



Sydney Showground Main Arena Redevelopment

Environmental Assessment

Prepared on behalf of the Royal Agricultural Society (NSW)

MP10_145

October 2010 - SUBMITTED FOR PUBLIC EXHIBITION



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Certification

This report has been authored by Urbis, with input from a number of other expert consultants, on behalf of Royal Agricultural Society (NSW). The accuracy of the information contained herein is to the best of our knowledge not false or misleading. The comments have been based upon information and facts that were correct at the time of writing the report.



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Executive Summary

This Environmental Assessment Report (EA) has been prepared on behalf of the Royal Agricultural Society (NSW) (RAS) and is submitted to the Department of Planning pursuant to Part 3A of the Environmental Planning and Assessment Act, 1979 (the Act). This EA relates to the redevelopment of the Sydney Showground Main Arena (Showground Main Arena) within Sydney Olympic Park to allow for its enhanced use as a multi-purpose cultural and sporting event venue.

The Major project

The Major Project Application seeks approval for:

- Reconfiguration of the Showground Main Arena into an oval capable of accommodating an enhanced range of sporting and cultural events in three modes: Show mode; Concert mode; and Sporting mode.
- Increase in seats to accommodate up to 23,000 seated and 2,000 standing, to a total of 25,000 patrons (gross) within new open air and undercover grandstand areas. This includes refurbishment of existing seating and stands as well as the construction of new stands and associated roofs. Whilst there is an increase to seating capacity, there is no increase to the overall current maximum capacity of the Sydney Showground Arena.
- The proposed new stands comprise a north-west stand for Corporate Spectators and Media; a south-east stand for General Admission and Members; and a small north stand for General Admission and Members.
- New on-grade lower seating tier to the eastern half of the Showground Main Arena.
- Installation of a new video board and PA system.
- Increase in size and upgrade of facilities to the existing Level 2 concourse to include new amenities blocks and built-in food and beverage facilities.
- Two new light towers to replace the two existing eastern end light towers.
- New retractable perimeter fencing on the southern and western sides of the grounds.
- New entry structures and egress gates on various perimeter points of the ground.
- New small grassed seating 'hill' to the far east of the seating tier underneath the scoreboard.
- New pitch access vomitory to the northern side of the field.
- A 'green wall' – a vegetated screen to the outer sides of all three new stands.
- Minor internal refurbishment works to existing areas of the facility.

The Site

The Major Project Application relates to the Showground Main Arena within Sydney Olympic Park and is legally described as Lot 1121 in DP 1142724. The Showground Main Arena is located in the north-eastern quadrant of Sydney Olympic Park.

Environmental Assessment

The relevant environmental planning instruments (EPIs) and policies and the considerations contained with the Director General's Requirements (DGRS) have been addressed with the EA.

The proposal entails utilising where possible, the existing infrastructure of the Showground Main Arena and will be capable of enhancing the range of sporting and cultural events as well as enhancing the Showground Main Arena event opportunities during the Royal Easter Show.

Architecturally, the design has been the subject of the SOPA Design Review Panel and incorporates an important underlying theme of retaining the “agricultural soul” of the Showground Main Arena, reflecting its cultural and historical association with the Royal Agricultural Society.

The proposed additions will respect the existing architectural massing and style of the structure and will represent an appropriate addition to the context of the Showground precinct and the Sydney Olympic Park setting, maintaining the overall presence of Sydney Olympic Park.

Impacts to wind conditions conclude that Stage 1, Stage 1A (if implemented) and Stage 2 of the redevelopment will not impact on existing wind conditions within the public domain and that wind conditions will be suitable for the intended uses of the Showground Main Arena.

Traffic impacts associated with proposal are assessed to not result in any additional impacts on the operations of the road network and as such no upgrades or improvements are warranted as a result of the project. It is important to understand that the current capacities of the Showground Main Arena do not increase in overall capacity, maintaining the current volumes of patrons visiting Sydney Olympic Park overall. It is proposed to continue to provide special event public transport services in accordance with current transport management arrangements in place in consultation with NSW public transport agencies and SOPA.

Potential noise impacts have been investigated with reference to the SOPA Draft Noise Management Plan, taking into account the various event modes of the Showground Main Arena and the impacts upon residential receivers external to Sydney Olympic Park and future residential receivers within Sydney Olympic Park; as well as commercial receivers within Sydney Olympic Park. Acoustic impacts are assessed to be satisfactory providing that certain acoustic measures be implemented.

The proposed redevelopment of the Showground Main Arena aims to enhance the major event hosting capabilities of Sydney Olympic Park and consideration to the operational issues associated with major events will ensure that major events held at the Showground Main Arena and construction of the facility will minimise potential impacts on the operations of Sydney Olympic Park.

In recognition of the importance and significance of the current operations of the Showground Main Arena, the Showground Main Arena will continue to host the Royal Easter Show in 2011. Accordingly, construction programming and management must be capable to working within this operational need of the Arena. The overall redevelopment of the Showground Main Arena will be undertaken within three phases: an Early works package that will be subject to a separate Part 4 Development Application; whilst all redevelopment works associated with this Part 3A application will be constructed in two stages, dependent on funding commitments.

1 Introduction

1.1 Background

This Environmental Assessment Report (EA) has been prepared on behalf of the Royal Agricultural Society (NSW) (RAS) and is submitted to the Department of Planning pursuant to Part 3A of the Environmental Planning and Assessment Act, 1979 (the Act). This EA relates to the redevelopment of the Sydney Showground Main Arena (Showground Main Arena) within Sydney Olympic Park to allow for its enhanced use as a multi-purpose cultural and sporting event venue.

On the 30th of August 2010, the Director General, as delegate for the Minister for Planning declared the proposal to be a Major Project and that Part 3A of the Environmental Planning and Assessment Act, 1979 applies. The project was identified as MP10_0145.

The EA has been prepared in accordance with the provisions of Part 3A of the Act and the Director General's Requirements (DGRS) issued on the 16 September 2010. A copy of the DGRS is enclosed at **Appendix A**.

In order to get to the Part 3A lodgement phase the genesis of the project dates to 2008 when Industry & Investment NSW facilitated a grant funding application to the State Government which was subsequently successful.

1.2 The Proposed Development

The Project Application relates to the redevelopment of the Sydney Showground Main Arena (Showground Main Arena) within Sydney Olympic Park to allow for its enhanced use as a multi-purpose cultural and sporting event venue.

In summary, the Major Project Application seeks approval for:

- Reconfiguration of the Showground Main Arena into an oval capable of accommodating an enhanced range of sporting and cultural events in three modes: Show mode; Concert mode; and Sporting mode.
- Increase in seats to accommodate up to 23,000 seated and 2,000 standing, to a total of 25,000 patrons (gross) within new open air and undercover grandstand areas. This includes refurbishment of existing seating and stands as well as the construction of new stands and associated roofs. Whilst there is an increase to seating capacity, there is no increase to the overall current maximum capacity of the Sydney Showground Arena.
- The proposed new stands comprise a north-west stand for Corporate Spectators and Media; a south-east stand for General Admission and Members; and a small north stand for General Admission and Members.
- New on-grade lower seating tier to the eastern half of the Showground Main Arena.
- Installation of a new video board and PA system.
- Increase in size and upgrade of facilities to the existing Level 2 concourse to include new amenities blocks and built-in food and beverage facilities.
- Two new light towers to replace the two existing eastern end light towers.
- New retractable perimeter fencing on the southern and western sides of the grounds.
- New entry structures and egress gates on various perimeter points of the ground.
- New small grassed seating 'hill' to the far east of the seating tier underneath the scoreboard.
- New pitch access vomitory to the northern side of the field.

- A 'green wall' – a vegetated screen to the outer sides of all three new stands.
- Minor internal refurbishment works to existing areas of facility.

The basis of the design of the proposed redeveloped Showground Main Arena has been to build on the success of the existing venue and enhance its function as multi-purpose, boutique oval based stadium. Whilst the proposal entails expanding the facility to create up to 25,000 (seated and standing) person capacities, there is no increase to the overall current maximum capacity of the Sydney Showground Arena taking into account the standing capacities of the facility.

The proposal entails utilising where possible, the existing infrastructure of the Showground Main Arena and will be capable of enhancing the range of sporting and cultural events including AFL matches which dictate the reconfiguration of the arena surface, as well as enhancing the Showground Main Arena event opportunities during the Royal Easter Show. Architecturally, the design has been the subject of the SOPA Design Review Panel and incorporates an important underlying theme of retaining the "agricultural soul" of the Showground Main Arena, reflecting its cultural and historical association with the Royal Agricultural Society.

The overall redevelopment of the Showground Main Arena will be undertaken within three phases:

- Early works that are to be the subject of a separate Part 4 Development Application (DA). The early works package will entail demolition, excavation, deconstruction of lighting towers, site set up and services deconstruction as illustrated in the submitted demolition plan contained within a Construction Management Plan under **Appendix B**. The consent authority for the Part 4 DA is SOPA. These works aim to occur prior to the proposed redevelopment that is sought under the Project Application.
- At this point in time, it is proposed to construct all redevelopment works associated with this Part 3A application in two stages. However, Stage 1 will be built using one of two options for the south-east stand, depending on the final allocation of the project budget. For clarity, these stages are known as Stage 1 and Stage 1A.
- Stage 1 of the Part 3A works will reflect the existing budget commitments of \$60 million and includes the majority of the above works but with the following changes:
 - The new south-east stand would consist of interim, demountable scaffold seating and will not be roofed;
 - The new north stand would consist of interim, demountable scaffold seating and will not be roofed;
 - The grassed mound to the eastern end would not be built in this stage.
- As an alternative option to Stage 1, in the event that additional funding becomes available, Stage 1a of the Part 3A works will be built. In broad terms, the work is similar to that proposed for Stage 1 with the following exceptions:
 - The new south-east stand will be constructed in its final form using a combination concrete and steel structure. The stand will not be roofed.
 - The new north stand will be constructed in its final form using a combination concrete and steel structure. The stand will not be roofed.
 - The grassed mound to the eastern end will be built in this stage.
- Stage 2 of the Part 3A works will be undertaken upon budget commitments of up to total budget of \$73 million and relates to the total project described above, including that the permanent seats to the south-east and north stands and associated roofs will be constructed.

1.3 The Proponent and Consultant Team

The Royal Agricultural Society (NSW) is the proponent for this project. The consultant team assisting in the preparation of the Major Project and technical reports is detailed below:

- Populous – Architectural Design and Public Domain; and Architectural Statement Report dated 22 October 2010;
- APP - Project Management and Construction Staging and Management, and Waste Management Report dated 20 October 2010;
- Jeffery & Katauskas Pty Ltd - Preliminary Geotechnical Assessment dated 22 October 2010;
- Environmental Investigation Services – Stage 1 Preliminary Environmental Site Assessment dated October 2010;
- Aurecon - Environmental Sustainability Design letter dated 5 October 2010; Fire Engineering Strategy Brief Report dated 22 October 2010; and Lighting Design Report dated 22 October 2010;
- Hyder Consulting Pty Ltd - Utilities Report dated 22 October 2010 and Stormwater Drainage Report dated 22 October 2010;
- Halcrow - Traffic and Transport Impact Assessment Report dated 20 October 2010;
- Windtech - Wind Impact Assessment Report dated 20 October 2010;
- Morris Goding - Accessibility Report dated 22 October 2010;
- Wilkinson Murray - Acoustic Assessment Report dated October 2010;
- McKenzie Group Consulting - Building Code of Australia Report dated 22 October 2010.

1.4 Value of the Project

Capital Investment Value of the Project (CIV) is defined in the State Environmental Planning Policy (Major Project Development) 2005 as:

capital investment value of a development or project includes all costs necessary to establish and operate the project, including the design and construction of buildings, structures, associated infrastructure and fixed or mobile plant and equipment, other than the following costs:

- (a) amounts payable, or the cost of land dedicated or any other benefit provided, under a condition imposed under Division 6 or 6A of Part 4 of the Act or a planning agreement under that Division,
- (b) costs relating to any part of the development or project that is the subject of a separate development consent or project approval,
- (c) land costs (including any costs of marketing and selling land),
- (d) GST (within the meaning of A New Tax System (Goods and Services Tax) Act 1999 of the Commonwealth).

The total CIV of the proposal is estimated to be approximately \$73 million. A Quantitative Surveyors Statement verifying the CIV of the project is enclosed in **Appendix C**.

1.5 Pre- Application Meetings

Two pre-application meetings were held with relevant government authorities to inform government officers of the proposal and to gain an understanding of the key planning issues:

- Meeting on the 16th of August 2010 between represents of the proponent (APP, Urbis and NSW Industry & Investment) and Department of Planning (DoP) officers.
- Meeting on the 17th of August 2010 between represents of the proponent (APP and Urbis) with Sydney Olympic Park Authority officers to canvas potential issues and considerations of SOPA in relation to the project.

These meetings included discussions on the critical timing of the project. In recognition of the importance and significance of the current operations of the Showground Main Arena, the Showground Main Arena will continue to host the Royal Easter Show in 2011. Accordingly, construction programming and management is to be undertaken to ensure the operational need of the Arena are not compromised.

Design meetings were conducted with the SOPA Design Review Panel (DRP) as follows:

- Meeting with SOPA Design Review Panel (DRP) representative, the Executive Manager of Design on 1st of September with Populous and APP to discuss presentation requirements for the SOPA Design Review Panel scheduled for 10th of September 2010.
- Presentation to the SOPA DRP on the 10th of September 2010 (Populous, APP, RAS, Urbis).
- A final presentation to the SOPA DRP on Tuesday, 12th October to seek DRP endorsement of the scheme for public exhibition as part of the EA process.

The comments received from the SOPA Design Review Panel held on the 10th of September formally advised that the DRP was generally supportive of the principle of adapting the existing venue to increase flexibility for events. The elements of the scheme that DRP identified to be positive entail:

- intention to respect / celebrate the 'agricultural soul' of the facility;
- preservation of the continuous enclosing concourse;
- reconfiguration of the grassed berms to enlarge the field of plan; and
- preservation of the outer footprint of the venue.

The DRP also advised that further consideration of the proposal in respect to the following should be undertaken:

- Resolution of the roof structure;
- Clarification of the scope of early stage works;
- Planting and shading around the external base of the venue;
- Additional strategies for celebrating the "agricultural soul" other than the proposed "green wall".

Further commentary in respect to the DRP advice, including comments received after the final presentation on 12th October and the architectural response reflected in the submitted scheme is discussed in Section 6 and **Appendix V**.

2 Site and Surrounds

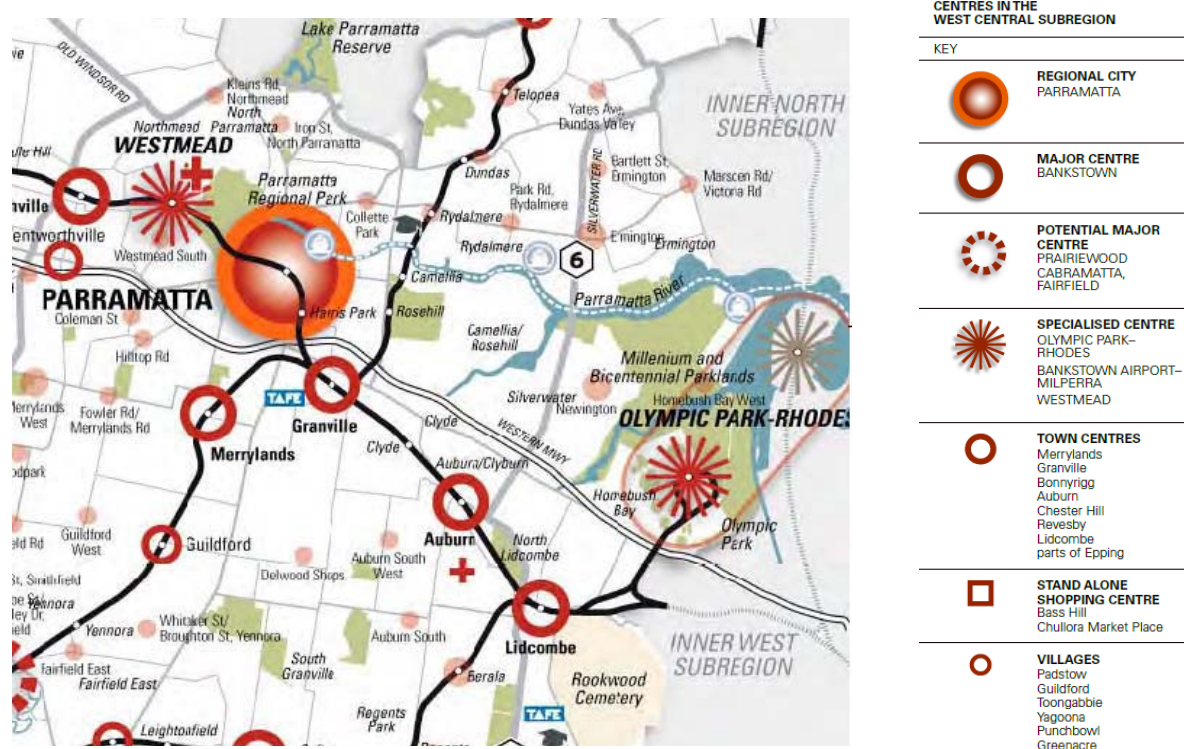
2.1 Regional Context

The Sydney Showground Arena is situated within Sydney Olympic Park. Sydney Olympic Park is a significant recreational, sporting and cultural asset in metropolitan Sydney, featuring a range of quality sports and entertainment venues.

Sydney Olympic Park has also become an important economic centre, accommodating over 100 businesses and continues to attract major investment in commercial, sporting, education and hospitality development. In conjunction with the Rhodes centre, "Olympic Park – Rhodes" forms a large "specialised centre" that serves both the Inner West Subregion and the West Central Subregion.

This specialised centre has excellent proximity to the regional City of Parramatta to the west and the Sydney CBD to the east. These strategic advantages have contributed to NSW Government's strategic plans for Sydney Olympic Park to broaden the range of residential, educational and business park type development without impacting on the centre's primary role as a major sporting and cultural venue.

Figure 1 – Regional Context (extract from the Draft West Central Subregional Strategy)



2.2 Local Context

The Showground Main Arena is located in the north-eastern quadrant of Sydney Olympic Park. Sydney Olympic Park is a significant recreational, sporting and cultural asset in metropolitan Sydney, featuring a range of quality sports and entertainment venues. Sydney Olympic Park has also become an important economic centre, accommodating over 100 businesses and continues to attract major investment in commercial, sporting, education and hospitality development. The Sydney Olympic Park Masterplan also envisages a residential element, and multi-unit housing is currently under construction.

The Showground Main Arena is surrounded by activity zones associated with the Royal Easter Show which cater for a range of secondary show activities, accommodated within a range of buildings as illustrated in the figure below.

Locally, the Sydney Showground Precinct has an interface with the following precincts within Sydney Olympic Park, as described in the Sydney Olympic Park Master Plan 2030:

- Stadia Precinct to the west, across from Olympic Boulevard. This precinct host main events within the ACER arena and ANZ Stadium.
- Central Precinct to the south, across from Murray Rose Avenue. This precinct includes the Olympic Park railway station immediately south of the Showground precinct and forms a central core of commercial buildings, including hotels with a residential area to the fringe. It is designated to also become the new commercial heart of Sydney Olympic Park.
- General parkland areas to the north across Kevin Coombs Avenue and to the east, across from Australia Avenue. The northern portion of the Parkview Precinct also abuts the Sydney Showground precinct to the east. The Parkview Precinct is identified be in a predominantly residential area with some community uses.

In terms of access to the site, the greater site is serviced by:

- Olympic Park railway station to the south of the Showground precinct;
- Bus and taxi drop off on Australia Avenue;
- Private vehicular access from the local road network.

Figure 2 – Photos of the site and surrounds



Picture 1 – The Showground Main Arena viewed from Grand Parade looking west



Picture 2 – Charles Moses Stadium across from Grand Parade to the south of the site



Picture 3 – Grand Parade landscape and footpath treatment on southern side of site



Picture 4 – Skate park west of the site

Figure 3 – Aerial View of Sydney Olympic Park



Aerial photo courtesy of SOPA

2.3 Site Description

The Showground Main Arena forms part of the Sydney Showground Precinct as identified in the Sydney Olympic Park Masterplan 2030. The Precinct is defined by Olympic Boulevard and Murray Rose Avenue, Australia Avenue and Kevin Coombs Avenue. An aerial of the site indicating the extent of the site for this proposal is shown in **Figure 4** below. The legal description of the site is part of Lot 1121 in DP 1142724 as illustrated in **Figure 5** below (source Sydney Olympic Park Authority).

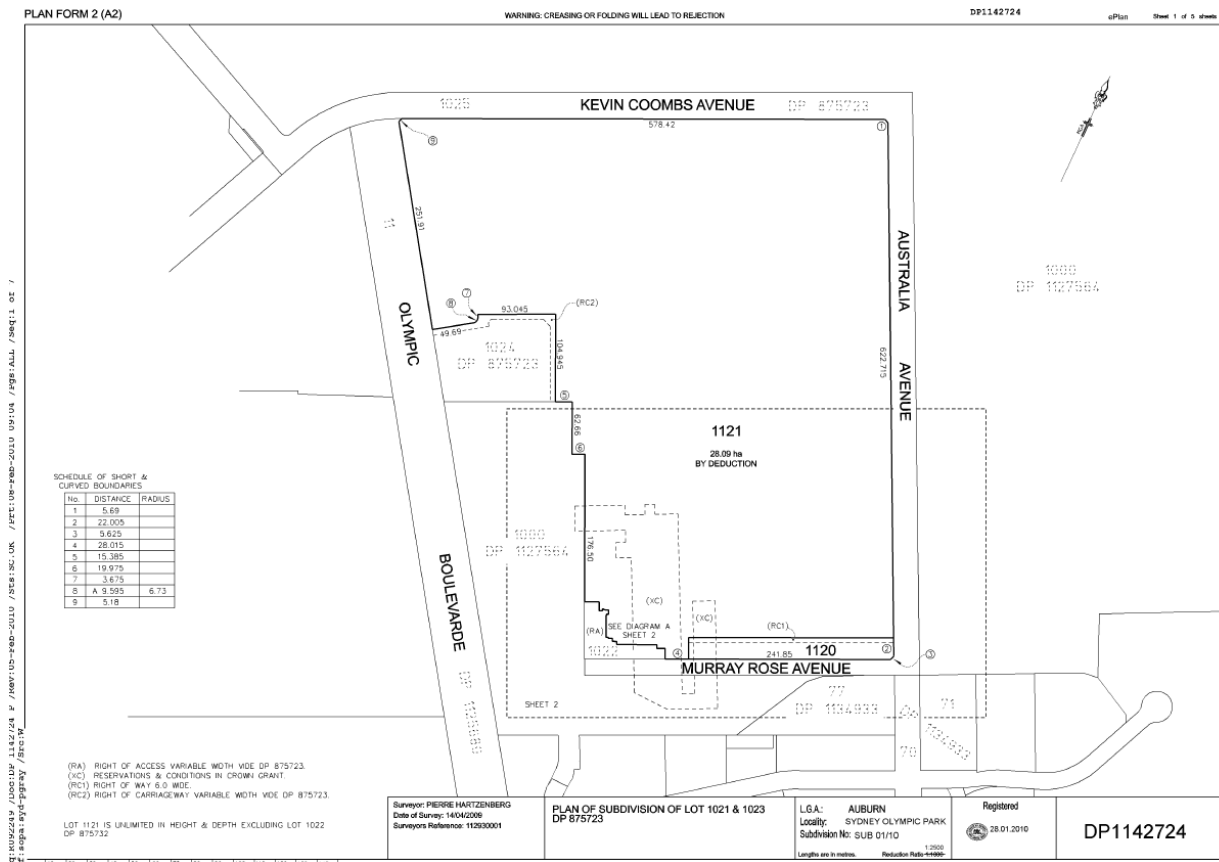
Figure 4 – Aerial View of the Sydney Showground Precinct.

The Showground Main Arena is shown located centrally within the Precinct



Aerial photo courtesy of SOPA

Figure 5 – Deposited Plan



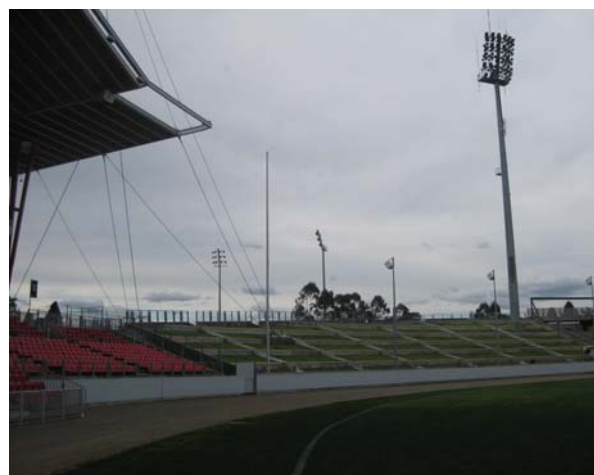
The Showground Main Arena was designed to accommodate the baseball games of the 2000 Sydney Olympic and Para Olympic Games and has become the primary activity zone for the Royal Easter Show.

The existing Showground Main Arena is a bowl formation of which one third of the bowl comprises a grass berm and the remainder is made of three 3 concrete seating tiers. Temporary seats are located on the grass berm to the south east of the field of play.

Figure 6 – Photos of the Sydney Showground Arena



Picture 5 – Existing stands and lighting towers



Picture 6 – Existing stand and grassed berm seating also showing lighting tower to be replaced/relocated

3 Description of Proposal

3.1 Redevelopment Need

The Showground Main Arena is an under-utilised public recreational and cultural asset that is potentially capable of accommodating a range of additional sporting and cultural events. This can be achieved by implementing relatively modest improvements to facilitate enhancement of opportunities for adaptive multiple-use. Central to these improvements are increases in arena seating capacity and reconfiguration of the existing arena surface.

3.2 Project Overview

The Showground Main Arena was originally constructed for the 2000 Sydney Olympic and Para Olympic Games primarily as the baseball venue for the Game with a legacy of forming the centrepiece of the new Sydney Showgrounds relocated from Moore Park and the conducting of the Royal Easter Show and other entertainment events.

The basis of the design of the proposed redeveloped Showground Main Arena has been to build on the success of the existing venue and expand where necessary to create a 25,000 person capacity multi-purpose boutique oval based stadium. This reconfiguration in essence represents carrying out alterations and additions that will utilise where possible, the existing infrastructure of the Showground Main Arena and enhance its multi-use capability in 3 broad modes of use:

- Showground mode.
- Sporting mode.
- Concert event mode.

Other considerations for the redeveloped Showground Main Arena are as follows:

- Enhance the revenue generating opportunity for the stadium when hosting events by providing an increased mix of corporate, sponsor and members accommodation both within the existing stands and in the new north east and south east stands.
- Improve back of house circulation.
- Meet minimum venue standards for the RAS, AFL and other user groups, including television broadcasting.
- Provide additional seating, public amenity and revenue options for the Showground Main Arena both during the Royal Easter Show and other community, cultural and entertainment events.
- Provide a state of the art high definition video replay screen and stadium sound system to provide a unique event day experience for all patrons.
- Utilise as much of the existing stadium infrastructure as possible.
- Provide a cost effective design solution that enhances the Showground Main Arena.
- Inclusion of a removable security fence comprising of pivoting sections that allow full flexibility between ticketed and non-ticketed modes.
- Redefine the lower seating bowl and provide a consistent lower seating bowl through the regrading of the earth tiered berm to the eastern half of the Showground Main Arena and the extension of the existing lower seating tier.
- Constraints during the construction phase while holding major events like the Royal Easter Show and Big Day Out.

3.3 Description of Proposed Works

The redevelopment involves a capital investment value (CIV) of approximately \$73m and will entail the following alterations and additions to the Showground Main Arena:

- Reconfiguration of the Showground Main Arena into a symmetrical oval capable of accommodating an enhanced range of sporting and cultural events. The reconfiguration will require the extension of the existing field into existing eastern berms by cutting into and resculpting of the eastern terraced berms to accommodate the extension of the existing western seating tier.
- Retention of an existing track and reconfiguration to accommodate a new eastern lower tier.
- New lower tier to the eastern half of the ground.
- New north east stand for corporate patrons and media.
- New south east and northern stand for General Admission and Members seating.
- Installation of a new video board and PA system.
- Increase in sporting mode capacity up to 25,000 patrons (gross) accommodated within new open air and undercover grandstand seating and standing areas. This includes internal refurbishment of existing stands and alteration to existing tiered seating and as well as the construction of new stands. Whilst there is an increase to seating capacity, there is no increase to the overall current maximum capacity of the Sydney Showground Arena.
- Dedicated broadcast, coaches and media stand on the centre line of the new oval on the northern side of the ground.
- Open air sport bar on centre line of the oval on the southern side of the ground.
- New perimeter fencing, entry structures, egress gates and perimeter security.

Overall, the reconfiguration of the Showground Main Arena will enable the facility to be more effectively used in three modes:

- Showground mode – for continued events hosted by the Royal Agricultural Society.
- Sporting mode – for a range of sporting events and activities.
- Concert mode – for a range of musical events and activities.

3.3.1 Existing and Proposed Capacity

The current capacity of the Sydney Showground Arena varies dependent on the mode of use. The current maximum capacity is greatest during concert events, which accommodate 30,021 persons. The proposed alterations and additions to the Sydney Showground Arena do not entail an increase to this current overall capacity as identified below. The following provides a summary of the various event modes and the respective current and proposed capacities.

Showground Mode	
Existing seats	13,570
Existing Maximum capacity	18,000
Proposed Seats	20,200
Proposed Maximum Capacity	22,200
Concert Mode	
Existing seats	10,198
Existing Maximum Capacity	30,021
Proposed Seats	10,198
Proposed Maximum Capacity	30,021

Sporting Mode

Existing seats	14,026
Existing Maximum Capacity	17,000
Proposed Seats	23,000(min)
Proposed Maximum Capacity	25,000(max)

Whilst the proposal entails an increase in seats from 14,026 seats to 23,000 seats in sporting mode; or 13,570 seats to 20,200 seats in showground mode, the overall maximum capacity of the Sydney Showground Arena is not proposed to increase, maintaining the current volumes of patrons visiting Sydney Olympic Park overall.

The redevelopment of the Sydney Showground Main Arena will entail a minor increase in staff associated with the new food and beverage facilities in Stage 2. Currently, staffing levels for each event mode varies and are approximately:

- Sporting mode – 600 in the Showground Main Arena.
- Concert mode – 1000 in the Showground Main Arena.
- Royal Easter Show Mode – some 11,000 to 16,000 across the entire Showground precinct.

At this stage, detailed proposed staff numbers cannot be accurately determined but it is assumed that an additional 100 – 200 staff will be required for back of house and service operations.

An illustrative concept image of the redeveloped arena is shown in **Figure 7** below. It is noted that the redevelopment is accommodated within the curtilage of the existing Showground Main Arena

Figure 7 – Illustrative Concept showing Redeveloped Showground Main Arena



4 Director-General's Requirements

The Director General's Requirements (DGR's) were issued on the 16th September 2010. The following table lists all the DGR's and provides a reference as to where each of the issues are addressed in this Environmental Assessment Report. A full copy of the DGR's is enclosed at **Appendix A**.

	Requirement	Report Reference
Key Issues	1. Relevant EPI's policies and guidelines Planning provisions applying to the site, including permissibility and the provisions of all plans and policies including: ▪ State Environmental Planning Policy (Major Development) 2005; ▪ State Environmental Planning Policy No. 55 - Remediation of Land; ▪ Sydney Olympic Park Master Plan 2030; ▪ Sydney Olympic Park Access Guidelines 2008; ▪ Sydney Olympic Park Major Event Impact Assessment Guidelines; ▪ Sydney Olympic Park Guidelines for Outdoor Advertising, Identification and Promotional Signage; ▪ Draft Sydney Olympic Park Noise Management Plan; ▪ Sydney Metropolitan Strategy and the draft West Central Subregional Strategy; and ▪ The nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for any non-compliance.	Section 5.1
	2. Built Form and Urban Design ▪ Analysis of the proposal to include existing topography, bulk and scale of existing developments (including existing grandstands), building heights, view corridors and streetscape, and address vehicular and pedestrian connectivity, entry points, traffic management and hierarchy; ▪ Include proposed patron capacity (e.g seating, standing, staff levels) of the whole stadium and during all event modes (e.g football mode, concert mode) and whether capacity numbers is limited; ▪ The form and external appearance of the redeveloped Sydney Showground Main Arena; ▪ Design principles incorporated into the development in terms of sunlight, natural ventilation, reflectivity, visual and acoustic privacy, safety and security, and water and energy efficiency; ▪ Wind Impact Analysis; ▪ Detailed plans, elevations and sections; ▪ View analysis inclusive of photomontages and perspectives of key elements and views of the development from key locations; ▪ Shadow diagrams; ▪ Details on likely pedestrian Levels of Service (LoS) during ingress and egress, peak periods and how the design accommodates LoS; ▪ Details on external treatment and finishes, including a materials sample board; ▪ Details on how services, including but limited to waste management, loading zones, and mechanical plants are integrated into the design of the development.	Section 5 <i>Appendix D</i> <i>Appendix E</i> <i>Appendix F</i> <i>Appendix G</i> <i>Appendix H</i> <i>Appendix D</i> <i>Appendix I</i> Section 5
	3. Public Domain ▪ Provide a Public Domain Plan that identifies proposed open space, public domain and pedestrian linkages with and between other public domain spaces and adjoining showground areas;	Section 5 <i>Appendix D</i>

	Requirement	Report Reference
	▪ Details on the interface between the development and public domain, and the impact upon the existing public domain.	
	4. Traffic, Public Transport and Car Parking ▪ Details of daily and peak traffic movements likely to be generated, including impact on nearby intersections and the need, and associated funding, for upgrading or road improvement works (if required); ▪ Details of proposed access and parking provisions including compliance with the requirements of the relevant Australian Standards (i.e turn paths, sign distance requirements, aisle widths, etc); ▪ Proposed number of car parking spaces and compliance with the appropriate parking codes; ▪ Details of service vehicle movements including vehicle type and likely arrival and departure times; ▪ Impact on non-car travel modes including public transport use, walking and cycling, and the provision of facilities to increase the use of non-car modes for travel to and from the site; ▪ Provision of a Traffic Management Plan for all demolition / construction activities; ▪ Details of pedestrian alignments and access points to the development site during construction and operation.	Section 5 <i>Appendix J</i>
	5. Acoustics & Noise Impacts ▪ Construction and operational noise impacts addressed against relevant guidelines and legislation, including but not limited to Draft Sydney Olympic Park Noise Management Plan, NSW DECCW guidelines, and in consultation with relevant agencies, where appropriate.	Section 5 <i>Appendix K</i>
	6. Lighting Emission ▪ Location of new light towers and specifications; ▪ Demonstrate that the luminance will not exceed relevant guidelines and legislation; ▪ Demonstrate that illumination levels meet appropriate Australian Standards for lighting of public domain spaces and stadia.	Section 5 <i>Appendix L</i>
	7. Waste Management ▪ Prepare a Waste Management Plan addressing issues during demolition, construction and operational stages. The Plan shall include likely quantities, proposed disposal destinations and best practices for safe handling and disposal in accordance with WorkCover's Occupational Health and Safety Requirements.	Section 5 <i>Appendix B</i>
	8. Infrastructure and Utilities ▪ Address the capacity and requirements of the development for water supply, wastewater, stormwater, electricity, waste disposal, communications and gas. Any staging, if any, of infrastructure works should be identified accordingly.	Section 5 <i>Appendix M</i>
	9. Ecologically Sustainable Development (ESD) ▪ Identify how the development will incorporate ESD principles, including water management and reuse, energy efficiency, recycling and waste disposal.	Section 5 <i>Appendix N</i>

	Requirement	Report Reference
	10. Construction Management Address all impacts from demolition and construction, in particular on traffic, roads, access, noise, vibration, air quality and stormwater, and in accordance with Australian Standards.	Section 5 <i>Appendix B</i>
	11. Staging Details regarding the staging of the proposed development including any aspects of the development that would be assessed and determined under Part 4 of the EP&A Act.	Section 5 <i>Appendix B</i>
	12. Consultation Undertake an appropriate and justified level of consultation in accordance with the Department's <i>Major Project Community Consultation Guidelines October 2007</i>.	Section 5
	13. Major Events Demonstrate how the proposed development will be constructed and operating during major event periods at Sydney Olympic Park with reference to the <i>Sydney Olympic Park Major Event Impact Assessment Guidelines</i>.	Section 5 <i>Appendix O</i>

In addition to the above DGRS, a Fire Engineering Strategy Brief Report is submitted with the EA, as identified within the response from SOPA in regards to inputs into the DGRS. The Fire Engineering aspects of the proposal are discussed in Section 5 of the EA and **Appendix P**

A Geotechnical Assessment Report is also submitted with the EA to confirm the ground conditions, suitability and required foundation design under **Appendix Q**.

5 Assessment of Key Issues

5.1 Relevant EPIs, Policies and Guidelines

5.1.1 Environmental Planning and Assessment Act 1979

Part 3A of the EP&A Act requires that major projects obtain approval from the Minister for Planning. Development is defined as a 'Major Project' to which Part 3A applies either by being identified within a State Environmental Planning Policy (see SEPP Major Projects below), or by order of the Minister published in the Gazette.

The Major Project approval process provides for the Minister for Planning to undertake a co-ordinated, whole of government assessment of the merits of a proposal that has significance to the State or region.

5.1.2 State Environmental Planning Policy (Major Development) 2005

Schedule 3, Part 23 of the State Environmental Planning Policy (Major Development) 2005 identifies Sydney Olympic Park, which includes the Showground Main Arena as a State Significant Site. Development within Sydney Olympic Park with a CIV of more than \$10 million is subject to the Part 3A process under the EP&A Act.

The proposed Showground Main Arena redevelopment has a CIV of \$73 million, confirming that the project falls within the ambit of Schedule of the SEPP. Pursuant to Clause 6 of the Major Development SEPP, the Director General declared on the 30th August 2010 that project will be subject to the provisions of the Part 3A of the EP&A Act.

Other relevant provisions of the Major Projects SEPP that apply to the project are as follows:

- Permissibility – the site is zoned B4 Mixed Use. The proposal does not alter the approved use of the land and is consistent with the objectives and permissible land uses of the B4 zone that aim to promote the major events capability of the Sydney Olympic Park site to ensure it becomes a premium destination for major events.
- Height – there is no maximum height for the site.
- Floor Space Ratio – there is no maximum floor space ratio for the site.

5.1.3 State Environmental Planning Policy No.55 - Remediation of Land

SEPP 55 provides the planning provisions for the remediation of contaminated land. Preliminary environmental site assessment has been undertaken by Environmental Investigation Services (EIS) to assess the potential risk of significant, widespread soil and groundwater contamination of the site. Taking into account the historical use of the site and the current use, EIS has identified that potential contamination at the site would be anticipated to be associated with:

- Potentially contaminated, imported fill material (particularly the fill material used to construct the existing north-east mounds);
- Potential asbestos contamination associated with demolition of the former abattoir buildings/sheds;
- Historical use of the site for commercial/industrial purposes and possible association of fuel storage and use of pesticides;
- Current activities including the use of pesticides around the venue and / or herbicides on the existing grassed oval; and
- Existing in-ground grease traps.

Based on the above findings, EIS has indicated that the potential for significant soil and groundwater contamination at the site is moderate but it is assumed that the site was suitably remediated as part of the overall remediation of Homebush Bay for the 2000 Olympic Games. In this regard, EIS has concluded that there is relatively low risk to site users and the environment under the existing configuration and use due to the following:

- Majority of the areas that are accessed by the public are either paved or grassed which limits the potential for exposure to potential soil contaminants. It is understood that the proposed redevelopment will further reduce the potential for exposure via the installation of new grandstands over the existing grassed fill mounds;
- The existing oval has been capped with a sandy soil suitable to maintain adequate grass cover in which the grass and capping would reduce the potential for exposure to potential soil contaminants; and
- Groundwater is not extracted or utilised at the site.

In this respect, it is assessed that the site is suitable to accommodate the continued use of the site, within the proposed redevelopment scheme.

EIS recommends that a waste classification assessment will be required prior to excavation works and off-site disposal of soil from the site, with soil to be analysed for a range of contaminants. In the event that significant contamination is encountered, a suitable course of action should be implemented, refer to **Appendix R**.

Excavation works will be carried out as part of an early works package, which is subject to a separate Part 4 Development Application to be submitted to SOPA. These works will take into account EIS recommendations for excavation.

5.1.4 State Environmental Planning Policy (Infrastructure) 2007

The Infrastructure SEPP provides a mechanism by which the Roads and Traffic Authority (RTA) is given the opportunity to comment on the impact of a development proposal that meets certain criteria relating to potential traffic generation.

The Project Application is likely to be referred to the RTA, noting that the DoP referred the Preliminary Environmental Assessment to the RTA for inputs in the DGRS. The comments received from the RTA have been incorporated into the DGRS. A copy of the RTA comments is attached in **Appendix A**.

5.1.5 Sydney Regional Environmental Plan - Sydney Harbour Catchment 2005

Sydney Regional Environmental Plan - Sydney Harbour Catchment 2005 (deemed to be a SEPP) relates to Sydney Harbour, including Parramatta River and its tributaries and the Lane Cove River. This instrument includes a range of matters for consideration by consent authorities assessing development within the Sydney Harbour Catchment.

As the site is not within a designated Foreshores and Waterways Area, nor identified as a Strategic Site, the instrument has limited applicability, relating to the planning principles for land within the Sydney Harbour Catchment in general. The following identifies the relevant planning principles and provides a review of the proposal.

- Protection and improvement on the health of the Harbour Catchment
 - The construction of the project will be undertaken in accordance with relevant soil and water management practices to ensure impacts upon water quality will be minimised.

- The cumulative environmental impact of the development within the catchment
 - The proposal entails the upgrading and alterations and additions to an existing facility that is situated within an existing urban environment, as such there is no additional environmental impact to the harbour catchment. As identified above, the construction of the project will be undertaken in accordance with relevant soil and water management practices to ensure impacts upon water quality will be minimised.
- Visual impact to waterways and foreshores
 - Visual impact assessment has been undertaken relative to the views of Sydney Olympic Park from Rhodes across Homebush Bay and Newington across from Haslams Creek as stipulated in the SOPA Master Plan 2030. The visual impact assessment illustrates that the proposed additions will not be readily perceived, with the main difference in view is the location and form of the two eastern light towers that replace the existing light tower. The position of the light towers will be slightly more east and the form of the lighting tower head will be more similar to the existing six light towers to the west. As such, the visual impact of the development will be minimal and is satisfactory.
- Improve water quality of urban run-off

As identified above, the construction of the project will be undertaken in accordance with relevant soil and water management practices to ensure impacts upon water quality will be minimised. The existing project currently incorporates ESD principles to capture urban run off and the new components of the Showground Main Arena will adopt this practice.

- Avoid or minimise disturbance of acid sulphate soils

The preliminary environmental site assessment prepared by EIS included the identification of any risks/hazards associated with urban salinity and acid sulphate soils. It is identified that the potential for acid sulphate soil and salinity potential is to be very low on the basis that:

- The site is located in an area mapped as having “no known occurrence” of acid sulphate soil;
- The type of soil and bedrock in the vicinity of the site is not associated with sulphate soils; and
- The site lies at approximately 11m AHD and acid sulphate soils are not usually associated with soil profiles above 5m AHD.

In this regard, the redevelopment works will not involve the disturbance of acid sulphate soils.

5.1.6 Sydney Olympic Park Master Plan 2030

The Sydney Park Master Plan 2030 (the Master Plan) recently came into affect on the 10 March 2010 and provides a 22 year vision for the development of Sydney Olympic Park. The Master Plan provides a range of guidelines and controls for the future development of the Sydney Olympic Park, which has been considered in the design of the project. An assessment of the project in respect to the relevant provisions is provided in **Appendix S**. In summary, the project meets the provisions of the Master Plan in the following manner:

- The redevelopment will enhance the role of an iconic sports venue and structure;
- The redevelopment will include a range of ESD measures consistent with sustainability principles;
- Landscaping and the public domain areas will be retained;
- Public transport use will be encouraged;
- The design will reinforce the venue's connection with Sydney Olympic Park and connections with the RAS;
- View impacts are appropriate;

- The proposal will enhance the major event capabilities of Sydney Olympic Park; and
- Retention of the Sydney Showground Precinct site configuration and building zone and setbacks.

5.1.7 The Metropolitan Strategy and the Draft West Central Subregional Strategy

The Metropolitan Strategy, *City of Cities: A Plan for Sydney's Future* was released in 2005 to guide the future growth of the Sydney up to 2031. The Metropolitan Strategy is currently under review. Accompanying the Metropolitan Strategy is a range of Draft subregional strategies, in which the Draft West Central Subregional Strategy applies to the site.

The Draft West Central Subregional Strategy provides an overall management and development strategy of the western subregion up to 2031. It provides a basis for coordinating planning and economic development, environmental management, open space systems and targets for dwelling and employment growth in each Local Government Area of the subregion.

In conjunction with Rhodes, Sydney Olympic Park is identified as one of the subregion's specialised centres that perform vital economic and employment roles of metropolitan Sydney. In respect to Sydney Olympic Park itself, it is identified as a major recreational and tourism attraction for the region. Sydney Olympic Park has also become an important economic centre, accommodating over 100 businesses and continues to attract major investment in commercial, sporting, education and hospitality development, whilst maintaining the centre's primary role as a major sporting and cultural venue.

The proposed upgrading, alterations and additions of the Sydney Showground Arena will enhance the role of Sydney Olympic Park as a major sporting and cultural venue by offering new and upgraded spectator facilities and the ability to accommodate a wider range of sporting and cultural events, whilst maintaining the association of the Sydney Showground with the Royal Agricultural Society.

5.1.8 Sydney Olympic Park Access Guidelines 2008

Morris-Goding Accessibility Consulting has undertaken an access review of the architectural plans to provide advice and strategies to maximise reasonable provisions of access for people with disabilities. The development has been reviewed to ensure that ingress and egress, paths of travel, circulation areas and toilets comply with relevant statutory guidelines, including the SOPA Access Guidelines 2008 as well as the Building Code of Australia (BCA) and the Disability Discrimination Act (DDA).

The review has confirmed that the proposed redevelopment demonstrates an appropriate degree of accessibility by demonstrating:

- continuous accessible paths of travel throughout the design; and
- compliance with statutory requirements relating to site access, common area access, and accessible sanitary facilities can be readily achieved.

The Access Review report by Morris-Goding Accessibility Consulting includes a range of recommendations to ensure compliance in the final Construction Certificate drawings and are included within the Draft Statement of Commitments under Section 6 of the EA. Refer to **Appendix T** for further detail.

5.1.9 Sydney Olympic Park Major Event Impact Assessment Guidelines

The SOPA Major Event Impact Assessment Guidelines (MEIAG) provide a framework for SOPA to consider the requirement to apply development conditions to any potential development to be approved within Sydney Olympic Park to ensure:

- the major event capability of Sydney Olympic Park is maintained; and
- the impact of major event activities on existing businesses and other land uses are minimised.

An Events Information Statement (EIS) is provided under **Appendix O** of the EA to assist SOPA with their Major Event Impact Assessment. This EIS relates to workers and patrons visiting the site; car parking; vehicular entry/exit; service vehicles; public domain; construction; hours of operation; and emergency evacuation.

Further consideration to the MEIAG Development Control Requirements is provided in Section 5.16, relating to issues such as road traffic; transport; car parking; event venues; public assets; public spaces; and site operations.

5.1.10 Sydney Olympic Park Guidelines for Outdoor Advertising, Identification and Promotional Signage

This Major Project Application does not include proposed outdoor advertising, identification or promotional signage and as such the Sydney Olympic Park Guidelines for Outdoor Advertising, Identification and Promotional Signage is not required to be addressed. The relevant approvals for any future signage will be sought separately, with consideration to these guidelines.

5.1.11 Draft Sydney Olympic Park Noise Management Plan

The Draft Sydney Olympic Park Noise (DNMP) will provide the framework for regulating and managing noise generation from major events within Sydney Olympic Park. An acoustic impact of the proposal has been assessed against the DNMP by Wilkinson Murray and is discussed in Section 5.8 and **Appendix K**, where it is concluded that noise impact associated with the redevelopment will be satisfactory providing that certain acoustic measures be implemented.

5.2 Built Form and Urban Design Impacts

The Showground Main Arena is an architecturally distinctive venue, featuring grandstands, a suspended, barrel-vaulted roof and lightweight light towers. The Showground Main Arena is located to the north of Grand Parade and approximately 75m west of Australia Avenue and sits within a gently undulating topographic region that falls towards the north and northwest by some 2° to 3°.

Surrounding building heights are generally low to medium scale and reflect a visual compatibility between all built forms within the Sydney Showground precinct. Wide streets, generous footpaths with street trees and purpose built sporting and exhibition buildings evoke the Olympic Legacy. The Showground Main Arena forms a visual focus within the Sydney Showground precinct due to its footprint, occupying one of the largest sites of the precinct and its identifiable architectural design which includes distinctive light tower masts that rise through the roofs of the grandstands. These masts are not only visible throughout Sydney Olympic Park but are visible from wider vantage points external to Sydney Olympic Park and contribute to the visual presence of a significant recreational, sporting and cultural asset from wider parts of Sydney such as Newington, Rhodes and Ryde.

Populous has prepared an Architectural Design Statement that further addresses the built form and urban design considerations of the project relative to the DGRs, attached under **Appendix D**. Following provides an extract from the Architectural Design Statement:

The overall design philosophy for the new built form is to acknowledge and act in synergy with the existing stands and their architectural language. While the new construction will be visually distinct from the current, new elements will be implemented in acknowledgement and respect to the existing architectural character of the building.

The redevelopment aims to maintain the architectural identity of the existing RAS Showgrounds, its 'agricultural soul' as well as providing a cost effective solution through the retention of as much of the existing facility as possible. Furthermore, the applicable heritage and Olympic Legacy aspects as outlined in the SOPA 2030 Masterplan are maintained in this new redevelopment.

Massing

The retention of the five existing stands which form the western half of the ground will retain the architectural massing and language of the facility. The new north-west, north and south stands build on this architectural language to create three new stands within this overall complex. These new stands are designed to a high efficiency and cost effective solution to ensure that the capital expenditure is minimised whilst ensuring the functionality, aesthetic and commercial opportunities of these new stands are not compromised.

The massing of the new development is less than that of the existing. The south-east and north stands consist only of a single elevated seating tiers and a roof overhead. The North-West stand consists of 2 levels of accommodation, where the Officials, Media and Corporate Spectators are located, sit behind 2 small seating tiers and are 5 rows in size. These three buildings are all smaller in height than the existing stands.

Roof Form

With its suspended barrel-vaulted roof and tall light towers the Showground Main Arena is a highly distinctive venue in the Sydney Olympic Park precinct. The design sets out to extend the existing roof forms of the Showground Main Arena Stands with two clean uncluttered floating lightweight roofs that extend over the new north, north-west and south-east stands.

The roofs are of simpler planar form and start at a point adjacent the end of the existing roof and then tapers down in width and height towards the eastern end. The materials used to the new roof will be similar to that of the existing stands, being a metal profile roof sheeting with a sandwich panel soffit.

The structural system will be different to the existing stands but have the same core philosophy in having the structure expressed on the top of the roof, leaving a clean soffit. The structure to the new roofs will consist of a steel framed truss that sits on top and supports the roof from above. These trusses will decrease in size relative to the diminishing size of the seating tiers and will be connected to a colonnade of supporting columns at the rear of the stand.

This approach, while a clearly independent design structure, is a derivation of the existing structural system and is a respectful and appropriate design response. It also allows for a clean continuous soffit to the new build, which seen from the spectators viewpoint, allows the roof to both new and old to be read as one continuous element.

The Facade

The external elevation to the new development is designed in such a way as to capture the 'agricultural soul' of the Showground precinct and the RAS as an institution.

The main feature on both the north-west and south-east sides is a 'green wall' that being a trellised wall upon which several varieties of plants and vines will grow that front the stands at these areas. Given this green wall will have different orientations different species of plant will be used around the new stands and will change in colour through the different seasons of the year.

There is limited built form that sits behind all the new seating tiers. There are small scale amenities blocks that sit underneath all stands while the north-west stand is the only new stand that has building accommodation sitting behind the seating bowl and above the Level 2 concourse.

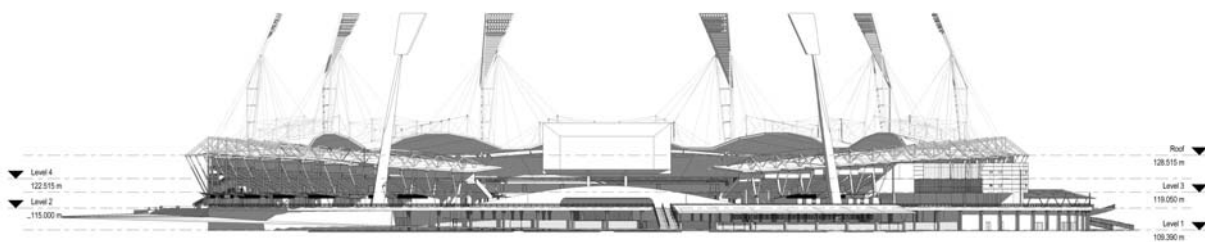
For this north-west stand the elevational treatment will consist of a pallet of materials similar to that of the existing stands and the Showground precinct as a whole.

Out of structural necessity, concrete will be used for the seating stands and will be seen at the higher levels. For the outer elevation of the north-west stand and the concourse level where there is more pedestrian interface the scale is broken down by the use of brickwork and elements of glazing. Timber will also be used judiciously to soften parts of the elevation and to maintain the 'agricultural soul' aspect.

Furthermore the elevation will incorporate the Building Expression Controls as expressed in the SOPA 2030 Masterplan.

It should be noted that in Stage 1 the green wall will not be built to front the south-east and north stands due to the slightly different location of these stands relative to the permanent versions and also due to the prohibitive impact they will have on constructing permanent stands in the future. In this instance the stands to these areas will be screened with an appropriate design response.

Below is an elevation from the eastern end. The new light towers lean in towards the field to mimic the form of the existing but also assist the field lighting performance by limiting the shadowing from the roof below. The roof structure and the supporting columns of the stands help to modularise the elevation into smaller components and the green wall acts as a unifying element but also softens the facade and provides a more human scale, especially at the base where there is a pedestrian interface.



Eastern elevation

Populous further discuss the specific design principles incorporated into the project, relative to the principles outlined in the DGRs as follows:

Sunlight

The roof design provides for shade to spectators to the north-west and north stands during the afternoon and a degree of protection to those spectators in the South East Stand. The extent of which will vary through the year and time of day. Refer to the Shadow Diagrams in the Appendices section for more detail.

Shading will also occur on the northern regions of the ground but not to a point that will inhibit growth of grass in these areas. Nonetheless, further investigation may occur in the Design Development phase to look at having a transparent front portion of the roof to the north-west side so as to minimise shade coverage to this area. This will also assist in television viewing, limiting the contrast between areas in sunlight and shade.

Natural Ventilation

The spectators in all the new stands will be natural ventilated through the fact they are sitting in the open. The corporate suites in the north west stand will be air-conditioned but will have openable doors to the outside that will allow for natural ventilation to occur should that be desired.

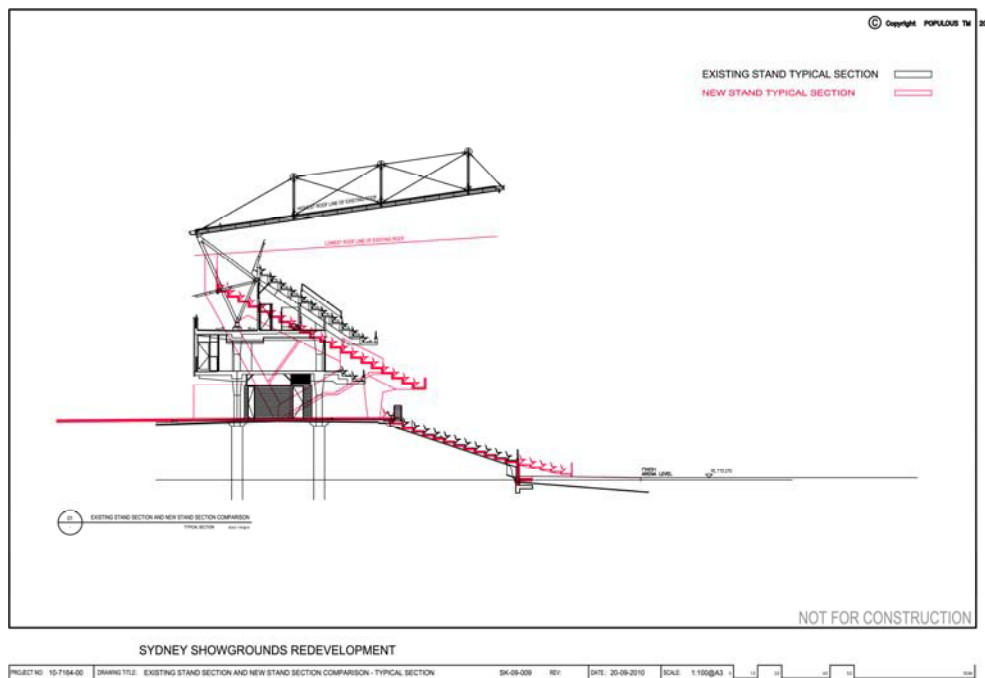
Reflectivity

The 'green wall' external facade treatment as described above will limit any reflectivity. There will be limited glazing that could facilitate reflectivity but this is minimised. All other materials on the facade will not reflect light.

The roof will be metal deck profile roof and will be selected with a low reflectivity index.

Visual and Acoustic Privacy

The size of the new development is less than what exists. The back row of the new seating tiers are less in height than the existing stands (refer diagram below) and the accommodation to the north-west stand is only at Levels 3 and 4 – matching the existing.



Section showing height of new south-east stand (red) relative to the existing stand adjacent

There is no residential development adjacent the eastern end of the arena – where the new development will occur. From this it can be assumed no visual privacy will be compromised.

Acoustic impacts are assessed by Wilkinson Murray. Refer to separate Acoustic Report for further detail on this aspect.

Safety and Security

The design of the new components of the arena will apply, where appropriate, CPTED Principles as well as those considerations listed in Section 4.6.12 of the SOPA 2030 Masterplan, in particular promoting passive surveillance from both the main street access (Grand Parade) and the Level 2 concourse which will be publically accessible on non-event days.

Water and Energy Efficiency

The Sydney Olympic Park site, as stated earlier has an enviable reputation and tradition, since its inception in the early 90s as being at the forefront of Green strategy. The design for the Showground Main Arena endeavours to follow the principles set out by Sydney Olympic Park Authority.

The proposal includes the retention and re-use of the existing stadium, water harvesting, green-wall facades and solar energy generation. All but the solar-energy harvesting are included within the costs assessed. Solar harvesting is currently not included in the current cost plan and is an aspirational element that maybe added at a later date should funding become available. During the next design stages the strategies will be further developed and other strategies investigated.

The new refurbished and extended facility will provide a lasting legacy to the green ideals of the 2000 Olympics as well as paying reverence of the ecological standards of the largest Rural Show in the Southern Hemisphere. The new ESD features we have proposed are as follows:

- *Retention of rainwater to the new stands to be used for pitch irrigation, wet cleaning and flushing of toilets.*
- *A living green façade to the northern stand which provides a vegetative screen that allows solar protection in summer and solar penetration in winter.*
- *The new green façade to also incorporate evaporative cooling through fine water spray mists (fed from the harvested roof rainwater) which promotes cross ventilation of the seating bowl.*
- *Reuse of existing facilities.*
- *All fibreboard elements to be low emission medium density.*
- *Recycling of all existing seats into new seat shells.*

Details on pedestrian Levels of Service during ingress and egress is included in the Architectural Design Statement which confirms that the required width of egress points have been designed to meet the guidelines of the “Guide to Safety at Sportsgrounds” (The Green Guide) in consultation with the BCA consultants Mc Kenzie Group Consulting and the Fire Engineering consultants, Aurecon. R Detailed Egress Diagrams are contained with **Appendix D**.

5.3 Visual Impacts

In terms of visual impact, the proposed additions will respect the existing architectural massing and style of the structure and will represent an appropriate addition to the context of the Showground precinct and the Sydney Olympic Park setting, maintaining the overall presence of Sydney Olympic Park.

A detailed assessment of visual impacts has been undertaken by Populous in respect to impacts on:

- The existing Showground Precinct; and
- View corridors from Newington, Ryde and Rhodes.

Relative to the existing views of the site within Sydney Olympic Park, two vantage points were selected to demonstrate the visual impact of the proposed additions upon the character of the Sydney Showground precinct. These impacts are discussed below:

- From the intersection of Grand Parade and Olympic Boulevard

Minimal views of the proposed development works will be visible from this view as it is taken from the west of the site. The difference in view will relate to the location and form of the two eastern light towers that replace the existing light towers. The proposed light towers will be more consistent in style to the remaining light towers, providing a more cohesive visual presentation of the upper elements of the Showground Main Arena.

- From the intersection of Grand Parade and Australia Avenue

The south-eastern corner of the site is visible from this location but is partly obstructed by planting along Grand Parade.

Relative to Stage 1 works, the proposed south east stand will be visible and will be screened by a panellised system to screen the temporary scaffolding system, in a manner that will break the scale of the this façade.

Stage 1 A and 2 works will also be visible from this view in which the permanent seating and associated roof (in Stage 2) will be viewed. The size of the stand will be commensurate with the adjacent existing stand and the architectural elements and expression will be similar to the existing as well. A green wall element will be applied to the façade to capture the RAS agricultural soul and provide a human scale and soften the elevation.

Main services areas such as loading and waste management facilities of the existing building will be utilised and any additional service equipment will be located within appropriate parts of the building to ensure these facilities will not be a prominent element of the façades of the building.

Refer to the Visual Impact Assessment under **Appendix G**.

5.4 Access to Sunlight

The proposed new seating stands and roof structures will provide an additional building element to the overall envelope of the existing structure. Shadow diagrams have been prepared by Populous to demonstrate the extent of shadow impacts to the public domain cast by both Stage 1 and Stage 2 schemes. Overall, there are insignificant shadow impacts relative to the extent of shadows cast by the existing building, with no additional affectation to public open space areas.

- In mid Winter, the extent of additional shadow beyond the site occurs by 3pm for Stage 1, Stage 1 A and Stage 2. For Stage 2 that includes the permanent seating and associated roofs, the additional shadow extends over the north-western corner of the Charles Moses Stadium and adjacent footpath along Grand Parade. The impact is minor, affecting a corner area of seating of the Charles Moses Stadium. It is also noted that this stadium will be demolished in the future as part of a future redevelopment for additional exhibition space in the Sydney Showground precinct. For Stage 1 development of the Showground Main Arena, the shadows will not extend into the seating area of the Charles Moses Stadium.
- During the Equinox period, the extent of shadow for Stage 1 and Stage 2 are negligible and do not extend into Charles Moses Stadium between 9am and 3pm.
- During the Summer period, there is virtually no impact to beyond the building footprint between 9am and 3pm.

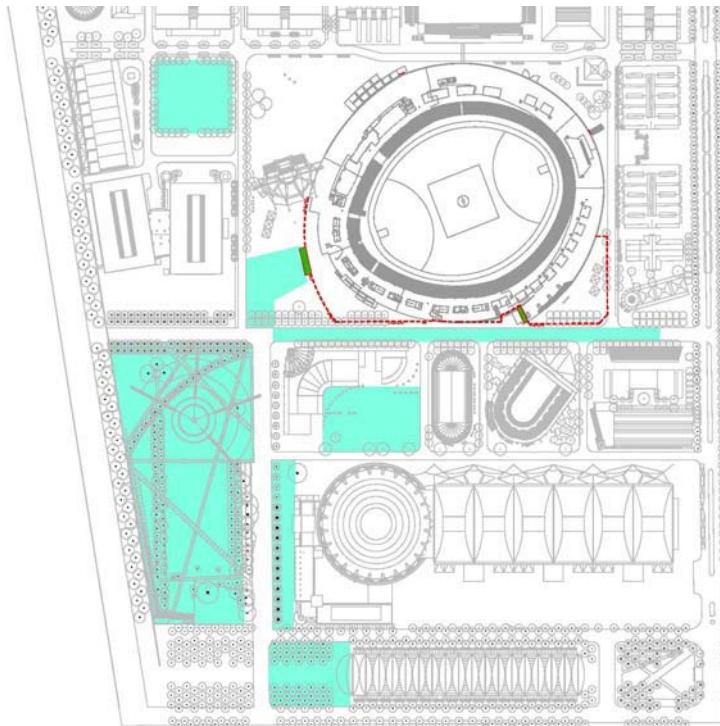
Shadow diagrams are attached under **Appendix H**.

5.5 Public Domain Impacts

The existing Showground Main Arena is an iconic building and provides a gathering and congregation point within the public domain area of the Sydney Showground precinct. External works that relate to the public domain areas will be limited to the provision of a new removable and retractable security fence to define the perimeter of the Showground Main Arena. The removable security fence will enable the reconfiguration of the Showground Main Arena from a secure ticketed venue during sporting and cultural events to an open access venue during the Royal Easter Show.

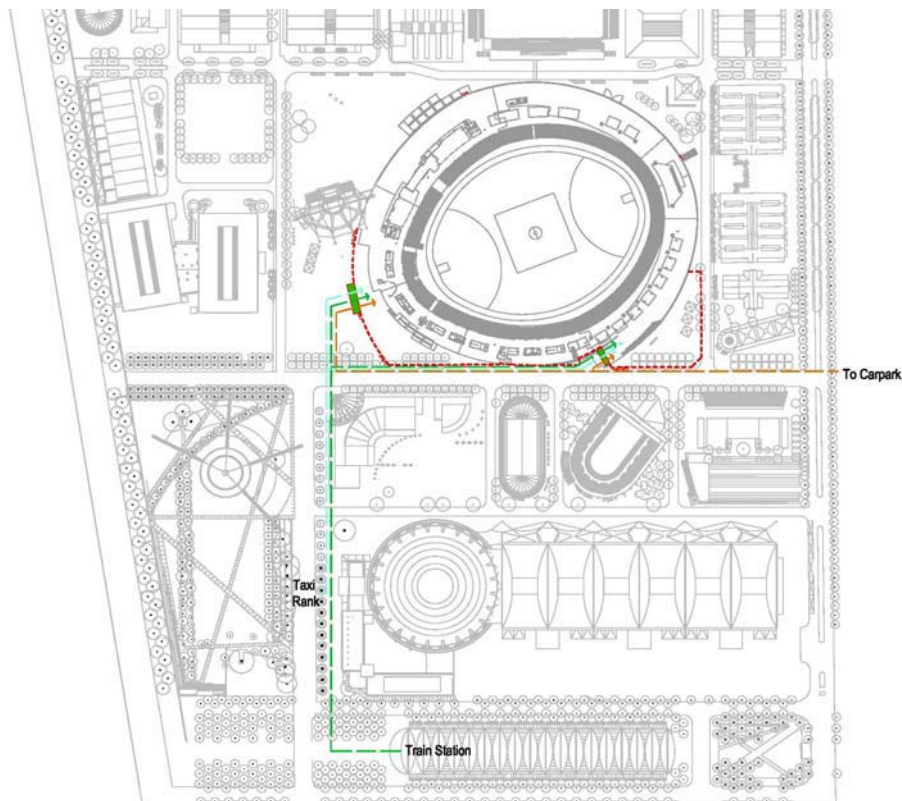
The redevelopment does not alter existing pedestrian linkages between the public open spaces associated with the stadium and other public domain areas of the Sydney Showground precinct, or the connectivity between this building and the existing transport infrastructure. The figure below illustrates the gathering spaces within the Sydney Showground precinct which are unaffected by the redevelopment.

Figure 8 – Key Pedestrian Points Within Public Domain Areas



The proposed fence will be a steel framed fence with a steel mesh infill that will allow visual connectivity between the secured areas of the Showground Main Arena and the remainder of the Sydney Showground precinct. When in place, the fence will allow uninterrupted pedestrian flow both inside and outside the stadium on Grand Parade.

Access to public transport infrastructure is unaffected by the redevelopment and will remain the same as illustrated in the diagram below.



Links to Public Transport

5.6 Wind Impact Analysis

An assessment of the likely wind impact upon the critical outdoor areas within and around the redevelopment has been carried out by Windtech Consultants Pty Ltd, as attached under **Appendix E**. The assessment has been undertaken with respect to both Stages of the redevelopment and it is identified that generally wind conditions associated with the proposed development for each stage will be suitable for the intended uses of the Showground Main Arena. The following provides a summary of the key findings:

- Wind conditions in the public domain, for pedestrian accessible ground level areas around the site will remain similar to existing wind conditions due to the retention of surrounding trees and shielding provided by neighbouring buildings.
- Wind conditions for seating areas within the existing grandstand around the south-western half of the Showground Main Arena are expected to be relatively unaffected by either development stage.
- All spectator areas of the redevelopment area are to be relatively well shielded from adverse wind conditions. The architectural scheme includes 2m high screens along the back edge of the top tier seating in the north-western and eastern grandstands and a 3m screen to the back edge of the proposed corporate terrace area on the north-western side that will provide protection from winds being funnelled underneath roofs.

5.7 Traffic, Public Transport and Car parking

The traffic and transport considerations raised by the DGRs have been investigated and assessed by Halcrow. A copy of the Traffic and Transport Impact Assessment is submitted under **Appendix J**.

It is important to understand that the current capacities of the Showground Main Arena do not increase in overall capacity, as identified in the table below. Whilst the proposal entails an increase in seats from 14,026 seats to 23,000 seats in sporting mode; or 13,570 seats to 20,200 seats in showground mode, the overall maximum capacity of the Sydney Showground Arena is not proposed to increase, maintaining the current volumes of patrons visiting Sydney Olympic Park overall.

Showground Mode	
Existing seats	13,570
Existing Maximum capacity	18,000
Proposed Seats	20,200
Proposed Maximum Capacity	22,200
Concert Mode	
Existing seats	10,198
Existing Maximum Capacity	30,021
Proposed Seats	10,198
Proposed Maximum Capacity	30,021
Sporting Mode	
Existing seats	14,026
Existing Maximum Capacity	17,000
Proposed Seats	23,000(min)
Proposed Maximum Capacity	25,000(max)

The key findings of the traffic and transport assessment relative to the DGRs are summarised below:

Details of daily and peak and traffic movements and impact on nearby intersections and the need, and associated funding for upgrading or road improvements if required

- Traffic generation investigations have included consideration to proposed staff numbers and patrons visiting the Showground Main Arena.
- The proposal will result in a minor increase in hospitality staff in the new corporate facilities under Stage 2 development. It is anticipated an increase of some 100 – 200 staff relative to existing staff levels that range between 600 and 1,000 during sporting and concert modes at the Showground Main Arena. It is assessed that these additional staff numbers are likely to generate an additional 116 staff trips.
- Relative to patrons, whilst the seated capacity of the facility is to be increased, the overall capacity of the stadium is not to be increased beyond the current maximum capacity and as such, no additional trip generation is expected. However, the existing trip generation of 10,000 – 25,000 patrons per event will increase by a minimum of 7 times per year during the AFL season.
- Taking into account the above trip generation estimates and mode share analysis, the assessment concludes that traffic associated with additional staff is unlikely to have an impact on traffic network performance; whilst during event periods public transport use is to continue to be the predominant form of transport to the site.

- Taking into account existing peak hour traffic generation and the estimated trips associated with additional staff, these trips will represent an additional 8% increase in peak periods and will have negligible impact on the traffic network.
- With consideration to mode split analysis and estimated distribution of traffic within the surrounding traffic network, the assessment identifies that traffic levels will increase significantly over a one hour period but traffic generated by the arena will not increase traffic volumes above those currently observed during events. Sydney Olympic Park and its major roads have been designed and constructed to be able to operate with high traffic volumes during the lead up and following an event and as such, the project will not result in any additional impacts on the operations of the road network and as such no upgrades or improvements are warranted as a result of the project.

Details of proposed access and parking provisions including compliance with relevant Australian Standards. Proposed number of car parking spaces and compliance with the appropriate parking codes.

- Access and parking arrangements for the site remain unchanged.

Details of service vehicle movements including vehicle type and likely arrival and departure times.

- Service vehicle access will remain unchanged and number of service vehicles will not significantly increase. Deliveries utilise Kevin Coombs Avenue and Orana Drive, through a security gate. Once on site, service vehicles access the Showground Main Arena through the RAS car park. Service vehicles exit the site via New England Avenue to Australia Avenue.
- Service vehicles leave the site prior to the opening of the Sydney Showground Arena for patron entry or remain on site until after the break out period.

Impact on non-car travel modes including public transport use, walking and cycling and the provision of facilities to increase the use of non-car modes for travel to and from the site.

- The proposed redevelopment of the Showground Main Arena is in line with NSW policies and plans for providing entertainment and associated employment opportunities in locations where car dependence can be minimised due to proximity to good public transport services and walking and cycling networks.
- Impacts on train and bus public transport services have been assessed taking into consideration modal split and hourly passenger arrival flows for various event modes. The analysis identifies that an increase in public transport beyond that already provided for during the Royal Easter Show is not required and as such, it will be sufficient to utilise pre-existing event transport management plans for each event, with no impact on the operations of the regular transport networks.
- In accordance with current operations, the provision of special event bus and trains services will be implemented by the respective agencies. Enhanced public transport arrangements during special events ensure that travellers to and from the precinct are satisfactorily catered for and has the capacity for increased use including a greater frequency of events. Consultation with the Ministry of Transport and Railcorp will be undertaken in respect public transport services.
- The proposed development will not affect the current operations of walking and cycling networks. The new northern entrance to the facility it is expected to increase pedestrian volumes along Australia Avenue as patrons move to and from the site to P6 car park and the Olympic Railway station. This however is not expected to impact on surrounding walking routes. Good levels of existing cycling access will remain unchanged.

Provision of a Traffic Management Plan for all demolition / construction activities

- At this stage, a preliminary review of the management of construction traffic has been undertaken given that demolition and construction plans, quantities and phasing have not yet been determined. However, the following considerations are provided below.
- Vehicles associated with construction are likely to entail:

- Articulated vehicles for delivery of machinery;
 - Heavy and medium rigid trucks for construction material delivery;
 - Heavy rigid tankers for fuel delivery for compacting and excavation machinery;
 - Rigid trucks for removal of demolition and excavated material; and
 - Staff cars, vans, utilities and delivery vans.
- All construction vehicle queuing, storage, loading and unloading will occur within the site, including a vehicle wash down area.
 - The proposed entry/exit routes aim to provide the shortest distances to the arterial roads and avoid use of local roads by trucks where possible and entry into the site will be Parramatta Road, Hill Road, Old Hill Link Road, Kevin Coombs Drive and Australia Avenue.
 - It is estimated that each concrete pump used in the construction of the stands will have up to 6 deliveries per hour and presents the highest likely activity. This volume is considered very low in the context of the overall road system capacity and will have minimal impact on traffic operations.

A detailed construction traffic management plan will be submitted prior to works commencing on site.

5.8 Acoustic and Noise Impacts

The proposed works will not change the function of the Showground Main Arena or the underlying function of the Showground Precinct or Sydney Olympic Park as a major sporting and entertainment precinct. The proposed alterations aim to enhance the use of the existing facilities for a wider range of events, as well as accommodating existing events.

Wilkinson Murray has undertaken an acoustic assessment of the operations associated with the proposed redevelopment with reference to the SOPA Draft Noise Management Plan. The assessment has taken into account the various event modes of the Showground Main Arena and the impacts upon residential receivers external to Sydney Olympic Park; and future residential receivers and existing commercial receivers within Sydney Olympic Park.

The acoustic assessment indicates that noise impact associated with the redevelopment will be satisfactory providing that certain acoustic measures be implemented. The results of the assessment are summarised below:

- During periods of neutral meteorological conditions, the level of noise predicted from the Showground Main Arena will comply with the relevant criteria at receivers within and external to Sydney Olympic Park, except for noise associated with rock concerts. The exceedence will range between 2 – 4 dBA at the upper levels of both the Novotel Hotel and the residential tower at Site 3 (under construction).
- During periods of adverse meteorological conditions, noise from rock concerts may also exceed relative to external residences in Newington South and the upper levels of the Formula 1 Hotel.
- At Newington South, the predicted exceedence under adverse conditions is 1 dBA, which is not considered significant. In this regard, effective compliance is predicted at all external receivers during both neutral and adverse meteorological conditions.
- At certain receivers within Sydney Olympic Park, exceedences of up to 8 dBA are predicted from concerts depending on meteorological conditions. However, it is noted that the noise predictions for concerts has been based upon sound power levels associated with major international rock acts. As all concerts do not operate at this level, it is reasonable to expect that concerts of lesser known or local acts may operate at levels 3 – 5dBA lower.

- To ensure compliance with relevant criteria at these locations, real-time monitoring measures that are capable of identifying the source of measured noise would be required. If noise levels approach the relevant criterion, then sound levels from the PA system would be directed to be reduced.

It is fundamental to acknowledge that Sydney Olympic Park functions as a significant recreational, sporting and cultural precinct in metropolitan Sydney, featuring a range of quality sports and entertainment venues whilst also accommodating new residential and other sensitive land uses. To achieve appropriate amenity between land uses, SOPA also requires that new developments be designed and constructed to achieve suitable internal acoustic environments within these developments in consideration of high noise levels associated with major event venues from time to time.

5.9 Lighting Emission

A lighting design report has been prepared by Aurecon and is attached under **Appendix L** that details the existing and proposed lighting scheme in respect to the relevant Australian Standards and other applicable lighting standards. In summary, the key considerations of the report are:

- The existing lighting system is comprised of a flood lighting design that comprises 6 roof support column light poles with 34 floodlights; 2 freestanding light poles with 46 floodlights; and 24 floodlights mounted along the stand roof edge.
- The proposed lighting system is currently being developed but to date, it is anticipated that additional flood lighting will be required to the existing support column light poles. These poles are not proposed to be relocated. The two existing free standing light poles at the northern end of the stadium may be required to be relocated, as illustrated in Appendix A of the Floodlighting Design report. It is anticipated that an increase in floodlights on these light poles will be required.
- The current lighting system allows for various lighting modes to cater for the various uses of the Showground Main Arena, such as general training, general events, baseball practice and televised games.
- The proposed lighting system is to be designed to accommodate three modes of lighting and the different levels of lighting required for televised matches; non-televised matches; and ball and physical training. The different modes of lighting will achieve energy savings costs and provide compliance with the obtrusive lighting standards during non-televised matches and training sessions.

5.9.1 Relevant Standards

The relevant standards relating to the Sydney Showground Main Arena floodlighting are:

- Australian Standards (AS) 2560 – Sports Lighting Part 1 General Principles;
- AS 2560 – Guide to sports lighting Part 2.3 Specific Applications – Lighting for football;
- AS 4282 – Control of the obtrusive effects of outdoor lighting.

Other relevant standards are contained within:

- FreeTV Australia operational practice OP-31 and OP-33 which relate to lighting for colour television and TV coverage for AFL matches;
- The International Lighting standard CIE – Practical design guidelines for the lighting of sports events for colour television and filming;
- AFL minimum standards for AFL venues.
- AS/NZS 1158 provides recommendations regarding the control of lighting to allow safe movement of people within public spaces and prevention of crime.

5.9.2 AS 2560 relating to sports lighting

AS 2560, part 2.3:2002 contains recommendations and requirements for the lighting of sporting grounds and aims to provide suitable and comfortable light levels for players and spectators. Three different professional modes of lighting for ball and physical training; match practice; and professional practice are provided in AS 2560. The proposed flood lighting system will be designed to comply with the minimum requirements of AS 2560.

5.9.3 AS4282 relating to obtrusive lighting

AS 4282:1997 provides recommendations to control obtrusive lighting to neighbouring areas. The standard considers three factors:

- Illuminance at neighbouring residential properties;
- Luminous intensity of luminaries; and
- Threshold increment which is a measure of disability glare caused by the lighting to pedestrians and motorists.

The standard takes into account factors such as the level of ambient lighting existing in the area and pre-curfew and curfew hours and specifically excludes lighting systems which are installed for the purposes of colour television broadcasting from the scope of the standards.

For non televised events, the AS provides limiting values of spill lighting during pre-curfew and curfew hours. As these limiting values apply in the circumstances where a site immediately adjoins residential development and given that the Showground Main Arena does not adjoin such development, these limiting values do not strictly apply. However, the proposed lighting scheme will be designed to meet AS4282 for non televised matches and training modes.

AS 4282 also specifically excludes lighting systems which are installed for the purposes of colour television broadcasting from the scope of the standard, such that the Showground Main Arena is exempt when operating in 'full' lighting mode for televised events. The stadium lighting will be designed to make all reasonable attempts to minimise spill lighting into neighbouring properties during televised events, where practical.

As the lighting design for the Showground Main Arena is in the initial stages and is currently being further developed, computer modelling of the lighting scheme will be undertaken once lighting is finalised. Further documentation to demonstrate compliance with the relevant standards and guidelines may be provided at a later stage. Refer to **Appendix L** for further details on lighting design.

5.10 Waste Management

Waste management relative to construction phase is detailed within the submitted Construction Management Plan by APP, attached under **Appendix B**. Waste management aspects include:

- Separation, recycling and reuse of concrete, steel, aluminium and timber, where possible;
- The main contractor to be responsible for sorting, recycling and packaging of waste materials;
- Where possible, separation and crushing will occur on site. However, space limitations and weather considerations may require this to occur off-site;
- Hazardous material assessment to be undertaken prior to commencement of demolition and excavation works.

Waste management in regards to the operations of the Showground Main Arena will continue to operate in accordance with existing practices. At this stage, the additional waste generated by the redeveloped facility cannot be quantified and further investigations will be determined prior to occupation as to whether existing waste management practices will require amplification.

5.11 Infrastructure, Utilities & Stormwater

Hyder Consulting has undertaken an assessment relative to the provision of utilities to accommodate the proposed redevelopment. The assessment relates to potable water; recycled water; sewer; electrical supply; gas supply and communications. Based upon services searches, it is found that the utility services are available in the immediate to service the alterations and additions and that existing capacities of services will be able to accommodate the development. Refer to **Appendix M** for further detail.

In respect to investigations to stormwater drainage, Hyder identifies that stormwater drainage works will involve:

- Retention and reuse of existing subsoil drainage pipes where possible;
- Existing perimeter drain and pits around the field of play will be taken up and new pits and pipes to be constructed below the proposed edge of grass;
- Retention and reuse of existing rainwater harvesting system for irrigation. Irrigation pumps should be located remote to the tank for ease of maintenance;
- Subject to detailed modelling, detention storage is required to maintain post development stormwater outflows equivalent to existing outflows for Stage 1 and 2 of the redevelopment.

Refer to **Appendix M** for further detail.

Currently existing on the two light poles proposed to be removed as mobile telecommunication infrastructure owned by various service providers. The RAS will be required to review the lease agreements relating to telecommunication infrastructure and be aware of the “development clause” relating to the allocation of costs associated with moving or re-arranging existing services. Each service provider will be responsible for managing any moves or redesign works.

5.12 Ecologically Sustainable Development

The design and construction of the proposed works will incorporate principles of Environmentally Sustainable Development (ESD). The incorporation of environmentally responsible materials and processes in design and construction aim to reduce energy consumption and adverse impacts on the environment in both construction and operation.

Aurecon Australia Pty Ltd is involved with the design and provision of proposed environmentally sustainable components of the project, which include the following measures outlined in correspondence attached in **Appendix N**:

- Electrical services: Use of high energy efficacy lamps and luminaries throughout the facility with programmable controlling infrastructure.
- Mechanical Services: natural ventilation will support most areas of the facility but where mechanical systems are required to support function spaces, these will include high efficiency filters and appropriate measures to support high levels of indoor air quality and thermal comfort.
- Hydraulic services: new amenity areas to be equipped with AAAA Tapware and appliances, AAA shower heads and water efficient WCS and urinals.
- General: design to seek reduction on the total PVC content cost for major service elements by replacing with alternative materials.

A recycled water reticulation system currently services various facilities within the Sydney Showground precinct including the Sydney Showground Arena. This system currently provides recycled water for toilet flushing and irrigation and will be utilised to service the proposed additional and upgraded areas of the Sydney Showground Arena.

Further ESD strategies and measures will be provided upon further detailed development of the construction drawings and will be provided prior to CC stage.

5.13 Construction Management

A Construction Management Plan (CMP) has been prepared by APP Corporation Pty Limited and is submitted under **Appendix B**. The CMP includes all stages of the redevelopment of the Showground Main Arena, including the early work stage that will be the subject to a separate Part 4 Development Application to provide a complete overview of the construction process.

The CMP addresses the following considerations:

- Project staging and key milestones;
- Construction activities;
- Impacts on adjoining neighbours;
- Consultation process;
- Construction risks and mitigation measures;
- Occupational health and safety;
- Traffic management during construction;
- Waste management; and
- Construction noise management.

Construction is proposed to be undertaken in a manner that will minimise interruption to the operations of Sydney Olympic Park to ensure that events and associated patrons occurring elsewhere within the Sydney Olympic Park are not affected. It is intended that the site will be hoarded off to the public, however Showground Road and Orana Parade will remain open to the public providing clear access from the Olympic Park railway station to New England Avenue.

Construction traffic during major events at Sydney Olympic Park will be managed with SOPA and include scheduling of major deliveries such as concrete pouring on days that are not hosting major events.

Particular mitigation measures are proposed for the following construction risks to ensure impacts to the local amenity and operations of Sydney Olympic Park are minimised:

- Noise from demolition activities;
- Noise from construction activities;
- Vibration from foundation works;
- Dust from demolition and construction works;
- Stormwater run off;
- Removal of hazardous materials;
- Waste water; and
- Construction traffic.

Refer to **Appendix B** for further detail.

5.14 Staging

In recognition of the importance and significance of the current operations of the Showground Main Arena, the Showground Main Arena will continue to host the Royal Easter Show in 2011. Accordingly, construction programming and management must be capable to working within this operational need of the Arena.

The overall redevelopment of the Showground Main Arena will be undertaken within three phases:

- Early works that are to be the subject of a separate Part 4 Development Application (DA). The early works package will entail demolition, excavation, deconstruction of lighting towers, site set up and services deconstruction as illustrated in the submitted demolition plan contained within a Construction Management Plan under **Appendix B**. The consent authority for the Part 4 DA is SOPA. These works aim to occur prior to the proposed redevelopment that is sought under the Project Application.
- At this point in time, it is proposed to construct all redevelopment works associated with this Part 3A application in two stages. However, Stage 1 will be built using one of two options for the south-east stand, depending on the final allocation of the project budget. For clarity, these stages are known as Stage 1 and Stage 1A.
- Stage 1 of the Part 3A works will reflect the existing budget commitments of \$60 million and includes the majority of the above works but with the following changes:
 - The new south-east stand would consist of interim, demountable scaffold seating and will not be roofed;
 - The new north stand would consist of interim, demountable scaffold seating and will not be roofed;
 - The grassed mound to the eastern end would not be built in this stage.
- As an alternative option to Stage 1, in the event that additional funding becomes available, Stage 1a of the Part 3A works will be built. In broad terms, the work is similar to that proposed for Stage 1 with the following exceptions:
 - The new south-east stand will be constructed in its final form using a combination concrete and steel structure. The stand will not be roofed.
 - The new north stand will be constructed in its final form using a combination concrete and steel structure. The stand will not be roofed.
 - The grassed mound to the eastern end will be built in this stage.

Stage 2 of the Part 3A works will be undertaken upon budget commitments of up to total budget of \$73 million and relates to the total project described above, including that the permanent seats to the south-east and north stands and associated roofs will be constructed.

The CMP under Section 3.4 provides an indicative summary of the program and key milestones as follows:

- | | |
|-----------------------------|-------------------------|
| ▪ 2011 Royal Easter Show | April 2011 |
| ▪ Site establishment | May 2011 |
| ▪ Commencement on site | May 2011 |
| ▪ Early Work Commencement | May 2011 |
| ▪ Stage 1 Work Commencement | June 2011 |
| ▪ Stage 1 Construction Work | June 2011 to April 2012 |

- Commissioning complete and handover March to May 2012
- 2012 Royal Easter Show April 2012
- 1st 2012 AFL Game May 2012

Timing of the Stage 2 works is dependent on additional funding being approved. If funding is approved and the works are able to be completed within the constraints such as the Royal Easter Show in 2012 and the AFL game schedule, then Stage 2 works will immediately follow Stage 1 works. In the case that funding is not approved until a later date, the Stage 2 works will be scheduled around existing commitments of the Showground Main Arena.

5.15 Consultation

A range of stakeholders has been consulted throughout the approval process and will continue to include:

- Department of Planning

Prior to lodgement of the EA, representatives of the proponent met with DoP officers on several occasions, as detailed in Section 1.5.

- Sydney Olympic Park Authority

Prior to lodgement of the EA, representatives of the proponent met with SOPA officers and the DRP on several occasions, as detailed in Section 1.5.

- Auburn Council

Auburn Council was approached prior to the lodgement of the EA to canvass any potential considerations or issues. No response was received.

- Roads and Traffic Authority

The Roads and Traffic Authority provided comments in respect to the Preliminary EA, which formed part of the DGRs.

- NSW Industry & Investment

Initial meetings between the proponent and NSW Industry & Investment, including with DoP officers have been undertaken.

Subject to further consideration on special event transport arrangements, the NSW Department of Transport and State Transit Authority will be consulted.

5.16 Major Events

5.16.1 Major Event Operations of the Showground Main Arena

The proposed redevelopment of the Showground Main Arena aims to enhance the major event hosting capacity of Sydney Olympic Park in terms of its seating capacity. However, the proposal does not entail an increase to the existing maximum capacity of 30,021 and given that the overall capacity of Sydney Olympic Park has been designed to accommodate up to 250,000 visitors per day, there are no changes to the expected overall numbers of patrons currently visiting Sydney Olympic Park.

The MEIAG Development Control Requirements relates to a range of operational issues that require consideration in any major event proposal: road traffic; transport; car parking; event venues; public assets; public spaces; and site operations.

These development control requirements are discussed below, taking into consideration that the Showground Main Arena is an existing major event venue and is currently operated in accordance with SOPA approved management plans. The proposed redevelopment does not alter the current approved use and operations of the Showground Main Arena, nor its approved maximum capacity. The redevelopment essentially entails a reconfiguration of the oval and facility to provide for a wider range of sporting and cultural events than currently accommodated and for additional seating, but within the existing maximum capacity.

Road traffic

- Traffic generation and impacts have been assessed by Halcrow and it is concluded that the project will not result in any additional impacts on the operations of the road network and as such no upgrades or improvements are warranted as a result of the project.
- Traffic generation investigations have included consideration to proposed staff numbers and patrons visiting the Showground Main Arena. Relative to additional staff numbers, it is assessed that the additional staff trips will represent an additional 8% increase in peak periods and will have negligible impact on the traffic network. Relative to patrons, whilst the seated capacity of the facility is to be increased, the overall capacity of the stadium is not to be increased beyond the current maximum capacity and as such, no additional trip generation is expected. However, the existing trip generation of 10,000 – 25,000 patrons per event will increase by a minimum of 7 times per year during the AFL season. With consideration to mode split analysis and estimated distribution of traffic within the surrounding traffic network, the assessment identifies that traffic levels will increase significantly over a one hour period but traffic generated by the arena will not increase traffic volumes above those currently observed during events. Sydney Olympic Park and its major roads have been designed and constructed to be able to operate with high traffic volumes during the lead up and following an event and as such, the project will not result in any additional impacts on the operations of the road network and as such no upgrades or improvements are warranted as a result of the project.
- No changes to existing vehicular access arrangements to the Showground Main Arena for service vehicles, players or staff are proposed, which is currently via Kevin Coombs Avenue and Orana Drive, through a security gate. Exit arrangements include New England Avenue to Australia Avenue as existing.

Transport

- Special event government transport buses are currently provided within Sydney Olympic Park during major events held at the Showground Main Arena. Future main events will continue to be served by the existing transport management arrangements in place. Consultation with the Ministry of Transport will be undertaken prior to occupation to ensure coordination of special event transport arrangements and future events.
- No changes are proposed to existing taxi, coach or railway facilities.

Car Parking

- No changes proposed to existing public car parking arrangements. The existing supply of 10,000 public car parking spaces will remain available for general public use during major events held at the Showground Main Arena.

Event Venues

- The redevelopment of the Showground Main Arena aims to improve the current operations of the venue. Proposed grandstand areas, new concourse areas and hospitality services, and refurbishment works to back of house areas and player/staff areas will enhance the Showground Main Arena's role as a major event venue.

- The proposed perimeter fence to the external areas of the Showground Main Arena will assist in controlling entry and exit during periods of sporting events. The position of the fence will ensure appropriate areas are maintained within the public domain for pedestrian gathering places and unobstructed pedestrian flow. The fence will be retractable to enable unobstructed access into the Showground Main Arena during the Royal Easter Show as illustrated below.

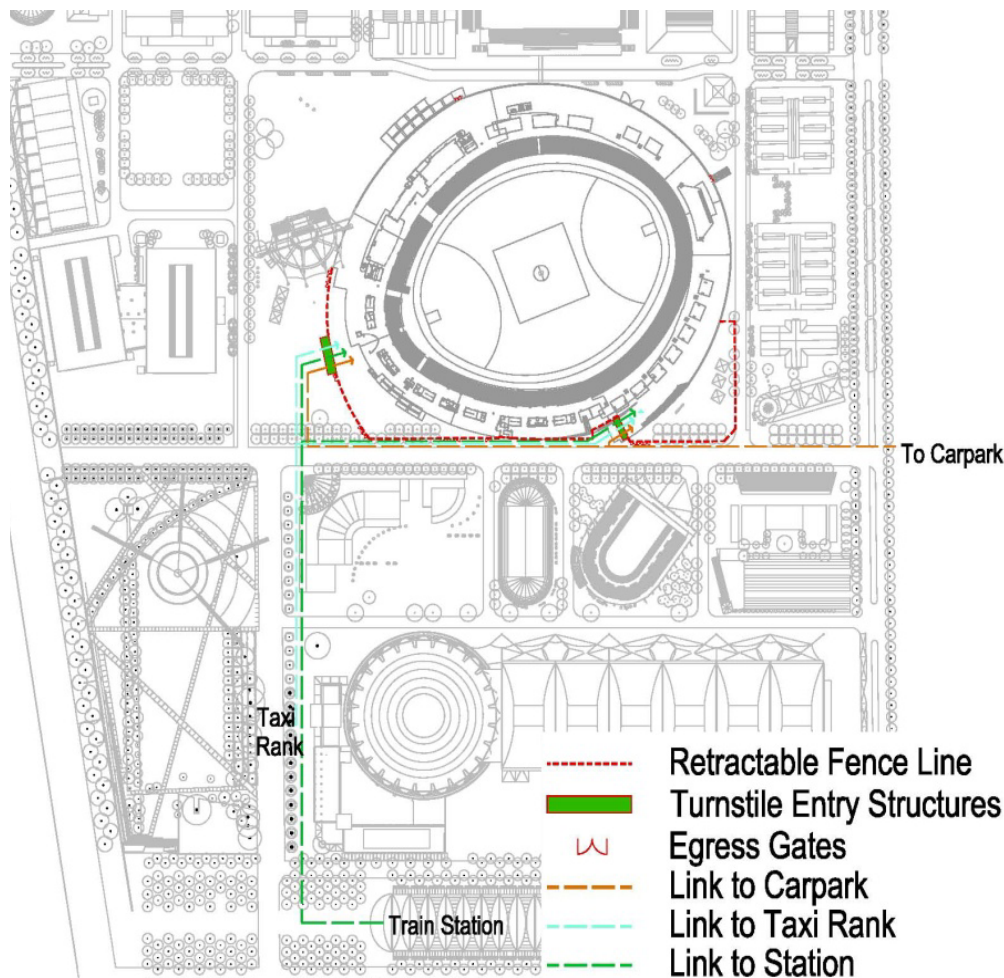
5.17 BCA and Fire Engineering

A Preliminary Regulatory report relative to the Building Code of Australia has been prepared by McKenzie Group Consulting and is attached under **Appendix U**. The report provides a BCA compliance review of the architectural plans and nominates relevant BCA prescriptive or 'deemed to satisfy' compliance provisions and potential areas where alternate performance based alternate design solutions can be adopted in the circumstances when prescriptive provisions may not be practically achievable.

It is expected that the development will require building specific compliance solutions, particularly in regards to fire safety due to the unique nature of the development. The fire safety strategy will be developed utilising fire engineering analysis to determine the most appropriate compliance solutions.

The Preliminary Regulatory report also addresses the provisions for health and amenity for occupants including sanitary facilities and general access provision.

The assessment concludes that the project will be able to comply with the BCA provisions using a combination of prescriptive and performance based provisions. This is reflected in the submitted Draft Statement of Commitments.



Public Assets

- Utility services are available in the immediate to service the alterations and additions and that existing capacities of services will be able to accommodate the development. Refer to **Appendix M** for further detail.

Public Spaces

- The operations of the Showground Main Arena will continue to occur within the Event Operations Zone. As identified above, the proposed perimeter fence to the external areas of the Showground Main Arena will assist in controlling entry and exit during periods of sporting events. The position of the fence will ensure appropriate areas are maintained within the public domain for pedestrian gathering places and unobstructed pedestrian flow. The fence will be constructed in steel mesh which will not visually obstruct views throughout the event operations zone.

Site Operations

- The relevant SOPA work permits will be obtained where required during construction. Construction will be undertaken with consideration to SOPA's Development Construction Code of Conduct where required.
- No impacts to SOPA's Place Management Centre, the Sydney Olympic Park Operations centre, the Security Office or SOPA's CCTV systems will be occur as a result of the construction and operations of the Showground Main Arena.

- As identified above, the proposed perimeter fence to the external areas of the Showground Main Arena will assist in controlling entry and exit during periods of sporting events. The position of the fence will ensure appropriate areas are maintained within the public domain for pedestrian gathering places and unobstructed pedestrian flow.
- The timing of construction of the proposed works is critical is to ensure there is no disruption to the ability of the Showground Main Arena to accommodate the Royal Easter Show and to enable the upgraded facility to commence operation by the beginning of the various sporting seasons in 2012. As such, construction will be programmed to immediately commence after the Royal Easter Show 2011 and undertaken in a manner to ensure completion relative to critical dates.

5.17.1 Construction during major event periods at Sydney Olympic Park

Construction is proposed to be undertaken in a manner that will minimise interruption to the operations of Sydney Olympic Park to ensure that events and associated patrons occurring elsewhere within the Sydney Olympic Park are not affected. It is intended that the site will be hoarded off to the public, however Showground Road and Orana Parade will remain open to the public providing clear access from the Olympic Park railway station to New England Avenue.

Construction traffic during major events at Sydney Olympic Park will be managed with SOPA and include scheduling of major deliveries such as concrete pouring on days that are not hosting major events.

The CMP provides for the establishment of Liaison Groups, with particular involvement with SOPA to ensure effective communication between all parties is achieved. This will enable potential issues relative to future major events and construction on the site be carried out in manner that minimises disruptions to all users of the Sydney Olympic Park.

6 Draft Statement of Commitments

The following Draft Statement of Commitments is offered to ensure that the proposed development will adequately mitigate any potential adverse environmental impacts during both the construction and operational stages of the development.

The proponent is responsible for the implementation and achievement of any Commitments made as part of this Project Application.

6.1 Construction Management

Construction management will be undertaken in accordance with the Construction Management Plan prepared by APP Corporation Pty Limited, dated 20 October 2010.

6.2 Control of Construction Noise

Prior to commencement of the construction, a construction noise assessment will be undertaken. Noise and vibration monitoring devices will be positioned in a number of locations to monitor the construction noise and vibration throughout the construction phase. The results of these monitoring devices will be reviewed and if appropriate will be addressed in the PCG meetings.

6.3 Construction Traffic Management

A Construction Traffic Management Plan is to be prepared and submitted to the Roads and Traffic Authority and SOPA prior to commencement of construction.

6.4 Transport Management

Restriction of vehicle access along Australia Avenue between the Riverina Avenue and New England Avenue during break out phase (following sporting events to enable patrons to safely exit to the P5 and P6 car parks) be investigated, subject to SOPA agreement.

The proponent is to consult with SOPA and relevant NSW public transport agencies in the provision of special event public transport services for major events occurring in Sydney Showground Arena prior to occupation.

6.5 Lighting Design

Upon finalisation of the lighting design and associated computer modelling, further assessment relating to relevant Australian Standard provisions will be provided prior to commencement of construction.

6.6 ESD

Further ESD strategies and measures will be provided upon further detailed development of the construction drawings and will be provided prior to CC stage.

6.7 Event Management and Transportation

Future main events will continue to be served by the existing transport management arrangements in place. Consultation with the Ministry of Transport and State rail Authority will be undertaken prior to occupation to ensure coordination of special event transport arrangements and future events.

The proponent will consider adopting practices of integrated event ticketing and the requirement of pre-booked parking for large events to support public transport use.

6.8 Signage

The relevant approvals for any future external signage will be sought.

6.9 Operational Noise Management

Future operators of concert events are to provide for real-time monitoring measures using either attended monitoring or unattended monitors capable of identifying the source of measured noise. If noise levels approach the relevant criterion, sound levels from the PA system would be directed to be reduced.

6.10 Waste management

Waste management in regards to the operations of the Showground Main Arena will continue to operate in accordance with existing practices. Further details on operational waste management will be provided prior to occupation.

6.11 BCA and Fire Safety Engineering

The proposed redevelopment will be designed and constructed to comply with the BCA provisions using a combination of prescriptive and performance based provisions. A further detailed BCA report will be submitted as part of the Construction Certificate.

A Fire Safety Engineering Strategy Brief has been prepared by Aurecon and is provided in Appendix P. This outlines the fire engineering strategy and the proposed methodology which will be employed. It notes that the Fire Engineering Brief (FEB) and Fire Safety Engineering Report (FSER) will be developed in accordance with the methodology outlined in the International Fire Engineering Guidelines (IFEG) (ABCB 2005) while being cognisant of practices and reviews procedures generally accepted in the building design, construction and fire protection engineering communities.

6.12 Accessibility

The recommendations by Morris-Goding Accessibility Consulting contained within the Access Review Report be adopted within the Construction Certificate drawings as follows:

- Ensure a continuous accessible path of travel is provided to the proposed development (new works and refurbishment) from the existing main public entrances of building (levels 1 & 2), compliant with AS1428.1-2009.
- Provide at least 173 (total) wheelchair seating spaces, in line with BCA, DDA Premises Standards Table D3.9 and AS1428.1-2009.
- Ensure the required wheelchair seating spaces are distributed between Public, Members and Corporate Areas in appropriate groupings and locations to comply with DDA Premises Standards Table D3.9 and AS1428.1-2009.
- Ensure an accessible path of travel is provided to wheelchair seating spaces from the main public entrances on levels 1 & 2 and to the accessible toilet facilities.
- Ensure all new toilet facilities are designed to meet AS1428.1-2009.
- Ensure new lift facility is compliant with DDA Premises Standards, AS1735.12 and AS1428.1-2009.
- Ensure doorways provide at least 850mm clear width (at least one active leaf of double doors), compliant with AS1428.1-2009.

7 Conclusion

The proposed investment into redevelopment of the Showground Main Arena represents an exciting opportunity to provide for an enhanced multi-use sporting and cultural event venue for the people of NSW. The Showground Main Arena was purpose built for the 2000 Sydney Olympic and Para Olympic Games and as the focal point for the Royal Easter Show. However, its current configuration is limiting on its ability to attract and accommodate a broader range of use and activity. This has created a degree of under-utilisation for what is otherwise significant asset within a world class events venue, being the wider Sydney Olympic Park.

The environmental assessment undertaken demonstrates that the Major Project Application is consistent with NSW Government aims and intent of enhancing the sporting, cultural and entertainment opportunities within Sydney Olympic Park. Detailed assessment against the SOPA Sydney Olympic Park Master Plan 2030 confirms that the proposal reflects the visions and design guidelines for the future development of Sydney Olympic Park.

The key considerations raised in the DGRs have been investigated by specialist consultants to ensure the proposed redevelopment either satisfies the matters raised or will be able to be designed to meet specific technical requirements. A Draft Statement of Commitments (SoCs) has been prepared to demonstrate that the proponent will undertake further consideration to recommendations by specialist consultants. In view of the assessment undertaken and the recommendations within the Draft SoCs, it is requested that the proposal be approved.

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