



LOKA CONSULTING ENGINEERS PTY LTD

OFFICE: 14A, 8 AVENUE OF THE AMERICAS, NEWINGTON, NSW 2127

PHONE: 02 8065 9689

FAX: 02 8065 9690

MOBILE: 0404 142 063

EMAIL: info@lceng.com.au

WEB: www.Lceng.com.au

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Waste Management Plan for **14 South Steyne, Manly NSW**

Prepared by

LOKA CONSULTING ENGINEERS PTY LTD

Nermein Loka

BSC, ME, MIE (AUST), CPEng, NPER, RPEQ, APEC, IPEA

Senior Civil Engineer

Accredited Certifier

Director

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1. Introduction

Loka Consulting Engineers Pty Ltd has been engaged by Building Studio Pty Ltd to provide a Waste Management Plan for the development at 14 South Steyne Manly, NSW located within Northern Beaches Council (refer to Figure 1.1 and Figure 1.2).

A waste management plan and report are required for the proposed development to support the design during demolition, construction and service conditions, along with achieving the objectives to promote sustainable operation of the development. The development achieves the waste management objectives set out in the council codes as well as any statutory requirements. The details which will be addressed include:

- a description of the site and details of the development proposal;
- reuse, recycling and disposal of materials during demolition, construction and service conditions;
- a review of the design features of the proposed waste management system for compliance with relevant codes, standards and regulations; and
- identification of procedures for on-going waste management.

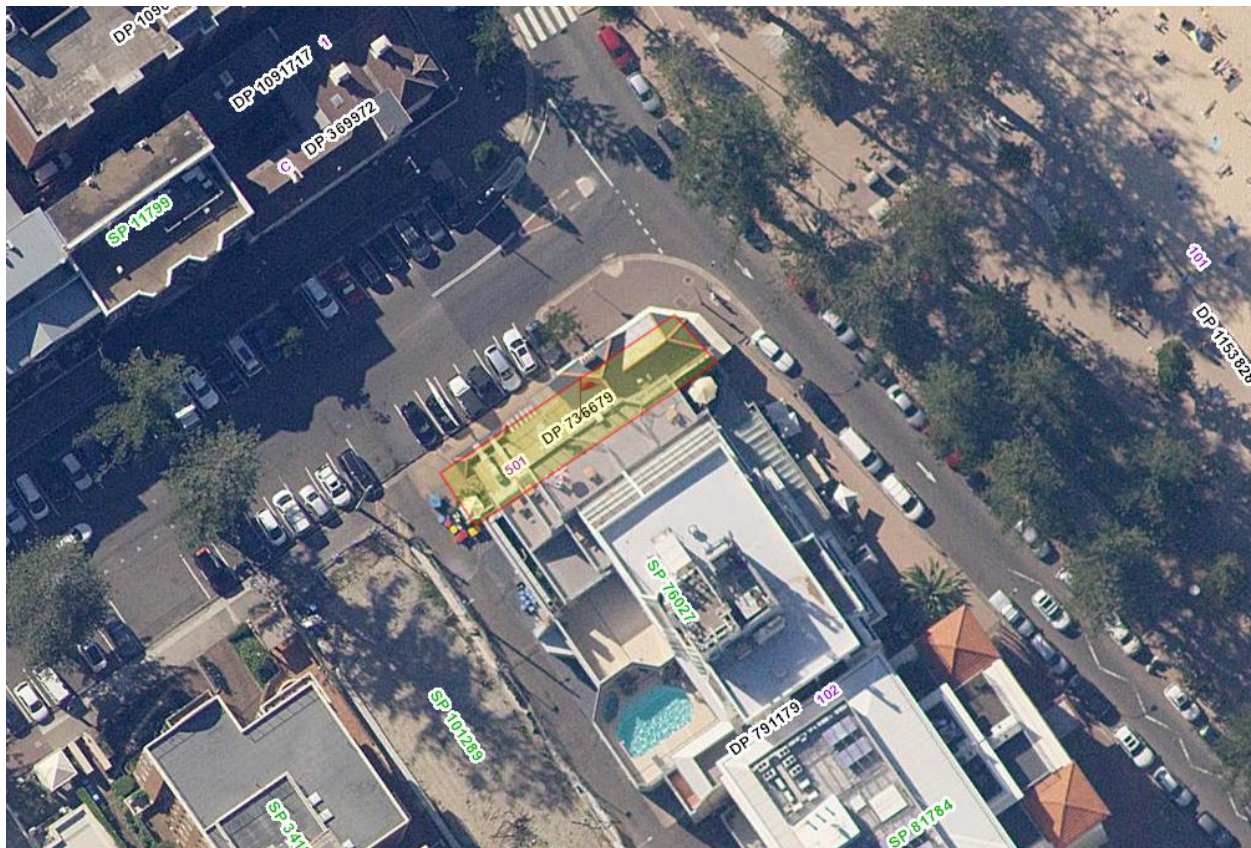


Figure 1.1: Subject site (Source: SIX Maps)

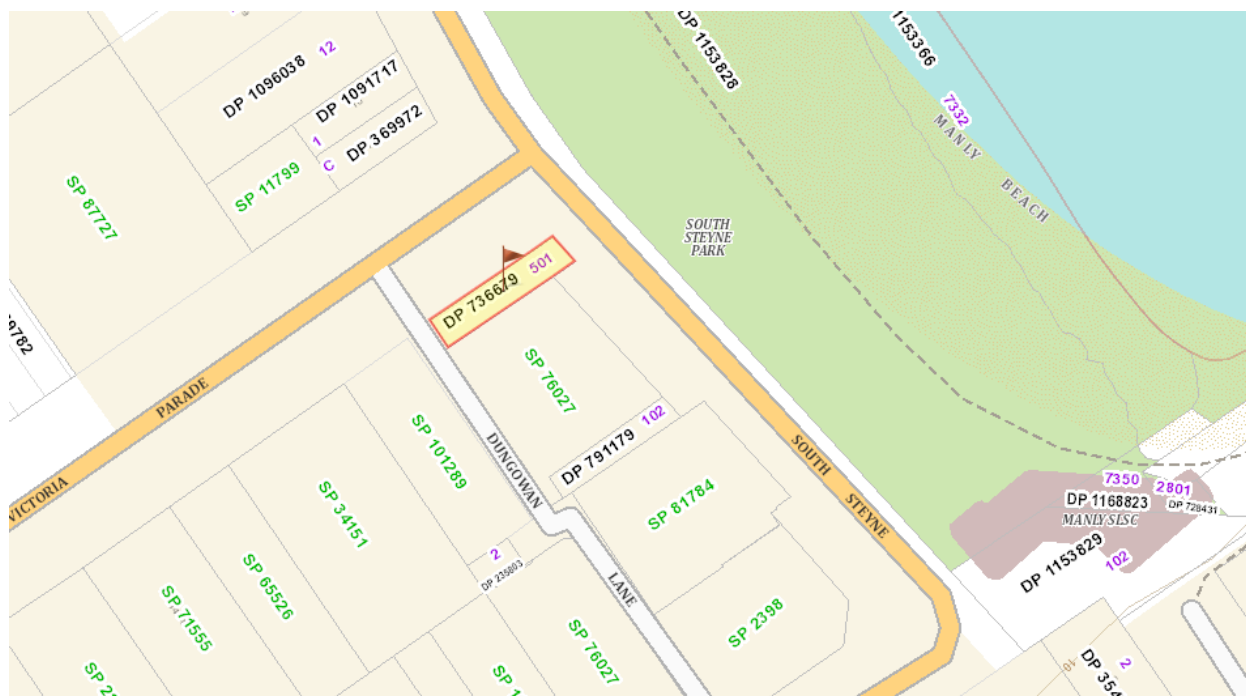


Figure 1.2: Site location (Source: SIX Maps)

2. Property Description

The proposed project is a renovation of a heritage listed building that has been used for a restaurant/ bar/ café within a site area of 175.5 m².

The proposed development is bounded by:

- South Steyne road on the East
- Dungowan lane on the West
- Victoria Parade on the North
- The Sebel Sydney Manly Beach hotel (8/13 South Steyne) on the South

3. Project Proposal

Waste storage and transportation will be managed during demolition and construction stages as well as in service conditions. Waste produced from these stages will be reused or recycled as appropriate, or disposed using certified waste collection contractors.

The management of waste during service conditions of the development will involve the restaurant/café/bar manager or staff maintaining Waste Storage and Recycling Area located on site, with the collection of general waste and recycling primarily involving the private contractor. It is proposed that a total of **2 x 660L** garbage bins and **2 x 660L** recycling bins are provided.

The restaurant/café/bar manager or staff is responsible for opening and closing the roller door of bin room to take out the bins for private waste service contractor's collection and put the bins back.

4. Demolition

Materials from the demolition stage shall be reused, recycled or disposed in accordance with the provisions outlined in this WMP and the requirements of the Protection of the Environment Operations (Waste) Regulation 2014.

Where possible, waste materials should be managed so most materials will be reused or recycled, with only a small proportion of waste going to landfill.

Prior to any demolition works, a suitably qualified inspector shall conduct inspection of asbestos construction materials (ACMs) on the existing structures to be demolished. The inspector shall certify to council in writing if the asbestos materials are less than 10m². If more than 10m², a licensed asbestos remover shall conduct the asbestos removal and tipping. In the latter case, the name, address and asbestos license number of the remover, as well as the name and address of the licensed landfill where all asbestos will be taken shall be informed to the council. All records covering the transport and tipping of any asbestos construction materials or any asbestos contaminated materials must be maintained on site for the inspection of a Council officer or other Principal Certifying Authority.

Asbestos-contaminated soils must be wetted down. All asbestos waste must be transported in a part of the vehicle that is covered and leak-proof; and disposed of at a landfill site that can lawfully receive it. The project manager will ensure a unique consignment number is created and report to EPA using WasteLocate if over 100 kilograms or 10 square meters of asbestos is being disposed of. No asbestos waste is disposed to general waste or recycle bin; or reuse, recycle or illegally dumped.

4.1 Managing Materials from Demolition

Table 1 below details the amount of material that is estimated to be produced from the demolition stage, as well as the planned reuse, recycling or disposal plans.

Table 1: Management of demolition materials

Materials on-site		Reuse and recycling		
Type of Material	Estimated volume (m ³) or area (m ²) or weight (t)	On-site How materials will be reused or recycled on-site	Off-site Contractor and recycling outlet	Disposal Contractor and landfill site

Timber	5 m3	Reuse for formwork, landscaping, shoring	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Greenwood Landfill 447 Mona Vale Rd, St. Ives NSW 2075
Concrete	2 m3	N/A	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Greenwood Landfill 447 Mona Vale Rd, St. Ives NSW 2075
Bricks/Pavers	2 m3	Clean & reuse for landscaping, bricks in good condition used for internal wall	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Null to landfill
Roof tiles	5 m3	Break up and use as fill, aggregate	Brown Bros. Skip Bins 6 Polo Ave, Mona Vale NSW 2103	Null to landfill
Plasterboard	2 m3	Break up and use in landscaping	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Greenwood Landfill 447 Mona Vale Rd, St. Ives NSW 2075
Metal	1 m3	N/A	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Greenwood Landfill 447 Mona Vale Rd, St. Ives NSW 2075

4.3 Site Operation and Management

The site operation will be managed to reduce waste creation and maximise reuse and recycling by setting waste management requirements in contracts with sub-contractors, on-going checks by supervisors on site and the use of clear signage at designated waste areas.

In addition, the project team leader will:

- Liaise with contractors to identify areas where they can reduce waste and reuse materials in their respective trades
- Meet local, state and federal waste minimisation legislation and environmental standards
- Prevent pollution and damage to the environment
- Protect the safety and health of our employees and the public

Waste will be separated and stored onsite for reuse and recycling through maintaining separate areas for sorted wastes with one area for recyclables and another area for waste going to landfill. Utilising selective deconstruction rather than straight demolition will ensure that good quality material can be reused or recycled.

5. Construction

Materials that are not used in the construction stage shall be reused, recycled or disposed in accordance with the provisions outlined in this WMP and the requirements of the Protection of the Environment Operations (Waste) Regulation 2014.

Where possible, waste materials should be managed so most materials will be reused or recycled, with only a small proportion of waste going to landfill.

5.1 Managing Waste Materials from Construction

Table 2 below details the amount of waste material that is estimated to be produced from the construction stage, as well as the planned reuse, recycling or disposal plans.

Table 2: Management of waste construction materials

Waste Materials on-site		Reuse and recycling		
Type of Material	Estimated on-site waste of material ordered	On-site How materials will be reused or recycled on-site	Off-site Contractor and recycling outlet	Disposal Contractor and landfill site
Timber	5-7%	N/A	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Greenwood Landfill 447 Mona Vale Rd, St. Ives NSW 2075
Concrete	2-3%	N/A	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Nil to landfill
Bricks/Pavers	2-3%	Clean & reuse for landscaping, bricks in good condition used for internal walls	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Nil to landfill
Plasterboard	5 – 15%	Break up and use in landscaping	Kimbriki Resource Recovery Centre Kimbriki Rd, Ingleside NSW 2084	Greenwood Landfill 447 Mona Vale Rd, St. Ives NSW 2075
Tiles	2 -5%	N/A	Kimbriki Resource Recovery Centre	Nil to landfill

			Kimbriki Rd, Ingleside NSW 2084	
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5.2 Construction Design and Management

Waste avoidance has been incorporated into the design by incorporating as much detail as possible within the design, and using pre-fabricated materials to ensure a reduction in waste generated on-site. Materials purchased will be checked against previously known quantities required to build similar projects, and adjusted as construction progresses for this particular project. Reduction in waste can also be achieved through the reuse of building materials in good condition from the demolition phase.

6. Management of On-going Waste

6.1 Design Requirements

6.1.1 Waste production and storage per unit

According to “Better Practice Guide for Commercial Waste”, estimated commercial and retail waste generation rates have been given in Table 3 below:

Table 3: Estimated commercial and retail waste generation rates

Type of premise	Average Litre per 100 m ² per day	
	Waste	Recycling
Restaurants	190	190

There are two levels in this restaurant/bar/café. The area of ground level is 133 m² and the area of first level is 137 m². Hence, the total area is 270 m². With the total area and estimated waste generation from table 4, a total generation rate for both waste and recycling is calculated and tabulated below:

Table 4: Calculations for waste/recycling generation

Types of premise	Average Litre per 100 m ² per day		Total Floor Space (m ²)	Waste generate per week (L)	Recycling generate per week (L)
	Waste	Recycling			
Restaurant (Food & Drinks premise)	190	190	270	3591.0	3591.0

6.1.2 Collection frequency and bins required

To service the generation of waste/recycling expected from the proposed development, the following number of bins and frequency of collection is outlined in the Table 5 below.

Table 5: Waste collection service requirements

	Waste generated per week (L)	Recycling generated per week (L)	Waste bin to be provided	Recycling bin to be provided	Collection frequency
Restaurant/bar/cafe	3591L	3591L	2 × 660 L	2 × 660 L	thrice a week

6.2 Design Detail

6.2.1 Overall waste and recycling storage and servicing within the complex

Waste service will be provided by a private contractor. The wastes will be stored in a waste store room (refer to figure 6.2 and 6.3).

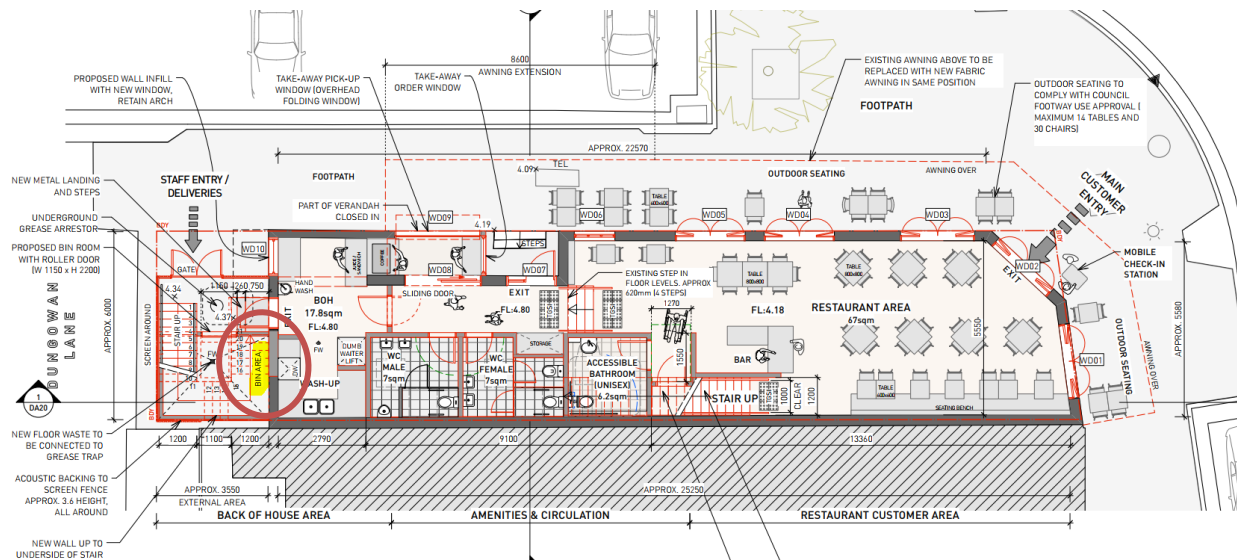


Figure 6.2 Waste storage room location

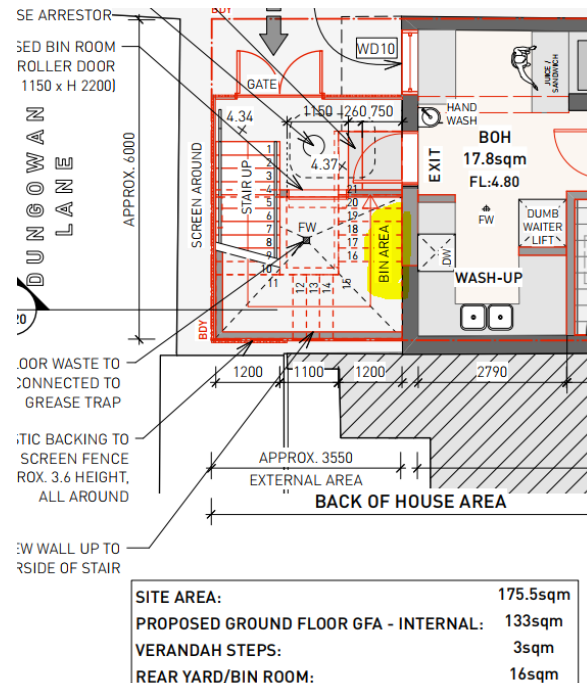


Figure 6.3 Zoomed view of Waste storage room location

The bin location and roller door of the waste store room is shown in the figure below:



Figure 6.4 Bin room with roller door

6.3 Further Design Requirements

According to Manly Development Control Plan 2013 – Amendment 4, “Council does not provide a waste collection service for commercial developments. It is recommended that private waste contractors are consulted early in the development process to ensure that garbage storage areas are adequately designed.”

Other design details that will be required as per Council DCP and other relevant regulations are listed below:

- In this respect, the storage facility must be screened from the street frontage in a manner that improves the streetscape appearance of the facility.
- Business operating from the premises must engage a contractor to collect their and recycling separately.
- Consider providing alternatives to plastic bags for the purpose of carrying items purchased from the premises.
- All commercial premises should investigate opportunities to compost food waste wherever practicable.

6.4 On-going Waste Management

The restaurant/café/bar manager or staff is responsible for opening the bin room door and taking out the bins for private contractor's collection and clean the waste area at a regular interval of once a week.

The restaurant staffs must bag their waste before depositing into waste bins; however, recycling must not be bagged.

Signage and written information will be provided, so the staffs are aware of how to use and manage the waste and recycling services.

Appendix A – Signage used in waste storage areas



Appendix B –Indicative Bin Sizes

Bin Receptacle	Length (mm)	Width (mm)	Height (mm)	Bin Footprint (m2/bin)
140L	640	535	920	0.27
240L	730	580	1060	0.42
360L	865	650	1100	0.42
660L	1420	780	1210	1.16
1100L	1420	1100	1270	1.71
1m3	1740	1100	1100	0.99
1.5m3	2040	1250	1220	1.46
3m3	2040	1650	1590	2.10
4.5m3	2040	1995	1830	3.20