



Australian Turf Club Limited

ATC Winx Stand Development S4.55 Modification

Waste management plan

April 2021

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1. Introduction

1.1 Overview

This waste management plan supports an application to modify State Significant Development Consent No. SSD 10285 dated 13 July 2020, to be submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

Australian Turf Club Limited (ATC) is seeking to modify the existing development consent for the Winx Stand (“the modification”) at the existing ATC Royal Randwick Racecourse (RRR).

This report has been prepared to provide an updated response to the Secretary’s Environmental Assessment Requirements (SEARs) issued for the original SSD Application on 26 April 2019 which included the following requirements:

7. Air quality, odour and waste

The EIS shall identify potential... waste impacts during construction of the development and include any appropriate mitigation measures.

18. Servicing and waste

The EIS shall identify, quantify and classify the likely waste streams to be generated during operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones and mechanical plant) for the site.

1.2 Background

Royal Randwick Racecourse is located in the eastern suburbs of Sydney NSW, approximately 6 km from Sydney’s CBD. It consists of the Course Proper (2224 m circumference) and the inner Kensington track (2100 m circumference).

The site is on Crown Land, zoned RE1 – Public Recreation, leased to The Australian Turf Club and is bounded by Alison Road, Wansey Road, High Street & Doncaster Ave.

1.3 Overview of the development

The Australian Turf Club is undertaking the Winx Stand development in the Leger Lawn area of the Royal Randwick Racecourse. The location of the development is shown in Figure 1.1.



Figure 1.1 Development location

The development involves the construction of the two storey multi-purpose facility at the southern end of the existing QEII Grandstand, in the Royal Randwick Spectator Precinct. The facility is designed to significantly enhance the amenity for patrons attending race day events at RRR and provide a flexible space for non-race day events. The Winx Stand comprises an approximate 3,546 sqm footprint and a maximum building height of 18 m. The development is summarised as construction of a two storey multi-purpose facility comprising:

- Multi-purpose hall at ground level of approximately 3,255 sqm gross floor area (GFA).
- Multi-purpose hall at upper level of approximately 1,788 sqm.
- Food and beverage facilities.
- Entry foyer and ancillary facilities.
- Building Identification Signage.

1.4 Overview of the proposed modification

The modification application seeks approval for alterations and additions to the approved design of the new multi-purpose facility known as the 'Winx Stand'. The proposed amendments include:

- the provision of a new external roof structure above the existing loading dock on the western elevation of the Winx Stand
- the provision of a concrete access ramp adjacent to the ground flood loading zone on the western elevation
- minor internal floor plan amendments to improve functionality
- provision of an external bar on the Level 1 terrace (track-side)
- a minor revision to the location of the QE II Stand link bridge to enhance connectivity
- revision to the materiality of the western façade to fibre cement sheeting, and
- minor increase to the lift overrun.

Overall, the proposed amendments will result in a minor reduction in GFA from 4,882 sqm to 4,813 sqm, and an increase to the maximum building height from RL46.9 to RL48.2.

1.5 Report structure

This report includes:

- Chapter 1 – Introduction
- Chapter 2 – Policy and legislation including requirements of Randwick City Council
- Chapter 3 – Operational waste assessment including identification of waste quantities, types, classification, proposed waste storage and handling, proposed access arrangements for waste collection and the proposed management measures during operation
- Chapter 4 – Construction waste assessment including identification of waste quantities and types and proposed management measures during construction

Table 1.1 provides a summary of relevant SEARs and where each is addressed in this report.

Table 1.1 Relevant SEARs and where each is addressed

SEARs requirement	Where addressed in this report
7. Air quality, odour and waste The EIS shall identify potential... waste impacts during construction of the development and include any appropriate mitigation measures.	Section 3
18. Servicing and waste The EIS shall identify, quantify and classify the likely waste streams to be generated during operation and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones and mechanical plant) for the site.	<ul style="list-style-type: none">• Waste identification, quantification and classification is addressed in Section 4.1.• Proposed management measures are provided in Section 4.4.• Servicing arrangements are discussed in Section 4.2 and 4.3.

1.6 Scope and limitations

GHD has undertaken the following works as part of development of this waste management plan:

Construction

- Review of construction method and materials to identify likely key construction waste streams
- Identification of the types of waste to be generated during construction and where sufficient information is available, identify likely quantities for key waste streams.
- Identification of likely waste classification of key construction waste streams
- Identification of potential construction waste disposal, recycling and resource recovery management measures
- Identification of onsite waste handling, waste segregation measures, access and transport arrangements

Operation

- Review of planning documentation – including any relevant Council DCP requirements for operational waste management

- Identification of likely key waste streams (operation) and estimate waste quantities based on data provided, size of proposed buildings/structures/facilities and proposed uses
- Identification of likely waste classification of key operational waste streams
- Identification of potential waste equipment/container requirements based on identified waste streams and quantities
- Waste storage and handling assessment to the review and confirm schematic design allowances for:
 - Potential waste container space requirements
 - Potential clearances
 - Locations and sizes of, and access to and from waste and recycling storage areas
 - Internal and external waste transport, delivery and collection arrangements
- Identification of potential waste disposal, recycling and resource recovery facility options
- Preparation of a preliminary operational waste management plan

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The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

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2. Policy and legislation

2.1 Protection of the Environment Operations Act 1997

The *Protection of the Environment Operations Act 1997* (POEO Act) governs the requirements for waste generators in terms of storage and lawful disposal of waste. The POEO Act establishes the waste generator as having responsibility for the correct management of waste, including final disposal.

2.2 Waste Avoidance and Resource Recovery Act 2001

The objects of the Waste Avoidance and Resource Recovery Act 2001 (WARR Act) are:

- (a) to encourage the most efficient use of resources and to reduce environmental harm in accordance with the principles of ecologically sustainable development (ESD),*
- (b) to ensure that resource management options are considered against a hierarchy of the following order:
 - i. avoidance of unnecessary resource consumption,*
 - ii. resource recovery (including reuse, reprocessing, recycling and energy recovery),*
 - iii. disposal**
- (c) to provide for the continual reduction in waste generation*
- (d) to minimise the consumption of natural resources and the final disposal of waste by encouraging the avoidance of waste and the reuse and recycling of waste,*
- (e) to ensure that industry shares with the community the responsibility for reducing and dealing with waste,*
- (f) to ensure the efficient funding of waste and resource management planning, programs and service delivery,*
- (g) to achieve integrated waste and resource management planning, programs and service delivery on a State-wide basis,*
- (h) to assist in the achievement of the objectives of the Protection of the Environment Operations Act 1997.*

A waste management plan is a requirement for new developments in NSW and must be written with reference to the *NSW Waste Avoidance and Resource Recovery Strategy 2014-21*, made under the WARR Act.

2.3 Randwick Development Control Plan 2013

The *Randwick Development Control Plan (DCP) 2013* provides detailed planning and design guidance for new developments within the Randwick local government area.

2.3.1 Waste operation requirements

Part B6 covers recycling and waste management. Part B6 Section 4 Ongoing operation outlines the controls for ongoing operation:

- i) Provide suitable and sufficient waste storage facilities for all development, in accordance with Council's Guideline.
- ii) Identify in any required Waste Management Plan:

- a. estimated volume of general waste, recyclables, garden waste and bulky waste likely to be generated on the premise;
- b. required type, size and number of bins and space for storage of bins and bulky waste; and

Note: Waste storage facilities include waste/recycling bins and storage space for bins (e.g. bin enclosures/rooms) and bulky waste, etc.

- c. details of on-going management arrangements, including responsibility for cleaning, transfer of bins between storage facilities and collection points and maintenance of the storage facilities.

iii) Illustrate on the DA plans/drawings:

- a. storage space and layout for bins
- b. storage room for bulky waste
- c. waste collection point(s) for the site
- d. path of access for users and collection vehicles, and
- e. layout and dimensions required to accommodate collection vehicles when on-site collection is required.

iv) Locate and design the waste storage facilities to visually and physically complement the design of the development. Avoid locating waste storage facilities between the front alignment of a building and the street where possible.

v) Locate the waste storage facilities to minimise odour and acoustic impacts on the habitable rooms of the proposed development, adjoining and neighbouring properties.

vi) Screen the waste storage facilities through fencing and/or landscaping where possible to minimise visual impacts on neighbouring properties and the public domain.

vii) Ensure the waste storage facilities are easily accessible for all users and waste collection personnel and have stepfree and unobstructed access to the collection point(s).

viii) Provide sufficient storage space within each dwelling/unit to hold a single day's waste and to enable source separation.

ix) Bin enclosures/rooms must be ventilated, fire protected, drained to the sewerage system and have lighting and water supply.

x) For mixed use development, provide separate waste storage facilities for residential and commercial uses.

xi) Consult with Council and the NSW EPA with regards to any proposed storage and collection of special wastes (e.g. medical and household hazardous chemical wastes).

2.3.2 Royal Randwick Racecourse DCP requirements

Part 3 provides additional provisions for Specific Sites in the City. These override similar provisions in other parts of the DCP unless otherwise noted. Part E3 provides the requirements for Royal Randwick Racecourse.

With regards to waste management, Part E3.7 Environmental Sustainability requires all development and operations to incorporate ESD principles, comprising where appropriate and relevant the adoption of:

“Clean and efficient operational practices that:

- ensure waste minimisation and recycling
- provide space for the separation and recycling of wastes
- provide synergies with neighbouring uses in terms of products and waste”

In addition Part E3.8 Service Infrastructure specifies that:

“A waste management plan shall be submitted with development applications”.

2.4 Randwick Waste Management Guidelines for Proposed Development

The Randwick City Council *Waste Management Guidelines for Proposed Developments* (the Guideline) provides further guidance for waste management in developments in the local government area.

Section 3 of the Guideline outlines the waste requirements for all developments. Relevant requirements can be summarised as follows:

- Providing the necessary provisions to enable Council to provide effective and efficient waste collection services to the development
- Submission of a Waste Management Plan with the development application in accordance with the Guidelines
- Appropriate storage of waste bins
- Locating the waste storage facility in a suitable location
- Compliance with the Building Code of Australia and relevant Australian Standards
- Use of Council approval signage in communal waste storage facilities
- Provision of sufficient space for waste likely to be generated on the premises during the period between collections
- Requirements for waste collection points
- Providing access for collection vehicles

Section 9 of the Guideline outlines the waste requirements for commercial developments. Relevant requirements include:

- Storage of bins within a garbage and recycling room or enclosure
- Service lift for multi-story developments
- Consideration given to the use of compaction equipment
- Estimation of space for storage using the commercial waste generation rates provided in Appendix A of the Guideline. The size of a waste storage facility should be calculated based on estimated waste generation rates, proposed bin capacities and collection frequencies.
- Space for the source separation and storage of garbage and recycling

3. Construction

3.1 Waste generating activities

The construction activities expected to generate wastes would include:

- Removal of existing temporary race day stalls
- Ground works (including services provisions) – bulk earth works, detailed footing, piling etc
- Building construction and fit out including:
 - Formwork, reinforcement, concrete pour, temporary propping, formwork, reinforcement, concrete pour
 - Fit out – electrical, mechanical, fire, communications, security, hydraulic, and fire

Small quantities of waste would also be generated by construction staff. Staff numbers would vary across the construction program, but is expected to range from 13 to 48 persons per day during construction.

3.2 Construction waste generation

3.2.1 Removal of temporary race day stalls

Early works would include removal of the existing temporary race day stalls. Wastes expected to be generated from this activity include:

- Steel framing with insulated wall panels
- Concrete flooring with bonded rubber

Approximately 15 tonnes of steel and 330 m³ of concrete waste would be generated from this activity. The steel framing would be relocated on the site and reused.

3.2.2 Ground works

Ground works including bulk earthworks would generate spoil. However cut and fill information indicates that the project will result in a net fill volume. Where possible, excavated material would be reused on site as fill.

3.2.3 Building construction and fit out

There are no specific estimation factors available for Randwick City Council. However, the Hills Shire Council DCP 2012 Appendix A provides guidance on typical quantities of construction wastes for a number of building types, broken down by material types. The Hills Shire Council DCP guidance is considered the best available literature and offers reasonable comparative guidance for waste generation within Randwick City Council. Therefore it is considered appropriate for use in this assessment.

The closest building type was considered to be a 'factory'. The construction waste estimation factors are shown below in Table 3.1.

Once the construction contractor has been appointed, a detailed construction waste statement will be prepared.

Table 3.1 Estimation factors for construction wastes

Building type	Timber	Concrete	Bricks	Gyprock	Sand/Soil	Metal	Other
Factory (assumed to be tonnes per 1,000 m ²)	0.25	2.1	1.65	0.45	4.8	0.6	0.5

Table 3.2 provides details of waste estimates and waste management measures proposed for the construction phase, based on a gross floor area of the proposed development of 8,800 m².

Table 3.2 Construction waste estimates and measures

Materials on-site		Destination		
Waste type	Estimated quantity (tonnes)	Reuse and recycling		Disposal
		On-site	Off-site	
Timber	1	0	1	0
Concrete	10	0	5	5
Bricks	8	0	8	0
Gyprock	23	0	0	23
Sand/soil	23	0	0	23
Metal	3	0	3	0
Other	2	0	0	2
TOTAL	71	0	17	54

Small quantities of waste would be generated from fit out activities including packaging materials and offcuts.

Small quantities of general waste would also be generated from construction site offices, lunchrooms, and construction staff. The small quantities of general waste would be collected by a licenced waste contractor and disposed of at a licensed waste disposal facility.

3.3 Construction waste classification

The waste classifications for wastes expected to be generated during construction is shown in Table 3.3.

Table 3.3 Expected construction waste stream classification

Waste stream	Waste classification
Packaging, beverage containers, general office waste etc from construction staff	General solid waste (non-putrescible)
Food scraps and other kitchen type waste from construction staff	General solid waste (putrescible)
Spoil from groundworks	General solid waste (non-putrescible)
General construction and fit out waste including building materials (concrete, asphalt, timber formwork, scrap metals, rubber, packaging materials, offcuts etc)	General solid waste (non-putrescible)
Wastewater (such as from construction staff amenities)	Liquid waste
Vegetation	General solid waste (non-putrescible)

3.4 Waste handling, storage and collection

Waste would be temporarily stockpiled and segregated on site using different skip bins for recycling and waste, with separate bins for different recyclable materials. The temporary storage location would be within in the 'material handling' zone shown on Figure 3.1.

Construction waste vehicles would enter and exit the site via Ascot Street or Alison Road. Vehicles would be able to enter and exit in the forward direction.



Figure 3.1 Construction site plan

3.5 Potential construction waste impacts

The potential impacts associated with aspects of waste generation and management during construction are summarised in Table 3.4.

Table 3.4 Potential impacts associated with construction waste generation and management

Aspect of waste management	Potential impacts
Generation of waste, including excavation and handling	<ul style="list-style-type: none">• Energy and water consumption associated with packaging• Impacts associated with extraction of resources• Environmental impacts associated with generation and handling on site, including dust, sediment laden/contaminated runoff and noise
Storage of waste on site	<ul style="list-style-type: none">• Sediment laden/contaminated runoff and leachate generation• Dust• Health and safety of site personnel• Littering• Site access restrictions
Storage and segregation of waste on site	<ul style="list-style-type: none">• Cross contamination of wastes• Reduction in reuse of materials

Aspect of waste management	Potential impacts
	<ul style="list-style-type: none"> Contamination of recycling facilities
Waste transportation	<ul style="list-style-type: none"> Dust, noise, traffic and odours Mud tracking on road
Non-classified or incorrectly classified waste transport and disposal	<ul style="list-style-type: none"> Regulatory non-compliance Contamination of recycling facilities/landfills Contamination of soils, groundwater and surface water
Unlicensed waste contractors transporting waste	<ul style="list-style-type: none"> Regulatory non-compliance Potential illegal dumping of waste

Construction waste management activities are not expected have a significant impact on the environment or human health, assuming the management measures identified in Section 3.6 are implemented.

3.6 Construction waste management

Table 3.1 provides a summary of the proposed construction waste management measures for key waste streams.

Table 3.5 Construction waste management measures

Waste stream	Proposed management measures
Spoil from groundworks	<ul style="list-style-type: none"> Excavated materials would be reused on site as engineering fill where fit for purpose and practicable. Where excavated materials cannot be reused or retained on site they would be classified and taken off site for appropriate reuse or to a waste management facility that is lawfully permitted to accept that type of waste for reuse, recycling or disposal.
General construction, demolition and fit out waste including building materials (concrete, asphalt, timber formwork, scrap metals, packaging materials, offcuts etc).	<ul style="list-style-type: none"> General construction, demolition and fit out waste would be managed in accordance with the waste hierarchy. Waste would be segregated and stockpiled on site, with materials such as clean concrete, timber, plastic, and metals separated and sent to a construction and demolition waste recycling facility where feasible. The bondor panels from the temporary race day stalls would be retained and reused on site. Construction waste would be classified in accordance with the Waste Classification Guidelines and directed to a waste management facility that is lawfully permitted to accept that type of waste.
Packaging, beverage containers, general office waste, food scraps and kitchen waste etc from construction staff	<ul style="list-style-type: none"> Recyclable materials such as paper, cardboard, plastics, glass, ferrous, and non-ferrous containers would be stored at recycling bins for collection by an authorised contractor, and recycled off site. Where recycling is not feasible, waste would be collected and stored in designated waste storage areas for collection by an authorised contractor for disposal off site at a licenced waste facility
Liquid waste	<ul style="list-style-type: none"> Wastewater, sewage, and grey water would be disposed to sewer or transported to an appropriately licensed liquid waste treatment facility.

Waste stream	Proposed management measures
Green waste	<ul style="list-style-type: none"> As far as practicable, weed-free green waste would be chipped, mulched and reused on site or collected by an authorised contractor and recycled off site.

There are a number of locations for off-site recycling and disposal of construction waste generated by the project. Waste facilities in Sydney licensed to lawfully accept general solid waste (putrescible and non-putrescible) and vegetation/green waste include (but are not limited to):

- Clyde Transfer Terminal
- Eastern Creek Resource Recovery Park
- Kemps Creek Advanced Resource Recovery Park
- Lucas Heights Resource Recovery Park
- A number of waste transfer stations.

A number of facilities are also available to recycle construction and demolition waste or recyclables such as beverage containers, paper, cardboard etc. Recyclables would be collected by an authorised contractor for off-site recycling. The recycling facilities would be determined by the contractor engaged to collect the material.

Specific facilities and collection contractors would be selected during the later stages of the project and documented in the construction environmental management plan for the project.

3.7 Construction waste mitigation measures

During construction, waste generated on site would be managed and minimised by a combination of waste planning and waste management on site controls.

3.7.1 Waste planning

Waste planning activities would include:

- Designing the building to minimise on site cutting of components, and maximising on site assembly tasks
- Careful ordering of materials such as sand and building products to match quantities with amounts required, and on time ordering rather than having materials stored on site for months before being used
- Segregating materials and providing weather protection for stored materials on site, to maximise their fitness for use
- Encouraging bulk handling and use of reusable and returnable containers
- At the time of tendering, advise contractors and sub-contractors and suppliers of the requirements to minimise waste on site
- Include provision in the tender documentation for the client to monitor the use of waste and recycling bins on site

3.7.2 Onsite controls

A Construction Waste Management Plan for the project will be developed by the construction contractor that considers the management of all construction waste in accordance with the waste management hierarchy. The Construction Waste Management Plan will include:

- Classification of all waste streams in accordance with the EPA (2014) *Waste Classification Guidelines*
- Identification and operation in accordance with applicable resource recovery orders and exemptions
- Waste identification, handling and segregation procedures
- Proposed waste reuse, recovery and recycling and disposal measures
- Segregating wastes generated on site, using different skip bins for recycling and waste, with separate bins for different recyclable materials
- Discussion about the site's waste management and recycling policies and practices with employees and subcontractors during site inductions and tool box talks
- Ensuring all waste disposal bins are clearly marked
- Waste tracking, record keeping and reporting requirements including keeping records of quantities of waste and recycled materials disposed of, and the destinations of these materials
- Ensuring that wastes are only disposed to licenced facilities lawfully able to accept the waste type

4. Operational waste

The operational waste assessment is based on the updated design prepared for the s4.55 Modification application in order to demonstrate that the modified development can satisfactorily accommodate the waste service requirements during operation. The assessment is based on operation of the modified development as a standalone facility used as a function centre for banquet style events.

As the modified development will not add additional patronage capacity during race days, race day waste management will continue to be undertaken in accordance with the existing and approved operational waste management procedures using existing waste management infrastructure.

4.1 Waste quantities and types

4.1.1 Waste generation rate

Table 4.1 provides a variety of waste generation rates from a number of sources. The *Randwick City Council Waste Management Guidelines - Appendix A* provides waste generation rates on a per 100 square metre floor area basis for premises such as restaurants, bars, and licensed clubs.

The proposed modified development will operate as a function centre hosting banquet style events. Facilities for plating of food will be provided but food preparation will not occur as part of the development. Therefore, waste generation rates for typical restaurants would overestimate operational waste quantities and are therefore not considered to be appropriate. Waste generation rates for bars would potentially under estimate operational waste quantities as food waste would most likely be generated at a higher rate than a typical bar.

Randwick City Council does not provide guidance on waste generation rates for events / banquet functions. However, Waverley Council does provide guidance in its *Event Waste Management Plan Guidelines* for event organisers. The guidance from Waverly Council offers reasonable comparative guidance to estimate waste generation within Randwick City Council and is considered appropriated for use in this assessment.

This guideline provides a waste generation rate on a per meal basis. After reviewing the available guidance, this was considered to most accurately reflect the actual proposed use of the development and therefore the waste generation rate from the Waverly Council *Event Waste Management Plan Guidelines* was adopted for the waste storage assessment.

Table 4.1 Waste generation rates

Type of premises	Units	Garbage generation	Recycling generation	Source
Food				Extract from Randwick City Council Waste Management Guidelines - Appendix A
-Restaurants	L/100m ² FA/day	670	140	
Licenced clubs				
-Restaurant	L/100m ² FA/day	667	133	
-Bar	L/100m ² FA/day	50	40	EPA Better Practice Guidelines for Waste Management and Recycling in Commercial and Industrial Facilities
Hotels, bars, pubs				
-average	L/100m ² FA/day	80	35	
-maximum	L/100m ² FA/day	300	85	Waverley Event Waste Management Plan Guidelines
Events	L/meal	1		

Note: L = litres, FA = floor area

4.1.2 Expected waste quantities and types

It is expected that approximately **4,000 litres** of waste will be generated per event.

This estimate is based on the following:

- Waste generation rate of 1 litre per meal (as discussed in Section 4.1.1)
- Banquet style event capacity of up to 4,000 persons
- One meal per person per event

The waste would comprise a mix of general waste (food scraps, paper towels, serviettes packaging, beverage containers etc). Some of this waste would be recyclable and therefore bins for food, general waste and recyclables will be provided.

4.1.3 Waste classification

The waste classifications for wastes expected to be generated during operations is shown in Table 4.2.

Table 4.2 Expected operational waste stream classification

Waste stream	Waste classification
Packaging, beverage containers, empty cleaning receptacles, used decorations etc	General solid waste (non-putrescible)
Food scraps and other kitchen type waste	General solid waste (putrescible)

4.2 Waste storage and handling

4.2.1 Bins and other equipment

Either 660 litre wheeled bulk bins or 240 litre wheeled bins will be used to store operational waste within the development.

Table 4.3 shows the number of bins required to store the waste expected to be generated (4,000 L as identified in Section 4.1.2). Three potential bin configuration options have been assessed.

Table 4.3 Waste storage capacity

Bin configuration options	Storage capacity
Option 1: 7x 660 L wheeled bulk bins	4,620 L
Option 2: 17x 240 L wheeled bins	4,080 L
Option 3: 4x 660 L wheeled bulk bins + 7x 240 L wheeled bins	4,080 L

The storage capacity requirements assume that:

- Waste collections are scheduled for each event
- Neither waste nor recyclables are compacted

Considering the type of wastes likely to be generated, it is expected that a majority 240 litre wheeled bins will be used. Heavy wastes such as glass beverage containers and food are likely to make use of large bulk bins less feasible for cleaning staff to wheel the bins to the waste collection point. It is expected that approximately half of the proposed bin volume will be provided for recycling and one quarter will be provided for food waste.

A combination of 660 litre wheeled bulk bins and 240 litre wheeled bins could be adopted, with heavier waste such as glass placed into the 240 litre wheeled bins (yellow lid) and food waste placed into designated food only bins (burgundy lid).

No compactor is proposed to be installed as part of the modified development.

4.2.2 Waste storage

An approximate 13 m² external bins zone is proposed to be provided on the ground floor at the rear of the loading dock. The location provides a minimum aisle clearance for at least a pallet to be moved past the bins from the access ramp towards the roller door. Access to the loading zone is via a goods/service lift within the building.

An assessment of the waste storage requirements is provided in Table 4.4. This shows the minimum storage areas for bins for the three potential bin configuration options is 7.1 m² (per Option 3). The required number of bins can be accommodated within the space provided (13 m² total) in external bins zone and under Option 3 approximately 5.9 m² would be available for manoeuvring.

Table 4.4 Waste storage

Bin configuration options	Minimum storage area required - bins only	Area available for access and manoeuvring
Option 1: 7x 660 L wheeled bulk bins	7.3 m ²	5.7 m ²
Option 2: 17x 240 L wheeled bins	7.2 m ²	5.8 m ²
Option 3: 4x 660 L wheeled bulk bins + 7x 240 L wheeled bins	7.1 m ²	5.9 m ²

The proposed location of the external bins zone on the ground floor level is provided in Figure 4.1 and Figure 4.2 shows the external bin store zone with the bins configured per Option 3.

Bins would be either wheeled down the access ramp to kerbside for collection, or a collection vehicle would reverse into the loading dock and bins would be loaded from there.

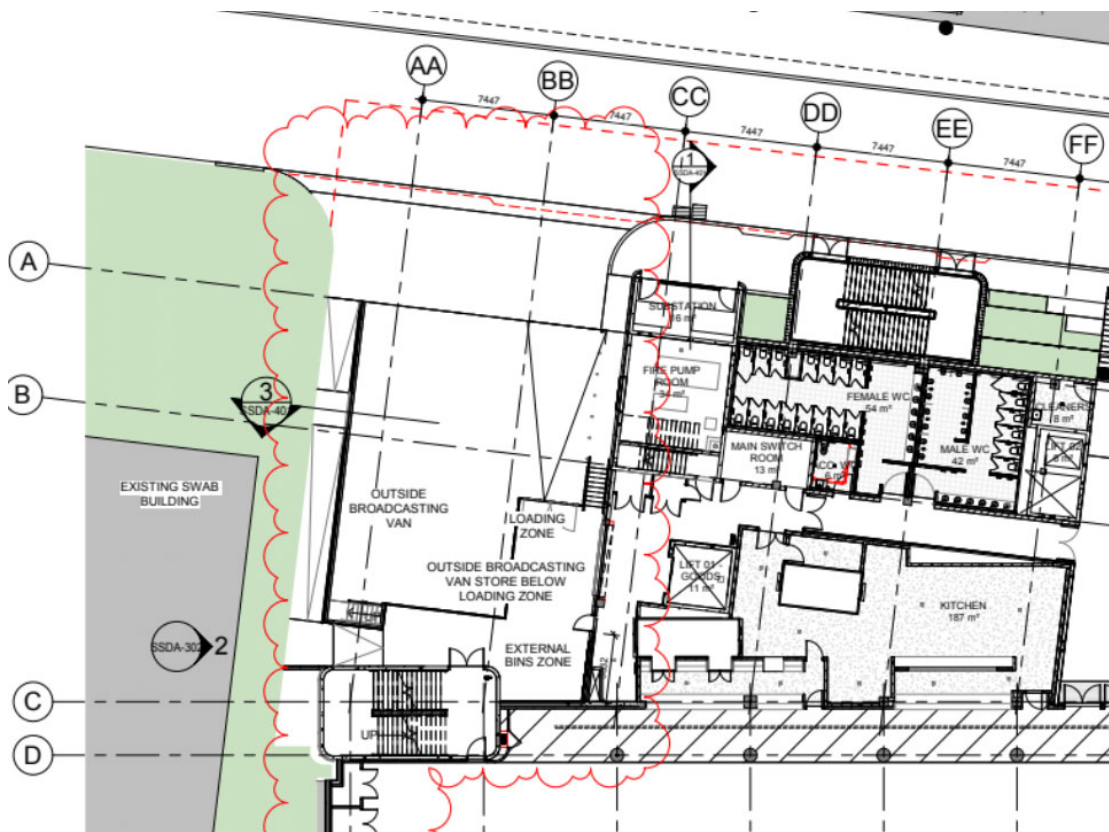


Figure 4.1 Waste storage and collection location

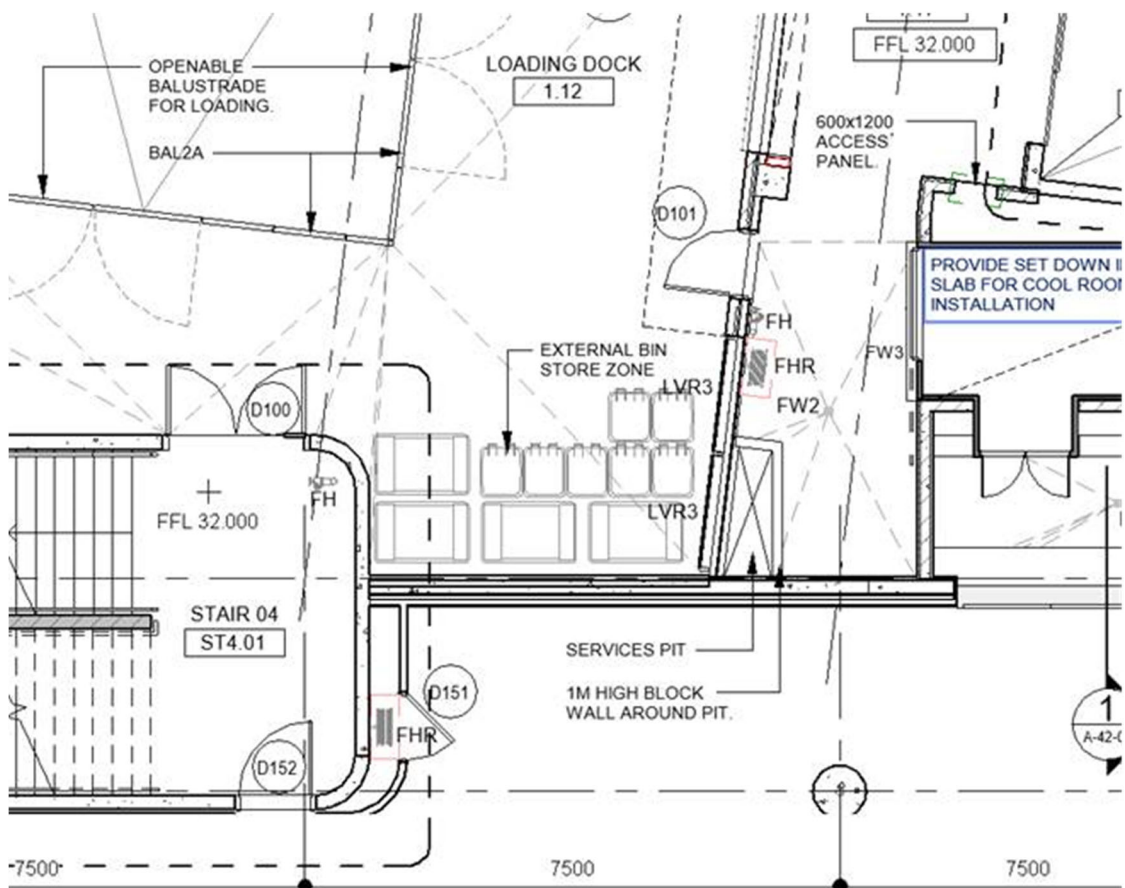


Figure 4.2 External bin store zone (showing option 3)

The external bins zone will be fire protected, drained to the sewerage system and have lighting and water supply.

A bin wash area in the external bins zone will be provided to enable cleaning of bins.

4.2.3 Waste handling

Small receptacles for source separation of food waste, general garbage and recycling will mostly likely be provided on each floor within each of the proposed plating kitchens. During and/or at the conclusion of an event, the small receptacles will be emptied and food waste, general waste and recyclables taken by contracted cleaners or facilities management staff to the waste storage room on the ground floor.

Food waste, general garbage and recycling will be separated into separate nominated bins with colour coded lids – yellow for recycling, burgundy for food waste and red for general garbage.

Food waste, garbage and recycling will be stored in 660 litre or 240 litre wheeled bins in the proposed external bins zone on the ground floor of the development. Neither food waste, garbage nor recycling will be compacted.

Collection contractors will be appointed to collect waste at the conclusion of each event as required.

4.3 Access and waste collection

Waste collection will occur within the loading dock. Collection will be organised as required for specific events with the collection contractor(s) required to return the bins to within the external bins zone following pick up.

The expected collection vehicles that will service each waste stream are outlined in the following table, with associated dimensions and clearance requirements.

Table 4.5 Collection vehicle details

Waste stream	Bin types	Collection vehicle	Dimensions and clearance
Residual waste	240 L bins or 660 L bins	Medium rigid vehicle	Length – 8.8 m Width – 2.5 m Travel height – 4.5 m
Recyclables	240 L bins	Medium rigid vehicle	As above
Food waste	240 L bins	Medium rigid vehicle	As above

Swept path analysis (Appendix A) indicates that a 19 m articulated vehicle (larger than a medium rigid vehicle) will be able to manoeuvre into and out of the loading dock.

4.4 Management

4.4.1 Responsibilities

Contracted cleaners or facilities management will be responsible for arranging the transfer of waste and recyclables to the external bins zone during or following each event.

Facilities management will be responsible for safe and efficient management of waste including:

- Cleaning and maintenance of waste receptacles, bins and the external bins zone
- Preventing ingress of pests and vermin
- Providing signage (refer Section 4.4.2)

- Ensuring the external bins zone, receptacles and bins are protected from theft and vandalism
- Contracting and scheduling waste collection services for each event

4.4.2 Signage

Clear and easy to read standard signage on what materials are acceptable in the food waste bins and recycling bins will be posted in each of the plating kitchens where the small waste receptacles are located as well as in the waste storage room. Refer Figure 4.3 for example signage.

Adequate signage identifying the external bins zone will be prominently displayed.



Figure 4.3 Standard waste signage

5. Conclusion

This Waste Management Plan forms the framework for the provision of waste management measures for the future detailed design stages of the modified development.

This Waste Management Plan shows that the modified development can comply with relevant Randwick City Council and legislative requirements for operational waste management.

It also demonstrates that construction wastes expected to be generated would be able to be managed through application of mitigation and management measures.

Appendices

Appendix A – Swept path assessment

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