



CIVIL ENGINEERING REPORT:
WASTE MANAGEMENT PLAN

Hospital Facility Development Wagga Wagga

PREPARED FOR
Innovation Property Trust
The Riverina Clinic

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Waste Management Plan

Revision Schedule

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Northrop Consulting Engineers Pty Ltd

ACN 064 775 088 | ABN 81 094 433 100

SAP House, Level 6, 224 Bunda Street (PO Box 213), Canberra ACT 2608

02 6285 1822 | canberra@northrop.com.au | www.northrop.com.au

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1. Introduction

1.1 Purpose of Report

Northrop Consulting Engineers (NCE) has been engaged by Innovation Property Trust to prepare a Waste Management Plan on the proposed redevelopment of 336 – 344 Edward Street, Wagga Wagga. For the purpose of this plan, the redevelopment is also referred to as The Riverina Clinic throughout this plan.

The redevelopment will include demolition of the existing single dwellings at 336 – 344 Edward Street, Wagga Wagga and construction of a mental health hospital and outpatient facility. The development is proposed to include the main building, landscaped areas and on – site parking.

1.2 Study Objectives

This Waste Statement is to detail the following which has been based on the architectural drawing DA_TRC_A-100_P6 dated 03/07/2020 by Daryl Jackson Alistair Swain (DJAS):

- Proposed at-source waste separation program and facilities for aluminium, steel, glass, plastics, food and organic waste, etc
- Proposed recycling collection from hotel, guest house, entertainment, commercial and industrial premises;
- Domestic food and organic waste composting;
- Litter control program (for activities such as take-away food, sporting venues, etc);
- Proposed waste storage areas for both construction and operational waste;
- Building and demolition waste re-use, recycling or disposal;
- Arrangements for hazardous building wastes such as asbestos and contaminated soil.

1.3 Limitations

This report has been based upon the architectural drawing DA_TRC_A-100_P8 dated 03/07/2020 by DJAS. Construction and operational waste separation, treatment, generation and collection may differ from this report and should be assessed at each phase for the life cycle of the project by the contractor and/or relevant project parties.

1.4 References

In preparing this report, reference has been made to the following:

- The City of Wagga Wagga website (accessed 02/03/2020);
- Other documents as referenced in this report.

2.2 Development Locality

The proposed development is located at 336 – 344 Edwards Street, Wagga Wagga. Figure 2 shows the development locality.



Figure 2 Development Locality

The development is bound by:

- Edward Street to the North;
- Cullen Road to the West;
- 57 – 65 Gormly Avenue to the South; and
- 334 Edward Street to the East.

2.3 Development Description

The proposed development is to include a mental health hospital and outpatient facility with:

- Bedrooms for 12 inpatients;
- An indoor exercise room for patients;
- A treatment room for patients;
- Consultation and interview rooms;
- Meeting rooms;
- Office space;
- Ancillary areas; and
- Off street parking.

3. Existing Conditions

3.1 Existing Development

336 – 344 Edward Street – at the time of this study – contains single dwelling residential houses.

The houses at 338, 340, 342 and 344 Edward Street had driveways which fronted Edward Street.

The house at 344 Edward Street had a driveway which connected the house to Cullen Street (noting the house is on the corner of Edward Street and Cullen Road).

3.2 Existing Waste

Each dwelling is responsible for its own waste generation. During site observations on 17 – 18/02/2020, it was noted dwellings had mobile garbage bins (MGB) along Edward Street for collection as per Figure 3.



Figure 3 MGBs Along Edward Street

This is consistent with the City of Wagga Wagga Waste Services for residential properties as per the website accessed 02/03/2020.

4. Waste Analysis

4.1 Proposed at-Source Waste Separation Program and Facilities

Waste separation can reduce environmental pollution and land fill, and identify products which can be recycled and re-used for other purposes.

4.1.1 Operation of the New Facility

During the operation of the proposed facility, at source waste separation should be completed.

The waste separation should include – at a minimum – separation of general waste, recycling and food organics and garden organics. The City of Wagga Wagga Council provide a commercial collection service which would pick up the aforementioned streams of waste. Additional waste streams could be explored by the management of the facility during operation.

As part of this Waste Management Plan, it is proposed that the minimum waste streams of general waste, recycling and food organics and garden organics be utilised for the operation of this development.

Management would need to educate employees, inpatients, outpatients and visitors of the waste separation methods. This could be complete through an induction, signage or other methods deemed suitable by management.

Management will need to monitor the effectiveness of the waste separation and make changes as necessary should improvements be required.

4.2 Proposed Recycling Collection

4.2.1 Operation of the New Facility

During the operation of the new facility, management will need to organise collection of the recycling.

Kerbside collection is suitable for MGBs, however if a recycling hopper is to be considered, collection within the property boundary of the waste would be required unless approved by the City of Wagga Wagga Council.

Management are to assess whether there is a suitable quantity of recycling storage proposed as per this report and increase or decrease collection frequency as required and agreed with the City of Wagga Wagga Council.

4.3 Domestic Food and Organic Waste Composting

The City of Wagga Wagga Council provides Green Bins which are for food organics and garden organics.

Food organics and garden organics include:

- All food waste and scraps;
- Meat, bones, seafood, prawn shells, oyster shells;
- Fruit and vegetable peels;
- Bread, cake and pastries;
- Tea bags and coffee grounds;
- Eggs and dairy;
- Shredded paper, paper towel, newspaper, pizza boxes and serviettes;

- Weeds;
- Grass clippings, flowers and pruning;
- Leaves; and
- Small sticks.

It is recommended to use the supplied compostable liner to store foods in the freezer that may produce odours prior to placing them in the bin for collection.

Management will need to monitor what is placed into the green bins to ensure that no cross contamination is present.

Management would need to educate employees, inpatients, outpatients and visitors of the waste separation methods. This could be complete through an induction, signage or other methods deemed suitable by management.

Management will need to monitor the effectiveness of the green bins and make changes as necessary should improvements be required.

4.4 Litter Control Program

Given the nature of a mental health hospital and outpatient facility, it is not anticipated to have litter produced from the employees, inpatients, outpatients or visitors which would have a major impact to the streetscape of Edward Street.

Management will need to ensure the general grounds are kept tidy on a regular basis including removal of litter from street faces of the development.

4.5 Proposed Waste Storage Areas

4.5.1 Operation of the New Facility

4.5.1.1 Waste Storage Outside of the Main Building

As part of this Waste Statement, the proposed waste generation has been based upon architectural drawing DA_TRC_A-100_P8 dated 03/07/2020 by DJAS.

Noting the City of Wagga Wagga Council does not have waste generation rates as part of their DCP, rates have been adopted from:

- ACT Government Development Control Code for Best Practice Waste Management in the ACT 2019¹;
- Randwick City Council Appendix A – Waste Generation Rates²; and
- City of Melbourne Specialised Waste Generation Rate³.

The ACT Government Code has been used for bedrooms and office as both areas are inland communities sharing closer aligning attributes than that of a major coastal city.

The Randwick City Council and City of Melbourne rates have been used due to the availability of specific prescribed generation rates.

For the purpose of this analysis, Table 1 shows the total proposed waste generation for the development including the area of each type of waste generating space. The facility is assumed to operate at full capacity 7 days per week which would be considered conservative. It is noted there are no rates for food organics and garden organics and therefore an allowance of 50% of general waste has been allowed for as per the City of Wagga Wagga website.

The description of “office” as per Table 1 includes only:

- Offices;
- Reception;
- Staff areas; and
- Consultation space.

If it assumed the meeting rooms will not generate additional waste beyond that of the office space.

Table 1 Waste Generation

Description	Generation Rate for Waste	Waste Generated / Week	Generation Rate for Recycling	Recycling Generated / Week
Bedroom ₁	60L / occupant / week	720.00	20L / occupant / week	240.00
Medical ₂	20L / 100m ² / day	103.60	10L / 100m ² / day	51.80
Office	20L / 100m ² / day	292.60	25L / 100m ² / day	365.75
Gym	10L / 100m ² / day	15.40	10L / 100m ² / day	15.40

This would result in 1,131.60L per week in waste, 672.95L per week in recycling and 565.8L per week in food organics and garden organics.

It is noted that medical waste has not been listed and will need to be determined by management. Additional waste generated for gardening beyond that included in Table 1 will need to be determined by the end user.

For the purpose of this Waste Management Plan, we have assumed there will only be 240L MGB's for the waste, recycling and food organics and garden organics noting this is an available size for commercial premises as per the City of Wagga Wagga Council website.

Table 2 lists the number of bins required for each waste stream based upon a once a week collection frequency for waste and food organics and garden organics and once a fortnight collection for recycling.

Table 2 Number of Bins Required

Description	Collection Frequency	Waste Generated prior to Collection	Number of Bins Required
Waste	Weekly	1,131.60L per week	5
Recycling	Fortnightly	1,345.9L per fortnight	6
Food organics and garden organics	Weekly	565.8L per week	3

Medical waste bins will need to be allowed for and the number of bins will need to be determined by management. The medical waste bins will need to be stored in an appropriate location as determined by management.

Architectural drawing DA_TRC_A-100_P8 illustrates 14 bins.

Noting the City of Wagga Wagga Council does not have waste enclosure layout directions, the ACT Government Development Control Code for Best Practice Waste Management in the ACT 2019 has been reviewed.

As per Section A4.5 of the aforementioned document, the MGBs should have a 50mm clearance around all faces of the bin to the next bin or obstruction.

If rows of bins are required, it is recommended to have a 1.2m wide path of travel to access bins.

It is recommended the enclosure has a roof for protection against weather elements and a tap and connection to the sewer to enable rinsing of bins as required.

4.5.1.2 Waste Storage Inside of the Main Building

As part of the management of the operation of the facility, it is recommended that at least a day's worth of waste be able to be stored within the building before being transported to the MGBs inside the main waste enclosure. This is to be distributed over separate individual bins throughout the rooms.

Bins are to be collected on a regular frequency as determined by management and be transferred to the main waste enclosure.

4.6 Building and Demolition Waste Re-use, Recycling or Disposal

During the demolition of the existing building and construction of the new facility, there will be waste generated which can either be re-used, recycled or will need to be disposed of in a responsible manner.

Prior to demolition and construction, it is advised the demolition and construction contractor/s acquire a demolition and construction waste management plan. The demolition and construction waste management plan is to cover aspects related to the waste generated during the works including however not limited to:

- The proposed amount of waste generated;
- How much of the waste can be re-used and recycled;
- How the waste can be re-used or recycled including onsite and offsite alternatives; and
- If the waste can't be re-used and recycled, how will the waste be disposed.

The demolition and construction waste management plan should be complete by a suitably qualified professional and approved by an authority prior to the commencement of works.

During the demolition and construction phase of the proposed works, at source waste separation should be completed in a suitably sized waste storage area which allows for safe collection from the site.

The waste separation could include separation of various types of metals, wood, concrete, top soil and other construction products that may be able to be recycled or re-used as part of the works.

Construction workers will need to be made aware of the waste separation procedures through the induction to the site or any other methods deemed suitable by demolition and construction management.

Recycling and re-use of the products could occur on site or off-site at an approved location.

During the demolition of the existing building and construction of the new facility, the demolition and construction contractor/s will need to organise the collection of the recycling.

Collection of this waste should occur on site in a safe location as deemed suitable by the demolition and construction contractor/s.

4.7 Arrangements for Hazardous Building Wastes such as Asbestos and Contaminated Soil

During the demolition and construction phase of the works for the proposed development, hazardous materials may be encountered. These materials may be across the properties in locations including but not limited to:

- Buried underground;
- The soil; and
- The existing dwellings including any structures not associated with the house.

Such hazardous materials that may be encountered include asbestos and contaminated soil.

It is recommended an Unexpected Finds Protocol Report be prepared by a suitable qualified individual as part of the Construction and Environmental Management Plan prior to the commencement of demolition and construction works. This Unexpected Finds Protocol Report is to be provided to or acquired by the contractor/s for the demolition and construction works. The contractor/s are to make sure that the Unexpected Finds Protocol Report is adhered to should there be any finds. The unexpected finds protocol is to include appropriate procedures for the identification, assessment, management, validation and disposal of potential contamination at the site.

The demolition/construction contractor is to adhere to requirements of the EPA as part of their works.

5. Conclusion

For the proposed development located at 336 – 344 Edward Street, it can be concluded that:

- The existing dwellings had waste collected from Edward Street;
- At source waste separation can be implemented and monitored by management on site;
- There will be 1,131.60L per week in waste, 672.95L per week in recycling and 565.8L per week in food organics and garden organics generated from the proposed development;
- The waste generated on a weekly basis will require 14 x 240L MGBs to be utilised by the development based on weekly collection frequency for waste and food organics and garden organics, and fortnightly collection for recycling;
- Prior to demolition and construction, it is advised the demolition and construction contractor/s acquire a demolition and construction waste management plan completed by a suitably qualified professional;
- It is recommended an Unexpected Finds Protocol Report be prepared by a suitable qualified individual prior to the commencement of demolition and construction works.
- The demolition/construction contractor is to adhere to requirements of the EPA as part of their works.

If you have any questions don't hesitate to contact the undersigned.

Northrop Consulting Engineers

Prepared by,



Nicholas Grinter
Civil Engineer

Reviewed by



Joey Wiltshire
Civil Engineer

Appendix A Drawings

Edward Street

Each room to have capacity for 1 day's worth of waste

Proposed Waste Collection Area

Tap and connection to sewer to be located within bin storage area

Cullen Road

Capacity for 14x240L bins

Date:	10.04.2020	Project No:	CR193049
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Title:	WASTE REPORT MARK UP		
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