Australian Jockey Club

Spectator Precinct

Environmental and Residential Amenity, Waste Management Plan

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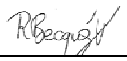
		Signature			
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Contents

1 Executive Summary

This report has been produced in response to the Director Generals Part 3A Planning requirements MP 10-0097 for the construction of the new Spectator Precinct on the northern side of the Royal Randwick Racecourse.

It addresses DGR 6 of the *Project Application for the refurbishment of the Spectator Facility (App N^{o} MP_100097)* in regards to waste;

- DGR 6. Environmental and Residential Amenity

  The EA must address any likely solar access, acoustic privacy, visual privacy, view loss, odour issues and light spill and identify mitigation measures necessary to achieve a high level of environmental and nearby residential amenity including the future development of 66A Doncaster Avenue (the former Tramways Land)

- Appendix B Plans and Documents to accompany the Application

  15. Waste Management/ Garbage and Recycling Management Plan

  Provide detail of the proposed design of waste management / garbage and recycling facilities and collection arrangements in accordance with council requirements.

A Waste Management / Garbage and Recycling Management Plan is to be provided in accordance with council requirements and informed by current and estimated waste generation on the site, surrounding land use, access to the site and waste collection and disposal arrangements. Waste management currently undertaken on the site is assumed to be in accordance with the *AJC Waste Management Plan and Recycling Implantation* (Assetlink 2008) unless otherwise noted.

In conclusion the waste generation and impacts of waste from the proposed refurbishment of the Spectator Precinct is assessed as being acceptable subject to the following recommendations;

- Sizing of waste storage areas and loading dock areas to the waste storage requirements identified within this report and relevant Australian standards;
- All waste to be treated or removed from site at the end of each race day or large event;
- Undertake further examination of potential waste treatment strategies during detailed design including;
- Back of house organic food collection (colour coded bin);
- Back of house paper collection (colour coded bin);
- Increased back of house (non-biodegradable) recyclable plastic collection;
- Waste transportation from the site to be via waste truck or mobile compactor vehicle.

2 Introduction

2.1 Purpose of Waste Management Plan

This Waste Management Plan (WMP) is prepared to address all relevant issues associated with obtaining approval for the proposed Refurbishment of the Spectator Precinct for the Royal Randwick Racecourse under Part 3A of the Environmental Planning and Assessment Act (EP&A Act).

The WMP identifies waste sources from the Spectator Precinct during operation and proposes measures to manage waste in a way that satisfies all legislative requirements.

In summary the key purposes of the WMP are to:

- Address the waste management requirements for the proposal to a standard suitable for approval under Part 3A of the EP&A Act;
- Reduce the project's environmental footprint through effective waste separation, recycling and re-use measures;
- Develop management requirements for operation.

2.2 Assumptions and Limitations

Waste generation estimations have been made using industry estimates and past experience within the Spectator Precinct on large event days. Information such as that included within waste estimation tables within the City of Sydney's *Policy for Waste Minimisation in New Developments 2005* (CoS Waste Policy) has also been used in sizing of waste storage areas.

All waste facilities and equipment are required to be designed and constructed in accordance with the Building Code of Australia (BCA), and Australian standards.

This Waste Management Plan is completed as a stand alone document and will be co-ordinated with existing contracts or waste plans that may currently be in place for the Royal Randwick Racecourse and the AJC as part of the detailed design process. Waste management currently undertaken on the site is assumed to be in accordance with the *AJC Waste Management Plan and Recycling Implantation* (Assetlink 2008) unless otherwise noted.

No detailed design drawings are available at the time of completion of this Waste Management Plan. Detail of the internal movements of waste in grandstands, from loading docks and other storage areas is therefore not able to be made. This will be finalised during the detailed design phase.

3 Project Description

3.1 Proposed redevelopment

The redevelopment of the existing Spectator Precinct will see:

- The existing Queen Elizabeth II grandstand refurbished and the Paddock Grandstand replaced with a new grandstand, including basement levels;
- A new parade ring added to the rear of the QEII and Paddock Stands with associated amphitheatre style seating to establish a "Theatre of the Horse";
- A facilities building adjacent to the new parade ring for owners and trainers;
- Adaptive reuse of the existing Swab Building with adjacent ancillary café and bar facilities;
- Landscaping as well as demolition of the existing Randwick pavilion building and teahouse buildings.

The Figure 1 below shows the Spectator Precinct's location on site near the intersection of Alison Road and Doncaster Avenue, Randwick. Figure 2 shows the concept design of the proposed refurbishment of the Spectator Precinct.

Figure 1 Spectator Precinct location

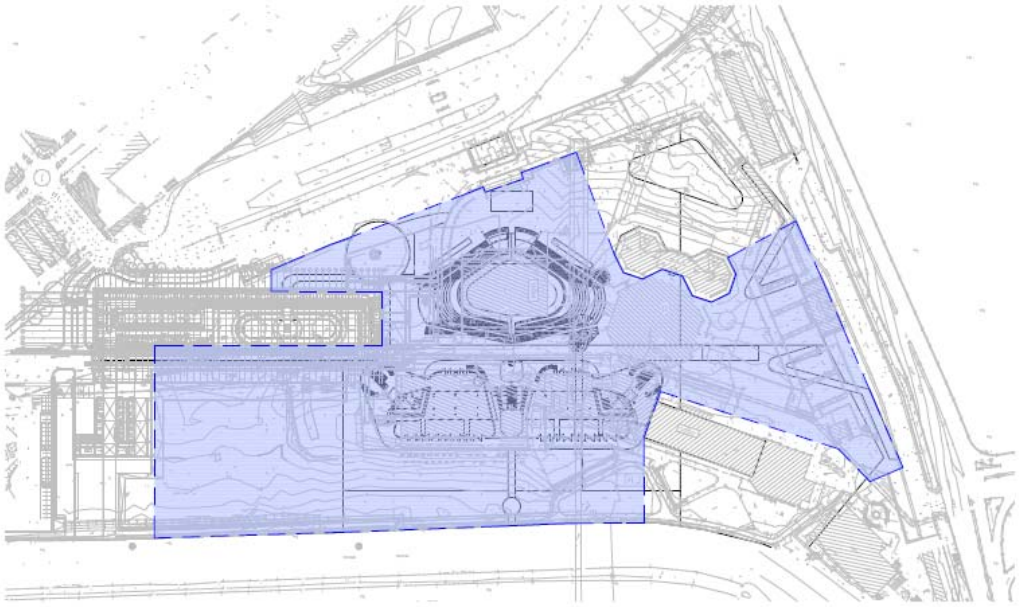
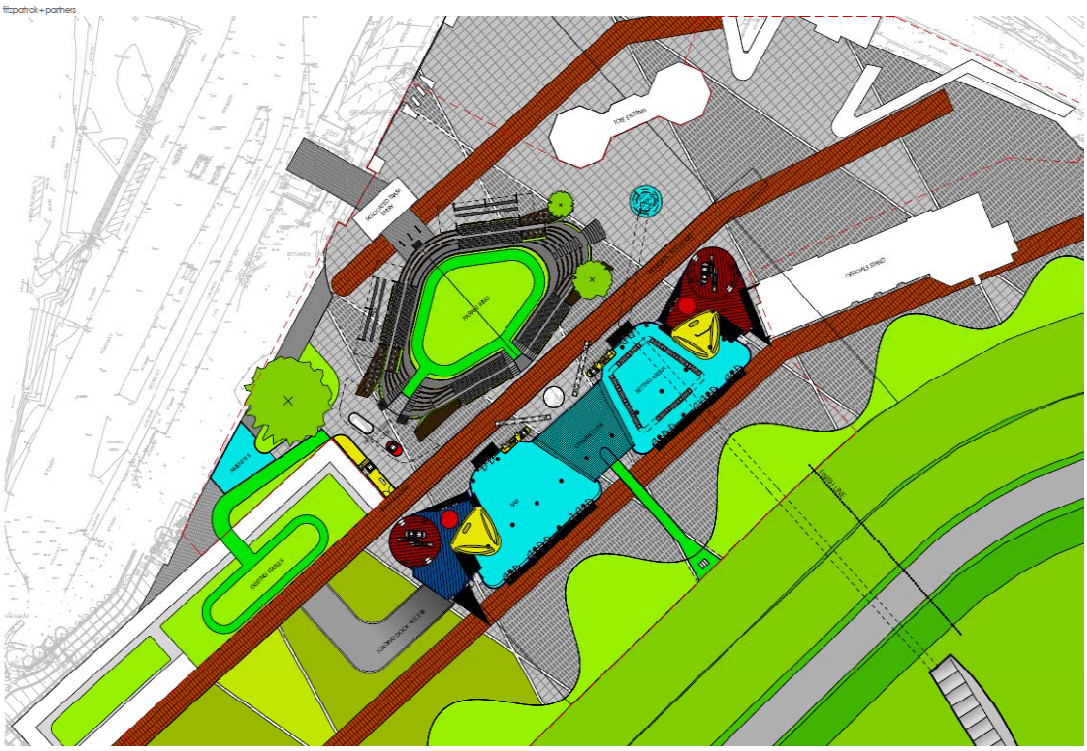


Figure 2 Spectator Precinct Concept Design

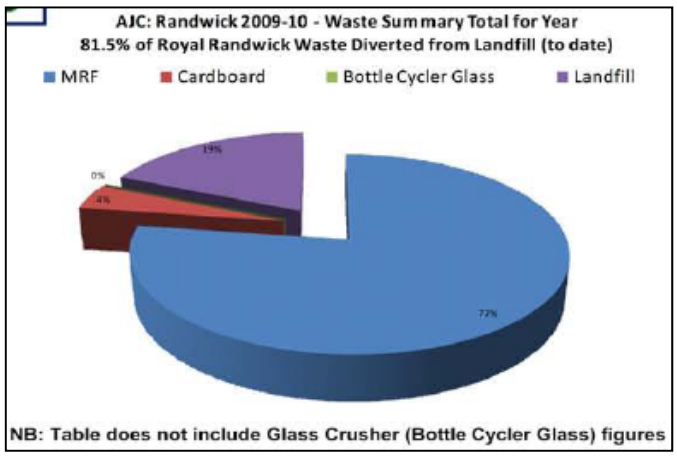


3.2 Existing Condition – Waste

The Royal Randwick Racecourse hosted 63 race days in the 2009/2010 financial year with major racing events taking place only a few times a year.

The current Spectator Precinct generates considerable volumes of waste on major events days, in the order of 20 tonnes. Much of this waste is recyclable in the form of glass bottles. Two glass crushers are used for race days and business events to reduce the disposable volume of empty bottles by 80%.

Waste is currently collected separately by means of different coloured bins for cardboard, glass and general waste. There is no composting or organic waste collection or treatment onsite. Cardboard is bailed onsite by means of an electric bailer to facilitate recycling.



Current waste collection and off-site disposal methods at the Royal Randwick Racecourse result in an on average 70 to 80% diversion of waste from landfill, based on weight. This is achieved through sending the majority of waste off to Visy's Material Recovery Facility (MRF) at Smithfield.

There are currently 500 to 600

mobile garbage bins (240L) on site to accommodate peak load on the busiest race days (occurring a few times a year). Typical race days use approx 50% of this capacity.

Current race day arrangement is for two mobile compactors parked on site that have a processing capacity of 10 tonnes a day each. On Autumn and Spring Carnival Race Days an additional twelve mobile skip bins of three cubic metres are positioned on course, holding an estimated 1.5 tonnes of glass waste per Carnival day.

There are currently up to 220 staff on the busiest race days solely for managing waste.

Suitable excess food from race days and other events is donated to charity.

3.3 Proposed Modification – Waste

The peak waste load that is experienced during major race days will increase due to the refurbishment of the Spectator Precinct, with increases to capacity of the QEII stand and the Paddock stand, and the addition of the Parade Ring called 'Theatre of the Horse'.

The refurbishment will result in a combined 69% seating capacity increase for the QEII and Paddock stands, and an additional 5000 seating capacity at the Theatre of the Horse. Total seating capacity at Randwick will increase by 81% or 7525 seats (see Figure 3[1]);

Figure 3 Capacity of proposed refurbishment of the Spectator Precinct

Grandstand	Current Capacity	Proposed Capacity	Percentage Change
Queen Elizabeth II	3,744	4,980	33%
Paddock	3,077	6,534	112%
Tea House	888	-	(100)%
Theatre of the Horse	-	5,000	500%
Pavilion	1,600	320	(80)%
Total	**9,309**	**16,834**	**81%**

As such additional waste storage will need to be provided over the existing condition, and a redesign of current waste handling procedures is sought. Increased recyclables recovery and the potential for the capture of some of the organics waste stream from vendors are to be investigated.

Additional waste storage will need to be accommodated on site and this will be through a combination of permanent on-site bin locations, dedicated storage areas within the Spectator Precinct, and dedicated storage areas outside of the spectator precinct, from which the bins can be transported to the precinct as required for large events.

[1] Urbis July 2010. Clause 6 Request and Preliminary Environmental Assessment – Royal Randwick Racecourse Spectator Precinct

4 Statutory Requirements

4.1 Environmental Planning and Assessment Act 1979

The project is subject to Part 3A Planning requirements under the Environmental Planning and Assessment Act 1979.

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It addresses DGR 6 of the *Project Application for the refurbishment of the Spectator Facility (App N^{o} MP_100097)* in regards to waste:

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4.2 The Protection of the Environment Operations Act, 1997

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

4.3 Waste Avoidance and Resource Recovery Act 2001

Due to concerns about waste management practices and increasing volumes of waste, the NSW government introduced the Waste Avoidance and Resource Recovery Act 2001, superseding the Waste Minimisation and Management Act 1995 following its five year review.

The object of the Waste Avoidance and Resource Recovery Act is to encourage the most efficient use of resources, to reduce environmental harm, and to provide for the continual reduction in waste generation in line with the principles of ecologically sustainable development (ESD).

The Waste Management Statement relates to a new development in NSW and is written with reference to the NSW Waste Avoidance and Resource Recovery Strategy 2003, made under the Act.

The following hierarchy for managing waste, from most desirable to least desirable, meets the objects of the Act:

- Avoid unnecessary resource consumption;
- Recover resources (including reuse, reprocessing, recycling and energy recovery); and
- Dispose (as a last resort).

4.4 The NSW Waste Reduction and Purchasing Policy 2007 (WRAPP)

The NSW Waste Reduction and Purchasing Policy (WRAPP) requires all state government agencies and state owned corporations to develop and implement a WRAPP plan to reduce waste in four scheduled areas:

- Paper products;
- Office equipment and components;
- Vegetation material; and
- Construction and demolition materials

WRAPP is not directly applicable to the project, but is a suitable guiding document for waste initiatives.

4.1 Randwick City Council Waste Management Guideline for Proposed Developments

The Spectator Precinct is located within the Randwick City Council area, and the applicable waste planning document for new developments in this local government area is the Randwick City Council Waste Management Guideline for Proposed Developments.

Estimations of waste generation for different classifications of commercial premises (e.g. bar and restaurant) have been taken where possible from Appendix A of the Randwick City Council Waste Management Guideline.

Similarly the detailed design of waste facilities required for the refurbishment of the Spectator Precinct will be informed by the requirements for waste handling, waste collection and access requirements included within the Appendices F and G of the Guideline.

4.2 Royal Randwick Racecourse Development Control Plan 2007

The Royal Randwick Racecource Development Control Plan (DCP) is applicable to the area to be covered by this Waste Management Plan.

The Royal Randwick Racecourse DCP contains planning provisions for traffic management, precinct specific uses and development within the Royal Randwick Racecourse.

The applicable section of the DCP in regards to waste and odour is provided in Part 3.7 of this DCP:

> *Environmental Sustainability,*
>
> *Performance Criteria (a):*
>
> *(iv) 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.*

The DCP calls for the general pattern of land use to be maintained across the site. The site of the refurbished Spectator Precinct is wholly located in the area described as 'Spectator Precinct' in the DCP, which is reserved for 'concentration of race day, AJC management and entertainment uses.'

5 Waste Estimation

5.1 Current situation - waste generation rates

The waste collected from site during the month of April 2010 amounted to 122.10 tonnes. A waste breakdown for April is provided in table 1 below.

Table 1 Waste collected for April 2010

April 2010	Tonnes	% of Total
Gen Waste 240L	31.72	26.0%
Gen Waste 660L	8.82	7.2%
Cardboard 660L	3.36	2.8%
Cardboard 1100L	0.32	0.3%
Stables	25.08	20.5%
Comingle	0	0.0%
General race meetings	52.14	42.7%
Bottle Cycler Glass	0.66	0.5%
Total	**122.1**	**100%**

About 43% of the waste generated in April came from “general race meetings”, which consisted of the Autumn Racing Carnival 2010 held on:

- April 10 (Derby Day);
- April 17 (Doncaster Day); and
- April 24 (Sydney Cup Day).

Over the course of these three racing days a total of 67,032 spectators visited the Spectator Precinct, generating 52 tonnes of waste or an average 1.29 kg of waste per spectator. Doncaster Day with 26,000 spectators, which was the best attended race day of the Autumn Carnival, had a peak waste load estimated at 20 tonnes of general waste.

It is assumed that additional waste (general, glass and cardboard) was generated from ‘back of the house’ operations in the lead up to the event (preparations) and on the day.

5.2 After refurbishment - waste generation rates

In the future the refurbished Spectator Precinct will have an additional seating capacity of 7,525 over the existing condition, although total capacity will remain below the 55,000 estimate included as part of the previous Part 3A application. A similar increase in spectators to a total of 33,500 for future Doncaster Days over the current number (26,000) has been assumed. Without waste minimisation practices this would result in an estimated 29% increase in waste generation rates associated with the event.

Current and future ‘Doncaster Day’ (peak race day event) waste estimation rates are provided in Table 2. ‘General race meetings’ waste refers to the waste produced on the day by spectators and disposed off in 240L bins on site.

Other categories refer to 'back of house' waste from activities associated with Doncaster Day and have been calculated based on the waste composition percentages for April 2010, as provided in paragraph 5.1.

Table 2 Current and future waste quantities for Doncaster Day

Doncaster Day (April)	Current- Tonnes	Future - Tonnes
Gen Waste 660L	3.50	4.50
Cardboard 660L	1.33	1.72
Cardboard 1100L	0.13	0.16
General race meetings	20.42	26.27
Bottle Cycler Glass	0.26	0.34
Total	**25.64**	**32.99**

5.3 Organic waste management

There is currently no organic waste treatment or organic waste collection undertaken on the Spectator Precinct.

Organic waste generated from the site is significant, and opportunities exist and are currently being investigated for organics stream segregation from areas of the site where minimal contamination of the organic stream can be ensured (e.g. kitchen and restaurant areas, food outlets and other back of house).

Organics waste stream diversion from the general waste collected in public areas is not proposed as contamination of this stream is expected to be unacceptable.

Once collected, the organic waste can either be sent off site for composting or other biological treatment, or treated on site in a suitable location. Organics treatment on site through composting, vermiculture (worm farming) or other advance method (e.g. anaerobic digestion) would result in a ready stream of soil conditioners and fertiliser which may be then used on Royal Randwick Racecourse grounds.

The Royal Randwick Racecourse has numerous open space areas with potential to house an organic waste treatment facility and as such all options for organics treatment could be investigated. Combination of organics waste from back of house at the Spectator Precinct with some or all of the manure / stable bedding waste stream generated from the Stabling Precinct would be an option for increasing the organics waste stream where that was desired.

6 Waste Management and Storage

6.1 Current waste storage

Waste storage units currently provided on the site is assumed to be in general accordance with the *AJC Waste Management Plan and Recycling Implantation* (Assetlink 2008) except where details of this plan have been superseded by more recent information obtained in monthly waste data for the site. Waste storage units as understood to be currently provided to the site are listed below:

- General waste (collection for race meetings) – 240L x 523
- General waste (normal operation) – variable numbers of 240L bins
- Cardboard recycling – 660 L x 33 and 1100 L x 40
- Comingle recycling (kitchens/ office/ bars) - Red 240L x 200
- Large events cardboard and general waste – Bulk bins combination of $15m^3$ and $3m^3$ units
- Glass and comingled recycling – 10 m^3 bulk bins x 3. The bulk bins are then transported to Visy Smithfield for sorting.

The *AJC Waste Management Plan and Recycling Implantation* includes 80 x 240 L bins for the purpose of collection of food waste from catering at back of house, but this is not the current case. No organics collection currently occurs.

6.2 Waste storage after refurbishment

Waste storage estimates have been calculated based on future waste generation estimates for a peak 'Doncaster Day' race day event.

In order to calculate the required bin volumes and estimated increase in number of bins required on site some waste densities per bin have been applied:

- non-compacted 'Commercial - Rubbish (mixed)' (160 kg / m^3);
- non-compacted Cardboard (50 kg / m^3); and
- compacted Glass (1565 kg / m^3, on site glass crusher which reduces volume by factor 8).

Table 3 indicates the estimated increase in number of bins required due to the refurbishment. Note that the use of bulk bins for general waste and comingled recycling as discussed in Section 6.1 is to continue.

Table 3 Current and future number of bins required

Estimates of # bins required	Current	Future	Increase
Gen Waste 660L	33	43	1
Cardboard 660L	40	52	1
Cardboard 1100L	3	3	0
General race meetings 240 L	523	684	152
Bottle Cycler Glass	3	3	0

'General race meetings' bins refer to the indicated current 500 to 600 240L bins on peak race days spread across the site for spectators to dispose of waste. The 660L and 1100L bins as well as bottle cycler glass bins refer to 'back of house' waste collection.

To calculate estimated waste storage areas Plan Area Bin sizes as provided in the City of Sydney Waste Policy were used, multiplied by a factor 2 to allow for wheeling and manoeuvring the bins in and out of the storage area.

Table 4 Bin capacity and related plan area

Bin Capacity (L)	Plan Area Bin (m^2)
240	0.43
660	0.96
1000	1.58
1500	1.62
3000	3.96

The total required waste storage areas per bin type are provided in the following table. The estimates do not include space required for e.g. loading and turning of trucks and access to the storage area. It is anticipated that the site will have a basement waste storage area under both grandstands and under the Theatre of the Horse; with the largest storage area under the Paddock grandstand as the main kitchen for the Randwick Racecourse will be located in this building.

Table 5 Waste storage area requirements

Waste Storage Area Estimate	m^2
Gen Waste 660L	82.6
Cardboard 660L	99.9
Cardboard 1100L	9.5
General race meetings	588.2
Bottle Cycler Glass	0.9
Total	**781**

6.3 Waste management – reuse and recycling

Current waste management strategies will be continued and expanded, such as:

- Separate back of house collection by means of different coloured bins for cardboard, glass and general waste;
- Glass crushers for race days and business events to reduce the disposable volume of empty bottles;
- Cardboard bailed onsite by means of an electric bailer to facilitate recycling;
- Mobile bulk bins / compactors parked on site on major race days with a processing capacity of 10 tonnes a day each;
- Additional mobile skip bins for glass on Carnival Race Days;

- Off-site disposal of general back and front of house waste stream to Material Recovery Facility (MRF), resulting in high diversion (target: 80%) from landfill;
- Excess edible food from race days and other events donated to charity.

A number of additional waste management strategies are being considered, for example:

- Back of house organic food collection (colour coded bin);
- On/off site composting of organic and biodegradable waste generated;
- Back of house paper collection (colour coded bin);
- Increased back of house (non-biodegradable) recyclable plastic collection;
- Biodegradable plastic / paper packaging for vendor food items.

6.4 Waste management – handling, storage and disposal

Current waste handling practices will be expanded; with colour coded bins used for general, cardboard and glass waste; and glass crushers and cardboard bailing in appropriate areas. Organic waste collection in specially marked bins will be implemented where feasible at back of house locations.

On major race / events days mobile compactors will be parked on site with approximately 220 staff at hand to assist with collection of full bins and replace them by empty ones. Mobile skip bins may be used during major events to hold glass waste. The large volumes of general waste removed from the site (which will contain significant volumes of recyclables) will be transported to an appropriately licensed Material Recovery Facility (MRF) for separation and diversion of recyclables (e.g. PET bottles and glass) from landfill.

Back of house waste and event waste not immediately transferred to a mobile compactor will be stored in the dedicated waste storage areas in the basements of the two grandstands and theatre of the horse. Waste will be collected from these basements by truck and transported off site to an advanced waste treatment facility or MRF for separation and diversion from landfill.

Waste vehicles will enter and exit the site through the Doncaster Street entrance to the site and enter the grandstand and theatre of the horse loading dock areas through designated sealed access routes.

7 Recommendations

Recommendations for the refurbishment of the Spectator Precinct in regards to waste management are:

- Sizing of waste storage areas and loading dock areas to the waste storage requirements in Section 5 and to the relevant Australian building standards;
- All waste to be treated or removed from site at the end of each race day or large event;
- Undertake further examination of potential waste treatment strategies during detailed design including;
    - Back of house organic food collection (colour coded bin);
    - On/off site composting of organic and biodegradable waste generated;
    - Back of house paper collection (colour coded bin);
    - Increased back of house (non-biodegradable) recyclable plastic collection;
    - Biodegradable plastic / paper packaging for vendor food items.
- Waste transportation from the site to be via waste truck or mobile compactor vehicle;
- Waste vehicles to enter and exit the site through the Doncaster Street entrance to the site and enter the grandstand and theatre of the horse loading dock areas through designated sealed access routes.

8 Conclusion

The waste generation and impacts of waste from the proposed refurbishment of the Spectator Precinct is assessed to be acceptable where the recommendations in Section 7 are implemented on the site. The predicted waste generation from the site is expected to be increased over the existing condition by the same factor as the increase in patronage.

This Waste Management Plan meets the requirements of DGR 6 in response to waste.