 10 levels and 72 dwellings
- Bldg 9 has 6 levels and 66 dwellings
- Bldg 10 has 8 levels and 46 dwellings
- Bldg 11 has 7 levels and 100 dwellings

All figures and calculations are based on area schedules as advised by our client and shown on architectural drawings.

1.3 Site Location

The site is located at 21-41 Canberra Ave. & 18-32 Holdsworth Ave., St Leonards South, NSW, as shown below.

Figure 1. Site Location – Map

Source: Mecone / Nearmap

1.4 Legislation and Guidance

Information provided in this WMP comes from a wide range of construction and demolition waste management guidance at the local, state, and federal levels. The primary sources of guidance include:

- Lane Cove Development Control Plan 2010
- Australian Government, Department of Sustainability, Environment, Water, Population and Communities. *Construction and Demolition Waste Guide – Recycling and Re-use Across the Supply Chain*. (2014, November).
- NSW Waste Avoidance and Resource Recovery (WARR) Strategy 2014-2021
- NSW Waste Classification Guidelines 2014
- WALGA Construction Waste Management Plan Guidelines
- Australia's National Waste Policy 2018

1.5 Waste Diversion Targets

To quantify and measure this sustainable approach to waste management, the NSW WARR Strategy 2014-2021 outlines specific targets in order to clarify the state's long-term goals and priorities. These targets were supported by industry, community, state, and local governments during the Strategy's consultation phase, and include:

- Increasing construction and demolition recycling rates to 80%
- Increasing waste diverted from landfill to 75%
- Reducing litter by 40%

Reduce illegal dumping incidents by 30%

1.6 Report Objectives

Throughout this report, EFRS aims to encourage the following waste management practices for the duration of the demolition and construction stages of the development:

- Re-use of excavated material on-site and disposal of any excess to an approved site;
- Green waste mulched and re-used on-site as appropriate, or recycled off-site;
- Bricks, tiles and concrete re-used on-site as appropriate, or recycled off-site;
- Plasterboard waste returned to supplier for recycling;
- Framing timber re-used on site or recycled off-site;
- Windows, doors and joinery recycled off-site;
- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with WorkCover Authority and EPA requirements;
- Plumbing, fittings and metal elements recycled off site;
- Ordering accurate quantities of materials and prefabrication of materials where possible;
- Re-use of formwork;
- Careful source separation of offcuts to facilitate re-use, resale or recycling.

1.7 Limitations

This report has been prepared by EFRS for the sole purpose of providing a Construction and Demolition Waste Management Plan (C&D WMP) to support a development application. The report is provided with the following limitations:

- This report is for the sole use of the client (including their officers, employees and advisers) and should not be used or relied upon by any other party without prior written consent from EFRS;
- Drawings, estimates and information contained in this report have been prepared by analysing information, plans and documents supplied by the client, or nominated third parties. Any assumptions based on the information contained in the report are outside the control of EFRS;
- The calculations presented in the report are estimates only. The amount of waste generated will be dependent on the approach taken by site management, including the levels of training and education offered to site staff and the actions and attitudes of staff themselves.
- The site manager will make adjustments as required based on actual waste volumes (e.g. if waste volumes are greater than estimated, then waste storage capacity and collection frequencies will increase accordingly) and increase the amount of waste storage and collection frequency accordingly;
- The report has been prepared with all due care and attention; however, no assurance or representation is made that the WMP reflects the actual outcome. EFRS will not be liable to for any plans or outcomes that are not suitable for purpose, whether as a result of incorrect or unsuitable information or otherwise;
- EFRS offer no warranty or representation of accuracy or reliability of the WMP unless specifically stated;
- Examples of equipment provided in this report should be reviewed by the appropriate equipment supplier who will assess the correct equipment for supply. Reference to any other business or product besides EFRS and EFRS equipment is for information purposes only and is not officially endorsed or recommended by EFRS.

1.8 Lane Cove Council

Lane Cove Council is committed to responsible management practices for waste storage and collection. As such, Council aims to:

- To maximise reuse and recycling of household waste and industrial/commercial waste.
- To assist applicants in planning for sustainable waste management, through the preparation of a site waste minimisation and management plan.
- To assist applicants to develop systems for waste management that ensures waste is transported and disposed of in a lawful manner.
- To provide guidance in regard to space, storage, amenity, and management of waste management facilities.
- To ensure waste management systems are compatible with collection services.
- To minimise risks associated with waste management at all stages of development.

2 GENERAL WASTE MANAGEMENT PROVISIONS

2.1 Stakeholder Roles and Responsibilities

All stakeholders have a responsibility for their own environmental performance and compliance with all legislation.

The Construction Contractor will be responsible for implementing this WMP, although site staff have a responsibility to ensure their own compliance at all times. Where possible, an Environmental Management Representative (EMR) should also be appointed for the project to help ensure compliance. The following table demonstrates the primary roles and responsibilities of the respective stakeholders:

Table 1. Stakeholder Roles and Responsibilities

Roles	Responsibilities
Construction Site Management	• Organising waste collections as required; • Organising replacement or maintenance requirements for bins; • Investigating and ensuring prompt clean-up of illegally dumped waste materials; • Notify the Principal Certifying Authority of the appointment of waste removal, transport or disposal contractors for waste tracking purposes; • Ensuring waste related equipment is well maintained; • Accurate calculations ensuring only the required amount of materials are ordered; • Ensuring segregation of materials to maximise reuse and recycling; • Routine checking of waste sorting and storage areas for cleanliness, hygiene, contamination and OH&S issues; • Ensuring that all monitoring and audit results are well documented and carried out as specified in the WMP; • Ensuring effective signage, communication and education is provided to site staff/contractors; • Providing staff/contractors with equipment manuals, training, health and safety procedures, risk assessments, and PPE to control hazards associated with all waste management activities; • Assessing any manual handling risks and prepare a manual handling control plan for waste and bin transfers;
Site Staff/Contractors	• Ensuring adequate separation and disposal of waste streams in compliance with the WMP; • Abiding by all relevant OH&S legislation, regulations, and guidelines; • Attending training and inductions as required; • Cleaning and transporting of bins as required; • Daily visual inspections of waste storage areas; • Organising, maintaining and cleaning the waste storage areas;
Environmental Management Representative (EMR)	• Approaching and establishing the local commercial reuse of materials where reuse on-site is not practical; • Establishing separate skips and recycling bins for effective waste segregation and recycling purposes; • Ensuring staff and contractors are aware of site requirements; • Provision of training of the requirements of the WMP and specific waste management strategies adopted for the development; • Contaminated waste management and approval of off-site waste transport, disposal locations and checking licensing requirements; • Arranging assessment of suspicious potentially contaminated materials, hazardous materials and liquid waste; • Monitoring, inspection and reporting requirements.
Waste Collection Contractors	• Provide a reliable and appropriate waste collection service; • Provide feedback to construction site management regarding contamination of waste streams; • Work with construction site management to customise waste systems where possible.

2.2 Monitoring and Reporting

It is recommended that the following measures be taken to improve demolition and construction waste management in future and to provide more reliable waste generation figures:

- Compare projected waste quantities with actual waste quantities produced.
- Conduct waste audits of current projects (where feasible).
- Note waste generated and disposal methods.
- Look at past waste disposal receipts.
- Record this information to help in waste estimations for future waste management plans.

Records of waste volumes recycled, reused or contractor removed are to be maintained. Additionally, dockets/receipts verifying recycling/disposal in accordance with the WMP must be kept and presented to Council or the EPA if and when required.

Daily visual inspections of waste storage areas will be undertaken by site personnel and inspection checklists/logs recorded for reporting to the Site Manager on a weekly basis or as required. These inspections will be used to identify and rectify any resource and waste management issues.

Waste audits are to be carried out by the Building Contractor to gauge the effectiveness and efficiency of waste segregation procedures and recycling/reuse initiatives. Where audits show that the above procedures are not carried out effectively, additional staff training should be undertaken and signage re-examined.

All environmental incidents are to be dealt with promptly to minimise potential impacts. An incident register must be maintained on-site at all times and should include the contact details of the 24-hour EPA Pollution line. Likely incidents to occur during the construction and demolition stage of the development may involve fuel or chemical spills, seepage or mishandling of hazardous waste, or unlicensed discharge of pollutants to environment.

2.3 Opportunities for Reuse and Recycling

There are many opportunities to reduce the volume of waste generated during demolition and construction. Adaptive reuse of building materials should be encouraged, with significant consideration given to methods of reusing or recycling materials onsite as well as sourcing used or recycled materials from elsewhere to be used on site.

The site should facilitate reuse and recycling by 'deconstruction', whereby various materials are carefully dismantled and sorted. Any unwanted reusable materials can be taken to a second-hand building centre, reducing waste disposal costs.

Materials that are individually wrapped should also be avoided where possible, with preference given for materials that can be delivered in returnable packaging such as timber pallets.

The table below gives examples of potential reuse and recycling options for the materials likely to be used/generated in construction and demolition at this development:

Table 2. Potential Reuse/Recycling Options for Construction Materials

Material	Reuse/Recycling Potential
Asphalt	Hot in-place recycling or reprocessed into Reclaimed Asphalt Pavement (RAP).
Bricks	Cleaned and/or rendered for reuse, crushed for fill, sold or provided to a recycled materials yard
Cardboard Packaging	Recycled at a paper/cardboard recycling facility
Carpet	Cleaned and reused for the same purpose, reused in landscaping or garages/sheds, recycled at an appropriate processing facility
Concrete, Masonry, Spoil	Reused on-site as fill, levelling or crushed for road base
Doors, Windows, Fittings	Reused in new or existing buildings or sent to second-hand supplier
Glass	Recycled at a glass recycling facility, aggregate for concrete production, crushed for termite barrier, reused as glazing
Green Waste (Organics)	Mulched, composted for reuse, trees chipped for use in landscaping or removed carefully and reused onsite or sold
Hardwood Beams	Reused as floorboards, fencing, furniture or sent to second-hand timber supplier
Insulation Material	Reprocessed to remove impurities and reused for the same purpose or as off-cuts, compressed for ceiling tile manufacture
Metal, Steel/Copper Pipe	Recycled at a metal recycling facility, melted into secondary materials for structural steel, roofing, piping etc. copper sold for re-use
Other Timber	Reused in formwork, ground into mulch for garden or sent to second-hand timber supplier
Plasterboard	Crushed for reuse in manufacture of new plasterboard, returned to supplier or used in landscaping
Plastics	Reused as secondary materials for playgrounds, park benches etc.
Roof Tiles	Cleaned and reused, crushed for reuse for landscaping and driveways or sold or provided to a recycled materials yard
Soil	Stockpiled onsite for reuse as fill
Synthetic & Recycled Rubber	Reused for the same purpose or reprocessed for use in manufacture/construction of safety barriers, speed humps
Topsoil	Stockpiled onsite for reuse in landscaped areas

2.4 Management of Hazardous Waste Materials

For the purpose of this report, hazardous waste materials include any waste that poses a hazard or potential harm to human health or the environment, particularly asbestos waste and asbestos containing material (ACM).

During the construction phase of the development, there must be a commitment to engage qualified and certified contractors to remove all contaminated/hazardous materials (e.g. asbestos) and dispose of all contaminated/hazardous waste at an appropriately licenced facility, where applicable.

In the event that any contaminated or hazardous materials are unexpectedly uncovered during demolition or excavation works, the Site Manager is to stop work immediately and contact the relevant hazardous waste contractor prior to further works being undertaken in the area.

The following general mitigation measures will apply:

- Contaminated material stockpiled on site will be minimised as far as possible and should be stored on HDPE liner, in a bunded location which is protected from inclement weather;
- Sediment fences should be installed around the base of stockpiles and the stockpiles should be covered. Where excavated material requires validations, samples should be taken for NATA laboratory testing as per the requirements of the contamination assessment prior to restoration works, backfilling exercises and disposal;
- Any trucks carrying contaminated materials should be securely and completely covered immediately after loading the materials (to prevent windblown emissions and spillage) and must be licensed by the NSW Environmental Protection Authority (EPA);
- Decontamination of all equipment prior to demobilisation from the site is important so that contaminated materials are not spread off-site.

2.5 Management of Excavation Waste

For the purpose of this report, excavation waste consists of any unwanted material generated from excavation activities such as a reduced level dig, site preparation and levelling and the excavation of foundations, basements, tunnels, and service trenches. This will typically consist of soil and rock.

All excavated material generated on this site may be re-used in the landscaping or used on other sites as fill material, provided no contamination is present. If sandstone is found to be present, this may be sold or incorporated into the building design.

The following measures and safeguards will apply to the development for excavated material:

- Wherever practical, excavation material will be reused as part of the development;
- Excavation material that is not natural (virgin) material will be transported to an approved landfill site or off-site recycling depot;
- A waste classification assessment of the fill material should be undertaken prior to it being acceptable for waste disposal purposes;
- Transportation routes for excavation material removed from site will be identified and used.

3 SITE SPECIFIC WASTE MANAGEMENT PROVISIONS

3.1 Demolition Waste Volumes and Management

The demolition stage of the development provides the greatest opportunity for waste minimisation and resource recovery. The first thing that should be considered is whether it is possible to reuse existing buildings or parts of buildings for the proposed use. With careful on-site sorting and storage and by staging work programs it is possible to reuse many materials, either on or off-site.

Some existing structures at this site will be demolished and a new building will be constructed. Where possible, materials will be reused, such as crushing concrete for use as clean fill. However, the majority of the components of the building will either be reused for the same purpose or disposed of offsite.

A demolition contractor will be engaged during this phase of the project. The contractor will be responsible for ensuring all demolition activities are planned and undertaken in accordance with relevant waste minimisation policies and DA requirements.

Councils sometimes provide guidelines for estimating the volumes of construction and demolition materials for a site. Since the Lane Cove DCP does not provide this information, the guidelines from Camden Council Waste Management Guidelines 2019 have been substituted.

Our client has reviewed these volumes to their satisfaction and acknowledges that volumes may be updated when more accurate data can be determined by the relevant party (e.g., contractor or quantity surveyor). Asbestos quantities will be provided in a separate hazardous waste report if required.

Table 3. Demolition Waste Conversion

Material	Volume (m3)	*Tonnes (t)	**Approx. Percentage Recovered
Green waste	27000	4050.0	80%
Bricks	204	244.8	100%
Tiles	136	136.0	100%
Concrete	343	514.5	100%
Timber	342	65.0	33%
Plasterboard	276	55.2	50%
Metals	242	121.0	100%
Asbestos	TBD	TBD	0%
Other waste	40	12.0	0%
	Total	5,198.5	

*The conversion of materials from volume to tonnes is based on the information provided in a consultation paper published by WA Department of Water and Environmental Regulation <https://www.der.wa.gov.au/images/documents/our-work/consultation/current-consultation/Consultation%20Sheet%20-Approved%20method%20for%20recyclers.pdf>

**The percentage of recycled demolition waste is estimated by BINGO and is based on the average quantities of materials received and recovered at their facilities.

The table below illustrates how the demolition materials will be managed, and estimates percentage of materials diverted from landfill.

Table 4. Demolition Waste Management

			How Waste will be Managed			
Type of Material	**Less than 10m³**	**Total Estimated Tonnage**	**Reuse On-Site**	**Recycle**	**Landfill**	**Estimated Tonnage Diverted from Landfill**
Green Waste	☐	4050.0	☐	☒	☒	3240.0
Bricks	☐	244.8	☐	☒	☐	244.8
Tiles	☐	136.0	☐	☒	☐	136.0
Concrete	☐	514.5	☐	☒	☐	514.5
Timber (untreated)	☐	65	☐	☒	☒	21.45
Plasterboard	☐	55.2	☐	☒	☒	27.6
Metals	☐	121.0	☐	☒	☐	121.0
Asbestos	☐	TBD	☐	☐	☒	0.0
Other Waste	☐	12.0	☐	☐	☒	0.0
Total		5198.5				4305.3
Total Diversion of Waste from Landfill (Minimum 80%)						**82.8%**

Note: due to the estimated factors involved with calculating the percentage of material diverted from landfill, the number of significant figures shown in the table above does not exceed the tenth decimal place. Therefore, some diversion rates may appear to have no value (e.g. 0.0%) even though some amount may exist.

3.2 Construction Waste Volumes and Management

Waste generated during the construction stage of the development will be managed by the principal contractor and sub-contractors, with materials being reused and recycled wherever possible. Where neither reuse nor recycling are possible, waste will be disposed of as general waste at a licensed landfill site.

Recyclable material generated during construction will largely consist of off-cuts and discarded bricks, timber, steel, concrete, tiles, plasterboard, and piping, as well as packaging materials.

It is important to note that source separation of waste on-site may offer cost savings when compared to the disposal of mixed waste at landfill sites. Further cost savings may be achieved through the use of reusable and recycled-content materials and by reusing materials salvaged from the demolition stage of the development.

The volumes of construction materials in the following table are sourced from estimates outlined in the Camden Council Waste Management Guidelines 2019, since the Lane Cove DCP does not provide this information. Our client has reviewed these volumes to their satisfaction and acknowledges that volumes may be updated when more accurate data can be determined by the relevant party (e.g., contractor or quantity surveyor).

Table 5. Construction Waste Conversion

Material	Volume (m3)	*Tonnes (t)	**Approx. Percentage Recovered
Excavation Material	30000	30000.0	99.8%
Bricks	1163	1394.4	100%
Tiles	260	260.0	100%
Concrete	2159	3237.1	100%
Timber	499	94.6	33%
Plasterboard	398	79.7	50%
Metals	598	298.8	100%
Other waste	4316	1294.8	0%
	Total	36,659.4	

*The conversion of materials from volume to tonnes is based on the information provided in a consultation paper published by WA Department of Water and Environmental Regulation <https://www.der.wa.gov.au/images/documents/our-work/consultation/current-consultation/Consultation%20Sheet%20-Approved%20method%20for%20recyclers.pdf>

**The percentage of recycled demolition waste is estimated by BINGO and is based on the average quantities of materials received and recovered at their facilities.

The table below illustrates how the construction materials will be managed, and estimates percentage of materials diverted from landfill.

Table 6. Construction Waste Management

			How Waste will be Managed			
Type of Material	**Less than 10m³**	**Total Estimated Tonnage**	**Reuse On-Site**	**Recycle**	**Landfill**	**Estimated Tonnage Diverted from Landfill**
Excavation Material	☐	30000.0	☒	☒	☐	29925.0
Bricks	☐	1394.4	☐	☒	☐	1394.4
Tiles	☐	260.0	☐	☒	☒	260.0
Concrete	☐	3237.1	☐	☒	☐	3237.1
Timber	☐	94.6	☐	☒	☒	31.22
Plasterboard	☐	79.7	☐	☒	☒	39.85
Metals	☐	298.8	☐	☒	☐	298.8
Other Waste	☐	1294.8	☐	☐	☒	0.0
Total		36,659.4				35186.3
Total Diversion of Waste from Landfill (Minimum 80%)						**96%**

Note: due to the estimated factors involved with calculating the percentage of material diverted from landfill, the number of significant figures shown in the table above does not exceed the tenth decimal place. Therefore, some diversion rates may appear to have no value (e.g. 0.0%) even though some amount may exist.

3.3 Recycling Directory

Construction and demolition materials removed from site will need to be managed in accordance with the provisions of current legislation and may include segregation by material type classification in accordance with NSW EPA (2014) *Waste Classification Guidelines, Part 1: Classifying Waste* and disposal at facilities appropriately licensed to receive the particular materials.

Please find the below recommendations for recycling drop off locations for all materials likely to be generated at this development. Only the nearest locations are provided. See www.businessrecycling.com.au for additional locations:

Excavation Material

Business Name	Suburb	State	Postcode	Distance (km)
BINGO Recycling Centre	Artarmon	NSW	2064	2.1
SUEZ Resource Recovery Centre	North Ryde	NSW	2113	4.4

Bricks

Business Name	Suburb	State	Postcode	Distance (km)
BINGO Recycling Centre	Artarmon	NSW	2064	2.1
SUEZ Resource Recovery Centre	North Ryde	NSW	2113	4.4

Tiles

Business Name	Suburb	State	Postcode	Distance (km)
BINGO Recycling Centre	Artarmon	NSW	2064	2.1
SUEZ Resource Recovery Centre	North Ryde	NSW	2113	4.4

Concrete

Business Name	Suburb	State	Postcode	Distance (km)
SUEZ Resource Recovery Centre	North Ryde	NSW	2113	4.4
AE Biggs	Oxford Falls	NSW	2100	9.1
Kimbriki Resource Recovery Centre	Ingleside	NSW	2101	12.6

Timber (untreated)

Business Name	Suburb	State	Postcode	Distance (km)
BINGO Recycling Centre	Artarmon	NSW	2064	2.1
SUEZ Resource Recovery Centre	North Ryde	NSW	2113	4.4

Plasterboard

Business Name	Suburb	State	Postcode	Distance (km)
BINGO Recycling Centre	Artarmon	NSW	2064	2.1
AE Biggs	Oxford Falls	NSW	2100	9.1

Metals

Business Name	Suburb	State	Postcode	Distance (km)
SMS Municipal Services	Brookvale	NSW	2780	1.4
BINGO Recycling Centre	Artarmon	NSW	2064	2.1
SUEZ Resource Recovery Centre	North Ryde	NSW	2113	4.4

Asbestos

Business Name	Suburb	State	Postcode	Distance (km)
Kimbriki Resource Recovery Centre	Ingleside	NSW	2101	12.6

3.4 Site-Specific Operational Measures

Training/Site Inductions

All staff employed during the demolition and construction stages of the development must undertake site-specific induction training regarding the procedures for waste management. Employees of the head contractor will undertake a specific induction outlining their duties and how they are to enforce the waste management procedures.

Induction training will include the following at a minimum:

- Legal obligations;
- Emergency response procedures on site;
- Waste storage locations and separation of waste;
- Litter management in transit and on site;
- The implications of poor waste management practices;
- Correct use of general-purpose spill kits;
- Responsibility and reporting (including identification of personnel responsible for waste management and individual responsibilities).

Materials Selection and Ordering

- Selection of all materials will be undertaken by architectural designers;
- Prefabrication of materials off-site where possible;
- Materials requirements are to be accurately calculated to minimise waste from over-ordering;
- Materials ordering process is to aim at minimisation of materials packaging;
- Material Safety Data Sheets (MSDS) are to accompany all materials delivered to site, where required, to ensure that safe handling and storage procedures are implemented.

Waste Avoidance Opportunities

- Limiting unnecessary excavation;
- Selection of construction materials taking into consideration to their long lifespan and potential for reuse;
- Ordering materials to size and ordering pre-cut and prefabricated materials;
- Reuse of formwork;
- Planned work staging;
- Use of naturally ventilating buildings to reduce ductwork;
- Reducing packaging waste on-site by returning packaging to suppliers where possible, purchasing in bulk and requesting cardboard or metal drums rather than plastics;
- Requesting metal straps rather than shrink wrap and using returnable packaging such as pallets and reels;
- Reduction of PVC use;
- Use of low VOC (volatile organic compounds) paints, floor coverings and adhesives;
- Use of fittings and furnishings that have been recycled or incorporate recycled materials;
- the use of building materials, fittings and furnishings with consideration to their longevity, adaptation, disassembly, reuse and recycling potential.

Site Procedures

- Excavated materials will be used onsite where possible;
- Green waste will be mulched and reused in landscaping either onsite or offsite;
- Concrete, tiles and bricks will be reused or recycled offsite;
- Steel will be recycled offsite; all other metals will be recycled where economically viable;
- Framing timber will be reused on-site or recycled off-site;

- Windows, doors and joinery will be recycled off-site where possible;
- Plumbing, fittings and joinery will be recycled off-site where possible;
- Plasterboard will be re-used in landscaping on-site or returned to the supplier for recycling where possible;
- All used crates will be stored for reuse unless damaged;
- All glass that can be economically recycling will be;
- All solid waste timber, brick, concrete, rock, plasterboard and other materials that cannot be reused or recycled will be taken to an appropriate facility for treatment to recover further resources or for disposal to landfill in an approved manner;
- All asbestos, hazardous and/or intractable wastes are to be disposed of in accordance with WorkCover Authority and EPA requirements;
- Provision for the collection of batteries, fluorescent tubes, smoke detectors and other recyclable resources will be provided on site;
- Beverage container recycling will be provided on-site for employee use;
- All waste and recycling will be disposed of via Council-approved systems.

Pollution Prevention

Site staff/contractors shall be responsible for the following to minimise dispersion of site litter and prevent stormwater pollution to avoid impact to the environment and local amenity:

- Promoting adequate waste disposal into the bins
- Prevent overfilling of bins and keeping lids closed if applicable
- Lightweight materials such as wrapping, insulation, soil, etc. must be fully enclosed
- Taking action to prevent dumping or unauthorised use of waste areas
- Require collection contractor/s to clean up any spillage when clearing bins

3.5 Location and Design of Waste Management Facilities

General Requirements

All waste management facilities onsite should:

- Be conveniently located to enable easy access for on-site movement and collection;
- Be incorporated with other loading/unloading facilities;
- Have sufficient space for the quantity of waste generated and careful source separation of recyclable materials;
- Have sufficient space to contain any on-site treatment facilities, such as compaction equipment;
- Have adequate weather protection and, where required, be enclosed or undercover;
- Be secure and lockable;
- Be well-ventilated and drained to the sewer;
- Be clearly sign-marked to ensure appropriate use.

Waste and Recycling Receptacles

A sufficient quantity of skip bins should be provided for the separate storage of each type of C&D material generated on site. This will assist in maximising source separation and resource recovery, while reducing the costs and quantity of materials disposed of at landfill.

The size of the receptacles should be appropriate to the nature of waste generated and the available storage area. In general, the following options would be acceptable:

Bin Size	Access	Dimensions
2.5m	Top loading	
3m	Drop door walk-in	
4m	Drop door walk-in	
5m	Drop door walk-in	
6m	Double doors walk-in	

Source: Aussie Bins

On-site source separation of materials is best practice waste management. Dedicated skips for the following materials are recommended:

- Timber;
- Plasterboard;
- Concrete;
- Bricks;
- Scrap metal;
- General waste.

Separate receptacles for the safe disposal of hazardous waste types (i.e. light bulbs, batteries, etc) will also be provided where applicable. Where possible, additional bins will be provided in common areas for the collection of commingled recyclables such as beverage containers (glass, plastic, aluminium), paper products, recyclables food containers, etc. Specialised bins for cigarette butts should also be provided.

Safety and Signage

The following safety measures should be considered for the waste storage area:

- Location should not interfere with sight lines of drivers entering or leaving the site;
- Skip bins should be clearly visible and located in well-lit areas;
- Safe paths of travel should be designated using reflective tape, barriers and cones;
- Skip bins must be secured and must not be over-filled to reduce risk of injury through bins moving and falling objects.

Standard signage will be installed in all waste areas, with all skip bins colour coded and labelled appropriately on all sides to allow clear identification of the type of waste to be deposited into each bin.

Refer to the EPA's website for standard construction waste and recycling signs:

www.epa.nsw.gov.au/wastetools/signs-posters-symbols.htm

Space and Siting Requirements

The waste storage area will be located near the site entrance to enable access and allow sufficient space for the required skip bins and servicing requirements. The storage area will also be flexible in order to cater for change of use throughout demolition and construction works.

Where space is restricted, dedicated stockpile areas will be allocated onsite, with regular transfers to the dedicated skip bins for sorting and collections.

The position of the designated waste holding area onsite may change according to building works and the progression of the development. Access, visual amenity and WHS will always be integral to the selection of waste storage area locations. Any stockpile locations will take into account slope and drainage factors to avoid contamination of stormwater drains during rain events.

Servicing and Transport

The frequency of waste removal from site will be determined by the volume of materials deposited into the dedicated skip bins. Skip bins will be monitored on a daily basis by the Construction Site Manager to ensure they do not overflow. If skip bins are reaching capacity, removal and replacement should be organised for within 24 hours.

All skip bins leaving the site will be covered with a suitable tarpaulin to reduce spillage of waste while in transit.

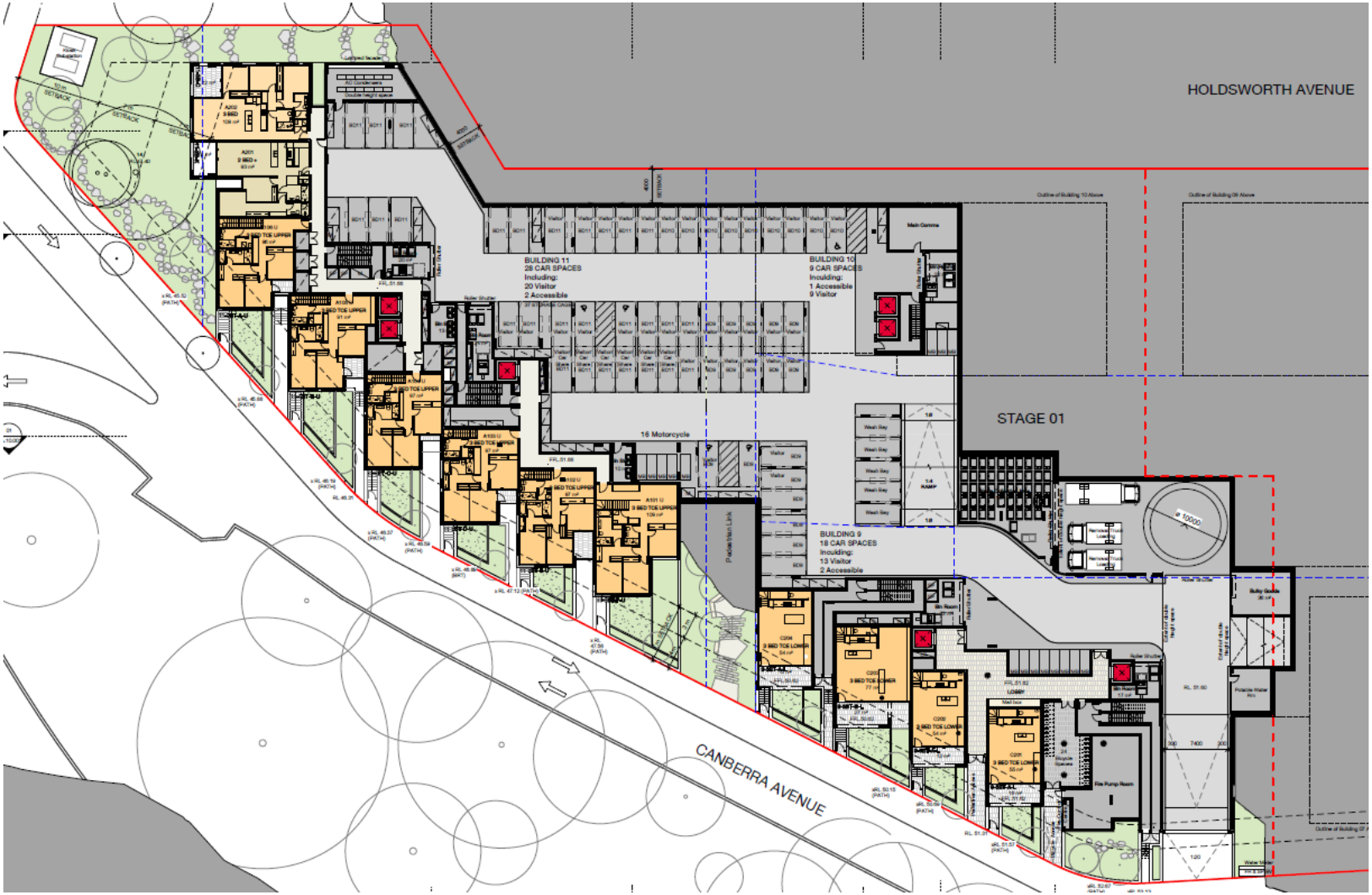
All waste collection for construction works will be conducted between approved hours as per Council requirements (typically between 7am and 6pm Monday to Friday, and between 7am and 1pm on Saturdays). All waste generated on site will be transported to an approved and appropriately licensed resource recovery facility and/or landfill site.

3.6 EXISTING SITE

= sample location of skip bins *(*not to scale)*

3.7 PROPOSED DEVELOPMENT: LEVEL 2 FLOOR PLAN

Dwg No. DA.02.002, Rev. 8, 28/05/2021



3.8 PROPOSED DEVELOPMENT: LEVEL 1 FLOOR PLAN

Dwg No. DA.02.003, Rev. 8, 28/05/2021