SYDNEY FOOTBALL STADIUM REDEVELOPMENT

STATE SIGNIFICANT DEVELOPMENT APPLICATION

Concept Proposal and Stage 1 Demolition

SSDA 9249

Environmental Impact Statement

Submitted to Department of Planning and Environment on behalf Infrastructure NSW

June 2018

NSW GOVERNMENT

ETHOS URBAN

Environmental Impact Statement
Concept Proposal and Stage 1 Demolition Works

Sydney Football Stadium
40-44 Driver Avenue, Moore Park

Concept Proposal and Stage 1 Demolition Works

Submitted to the NSW Department of Planning and Environment
On behalf of Infrastructure NSW

June 2018 | 218018

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Development Application Details	
Applicant name	Infrastructure NSW
Applicant address	Level 15, 167 Macquarie Street, Sydney NSW 2000
Land to be developed	Sydney Football Stadium, 40-44 Driver Avenue, Moore Park Part Lot 1528 in Deposited Plan 752011, Part Lot 1530 in Deposited Plan 752011 and Lot 1 in Deposited Plan 205794
Proposed development	Concept Proposal for redevelopment of the Sydney Football Stadium and Stage 1 Demolition as described in Section 5.0 of this Environmental Impact Statement
Prepared by	
Name	Michael Oliver
Qualifications	Bachelor of Planning (Hons 1) UNSW, Master of Environmental Law (University of Sydney)
Address	173 Sussex Street, Sydney NSW 2000
In respect of	State Significant Development - Development Application
Certification	
	I certify that I have prepared the content of this EIS and to the best of my knowledge: • it is in accordance with Schedule 2 of the Environmental Planning and Assessment Regulation 2000; • all available information that is relevant to the environmental assessment of the development to which the statement relates; and • the information contained in the statement is neither false nor misleading.
Signature	
Name	Michael Oliver
Date	June 2018

Executive Summary

Purpose of this Report

This submission to the Department of Planning and Environment (the Department) comprises an Environmental Impact Statement (EIS) for a Development Application under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). It relates to a Concept Proposal for building envelope, development and operational parameters for a new rectangular stadium with up to 45,000 seats (55,000 patrons in concert mode) and Stage 1 Detailed Proposal for demolition of the existing Sydney Football Stadium.

Development for the purpose of a 'recreation facility (major)' with a capital investment value (CIV) of more than $30 million, and development at the Sydney Sports Stadiums Site with a CIV of more than $10 million, is identified as development that is State Significant Development (SSD) in Schedules 1 and 2 of State Environmental Planning Policy (State and Regional Development) 2011. As the proposed development will have a capital investment value of $674 million it is SSD.

A request for the issue of Secretary's Environmental Assessment Requirements (SEARs) was made by Infrastructure NSW on 4 April 2018. Accordingly, the SEARs were issued on 3 May 2018. This submission is in accordance with the Department's guidelines for SSD applications lodged under Part 4 of the EP&A Act, and addresses the issues raised in the SEARs.

The Site

The site is located at 40-44 Driver Avenue Moore Park within the Sydney Cricket Ground Precinct. The site comprises the Sydney Football Stadium, ancillary buildings including the Sheridan Centre, Roosters Building, Waratahs Building, Cricket NSW Administration Building and Indoor Wickets, and the Moore Park 1 (MP1) Car Park (temporary use only for demolition and construction compound). It is bound by Moore Park Road to the north, Fox Studios to the east, the existing Sydney Cricket Ground stadium to the south and Driver Avenue to the west.

The site is legally described as Part Lot 1528 and Part Lot 1530 in Deposited Plan 752011 and Lot 1 in Deposited Plan 205794. The site is Crown Land, with the Sydney Cricket Ground and the Sydney Sports Ground Trust designated as the sole trustee under the *Sydney Cricket and Sports Ground Act 1978*. The site is wholly contained within designated land controlled by the Sydney Cricket and Sports Ground Trust (SCSGT) under Schedule 2A of the *Sydney Cricket and Sports Ground Act 1978*.

The site is largely surrounded by Centennial and Moore Parks, the Fox Studios and Entertainment Quarter precincts and the residential suburb of Paddington. Located approximately 3km from the Sydney CBD, the site is connected to Sydney's transport network through existing bus routes and will benefit from a dedicated stop on the soon to be completed Sydney CBD and South East Light Rail.

Overview of the Project

The Development Application is made in respect of the Concept Proposal and detailed Stage 1 works for the redevelopment of the Sydney Football Stadium. The Concept Proposal for the redevelopment of the Sydney Football Stadium includes:

- Land use.
- Maximum building envelope.
- Maximum stadium capacity of 45,000 seats (55,000 patrons in concert mode) and 1,500 staff.
- Urban Design Guidelines and Design Excellence Strategy to guide the detailed design.
- General functional parameters for the design and operation of the new stadium, including:
  - Range of general admission seating, members areas, premium box/terrace, function/lounge and corporate suite options;
  - Administration offices;
  - New roof with 100% drip-line coverage of all permanent seating;

  - Flood lighting, stadium video screens and other ancillary fittings;
  - Food and beverage offerings;
  - Facilities for team, media, administration and amenity such as changing rooms, media rooms and stadium; and
  - Provision for ancillary uses within the stadium and surrounds.
- Principles and strategies for transport and access arrangements.
- Indicative staging of the development.

The detailed Stage 1 demolition works comprise the following

- Demolition of the existing Sydney Football Stadium and ancillary structures, including the existing Sheridan, Roosters, Waratahs and Cricket NSW buildings down to existing slab level.
- Site and construction management, including use of the existing MP1 car park for construction staging, management and waste processing, and provisions for temporary pedestrian and vehicular access management.
- Protection and retention of Tree 125 (Moreton Bay Fig adjacent to Moore Park Road) and Tree 231-238 cluster (Hills Weeping Fig and others near Paddington Lane) and existing street trees, and removal of all other vegetation within the proposed future building footprint.
- Make good of the site suitable for construction of the new stadium (subject to separate Stage 2 application).

The Development Application is accompanied by Urban Design Guidelines prepared by SJB Urban Design, a Design Excellence Strategy prepared by Infrastructure NSW in consultation with the NSW Government Architect's Office, and a Construction (Demolition) Management Plan for the demolition phase prepared by Aver Consulting which include further details as to the scope of the Concept Proposal and detailed Stage 1 demolition works.

The detailed design and construction of the new stadium will be the subject of a separate, future Stage 2 Development Application.

Planning Context

This EIS has been prepared in accordance with the requirements of the EP&A Act and Regulation, and **Section 6.0** of the EIS considers all applicable legislation in detail.

Pursuant to clause 8A of State Environmental Planning Policy (State and Regional Development) 2011, the Minister for Planning is the consent authority for a State Significant Development Application made by or on behalf of a public authority. This application is made by Infrastructure NSW, who are a public authority.

The Sydney Local Environmental Plan 2012 applies to the site, with the proposed development being permissible with consent and consistent with the SP1 Special Activities – Recreation Facility (Major) zoning. The LEP does not impose any building height or floor space ratio controls. This Concept Proposal is prepared in satisfaction of clause 7.20, which requires the preparation of a site-specific development control plan (fulfilled by a Concept DA in accordance with section 4.23 of the EP&A Act) for development with a site area of more than 5,000m^2 or with a building height of more than 25 metres. A Design Excellence Strategy accompanies this EIS which sets out how the detailed design which will be the subject of a future Stage 2 Development Application will achieve design excellence in accordance with clause 6.21 of the LEP, and this strategy has been endorsed by the NSW Government Architect.

Environmental Impacts and Mitigation Measures

This EIS provides an assessment of the environmental impacts of the proposed development in accordance with the SEARs and sets out the undertakings made by Infrastructure NSW to manage and minimise potential impacts arising from the development.

The Concept Proposal is informed by Urban Design Guidelines prepared by SJB which will inform the detailed design of the new football stadium and ensure that the development provides for the enhancement of the sporting precinct and integrates with the surrounds of the site including the Sydney Football Stadium, Moore Park, the

Entertainment Quarter, Paddington and Surry Hills. The maximum building envelope has been informed by detailed analysis of the site and surrounds, community and stakeholder feedback received during the pre-lodgement consultation, an understanding of the functional requirements of the future stadium based on a reference stadium design, and benchmarking of aspects of the stadium experience against best-practice examples of stadia in Australian and internationally.

A Construction (Demolition) Management Plan has been prepared for the Stage 1 Demolition phase in order to identify, avoid and mitigate potential impacts demolition activities to mitigate impacts on the amenity of the local area. Construction hours will be limited to 7am-6pm Monday to Friday and 8am to 1pm on Saturdays, with no work on Sundays or public holidays. Construction traffic will be coordinated to minimise conflict with local traffic flows through the establishment of heavy vehicle site access routes that avoid local roads, management of construction works and traffic during event days for SCG and Infrastructure NSW will have ongoing liaison with the Sydney Coordination Office in order to manage cumulative impacts with other development and infrastructure projects.

With the capacity of the stadium remaining at approximately 45,000 seats (55,000 patrons in concert mode), the proposed redevelopment is not expected to impact on existing game-day transport and traffic arrangements. Much of the existing car parking for event days occurs on land which is outside of the control of the SCSGT (e.g. Moore Park, Entertainment Quarter, Sydney Boys & Girls High School), and the SCSGT will continue to work with these stakeholders to improve the operation of the precinct during major events. The commencement of the CBD and South East Light Rail, which includes a dedicated stop for the Moore Park Precinct, will improve public transport service to the precinct and the associated public domain works will improve pedestrian wayfinding and safety between the stadium and Central Station. A key move within the Concept Proposal and future stadium will be to promote increased non-car travel modes for public transport, active travel and point-to-point services in order to encourage behavioural change and reduce congestion during major event periods.

The site is located within a major sporting events precinct that has been in existence for over a century, and the redevelopment of the stadium will ensure that this social and cultural heritage is maintained by providing a facility capable of continuing this association into the future. The proposed building envelope and design guidelines have been informed by an assessment of the Indigenous and Non-Indigenous heritage values and potential of the site and surrounds, and include a series of measures to ensure that this heritage is protected throughout the demolition and construction phases. Further investigations will be undertaken to locate and avoid impacts upon Busby's Bore area of the Bore where the exact location is not precisely understood which is known to traverse the northern portion of the site. The stadium redevelopment provides a unique opportunity to provide for enhanced interpretation and understanding of the heritage values of the site and surrounds, particularly through the design of the public realm which will be the subject of the competitive design process and Stage 2 Development Application.

The proposed redevelopment of the stadium will provide for a number of significant social and economic benefits to the local and wider community, including; enhanced attendance experience for patrons of the stadium through the provision of a higher quality stadium with improved facilities, delivery of a premier sporting venue in the Sydney CBD capable of attracting marquee national and international events with associated tourism and employment benefits, more equitable access for patrons and visitors, increased safety and security to meet modern standards and requirements for large venues, and the generation of additional employment throughout construction and operation.

The EIS provides a detailed assessment of the environmental, social and economic impacts of the proposed development drawing upon information provided by a team of experienced technical experts across a range of disciplines. The EIS concludes that the proposed development will not result in any significant social, economic or environmental impacts which cannot be appropriately managed through the identified mitigation measures, standard conditions of consent and a separate future planning process for the Stage 2 Development Application.

Conclusion and Justification

The EIS addresses the SEARs, and provides a full assessment of the relevant environmental planning considerations in relation to the Concept Proposal and detailed Stage 1 works for the Sydney Football Stadium redevelopment. The potential impacts of the development are acceptable and are able to be managed through compliance with the identified mitigation measures and further environmental assessment to be carried out in relation to the future Stage 2 Development Application. Given the planning merits of the proposal, the proposed development warrants approval by the Minister for Planning.

1.0 Introduction

This Environmental Impact Statement (EIS) is submitted to the Department of Planning and Environment pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) in support of an application for State Significant Development (SSD) involving the redevelopment of the Sydney Football Stadium (SFS).

Development for the purpose of a 'recreation facility (major)' with a capital investment value (CIV) of more than $30 million, and development at the Sydney Sports Stadiums Site with a CIV of more than $10 million, are identified in Schedules 1 and 2 respectively of State Environmental Planning Policy (State and Regional Development) 2011 and is therefore declared to be SSD for the purposes of the EP&A Act. The CIV of the proposed development is $674 million.

This EIS has been prepared in accordance with the requirements of Part 4 of the EP&A Act, Schedule 2 of the *Environmental Planning and Assessment Regulation 2000* (EP&A Regulation), and the Secretary's Environmental Assessment Requirements (SEARs) for the preparation of the EIS, which are included at **Appendix A.** This EIS should be read in conjunction with the supporting information and plans appended to and accompanying this report.

The report has been prepared by Ethos Urban on behalf of Infrastructure NSW, and is based on the Urban Design Guidelines prepared by SJB Urban Design (see **Appendix C**), Construction (Demolition) Management Plan by Aver Consulting (**Appendix E**) and other supporting technical information appended to the report (see Table of Contents).

1.1 Overview of Project

This application comprises a State Significant Development Concept Development Application for the redevelopment of the Sydney Football Stadium at 40-44 Driver Avenue, Moore Park, and sets out detailed proposals for demolition of the existing stadium and site preparation works (Stage 1).

Pursuant to clause 4.22 of the EP&A Act, this application sets out the Concept Proposal for the redevelopment of the Sydney Football Stadium, including:

- Land use.
- Maximum building envelope.
- Maximum stadium capacity of 45,000 seats (55,000 patrons in concert mode) and 1,500 staff.
- Urban Design Guidelines and Design Excellence Strategy to guide the detailed design.
- General functional parameters for the design and operation of the new stadium, including:
  - Range of general admission seating, members areas, premium box/terrace, function/lounge and corporate suite options;
  - Administration offices;
  - New roof with 100% drip-line coverage of all permanent seating;
  - Flood lighting, stadium video screens and other ancillary fittings;
  - Food and beverage offerings;
  - Facilities for team, media, administration and amenity such as changing rooms, media rooms and stadium; and
  - Provision for ancillary uses within the stadium and surrounds.
- Principles and strategies for transport and access arrangements.
- Indicative staging of the development.

Furthermore, and pursuant to clause 4.22(2) of the EP&A Act, this application seeks development consent for the carrying out of the detailed Stage 1 works, comprising

- Demolition of the existing Sydney Football Stadium and ancillary structures, including the existing Sheridan, Roosters, Waratahs and Cricket NSW buildings down to existing slab level.

- Site and construction management, including use of the existing MP1 car park for construction staging, management and waste processing, and provisions for temporary pedestrian and vehicular access management.
- Protection and retention of Tree 125 (Moreton Bay Fig adjacent to Moore Park Road) and Tree 231-238 cluster (Hills Weeping Fig and others near Paddington Lane) and all existing street trees located outside of the site boundary, with the removal of all other vegetation within the proposed future building footprint.
- Make good of the site suitable for construction of the new stadium (subject to separate Stage 2 application).

The detailed design and construction of the new stadium will be the subject of a separate future Development Application (Stage 2). **Figure 1** provides an overview of the two-stage planning approvals process.

A detailed description of the proposed development that is the subject of this application is provided at **Section 5.0** of this report.

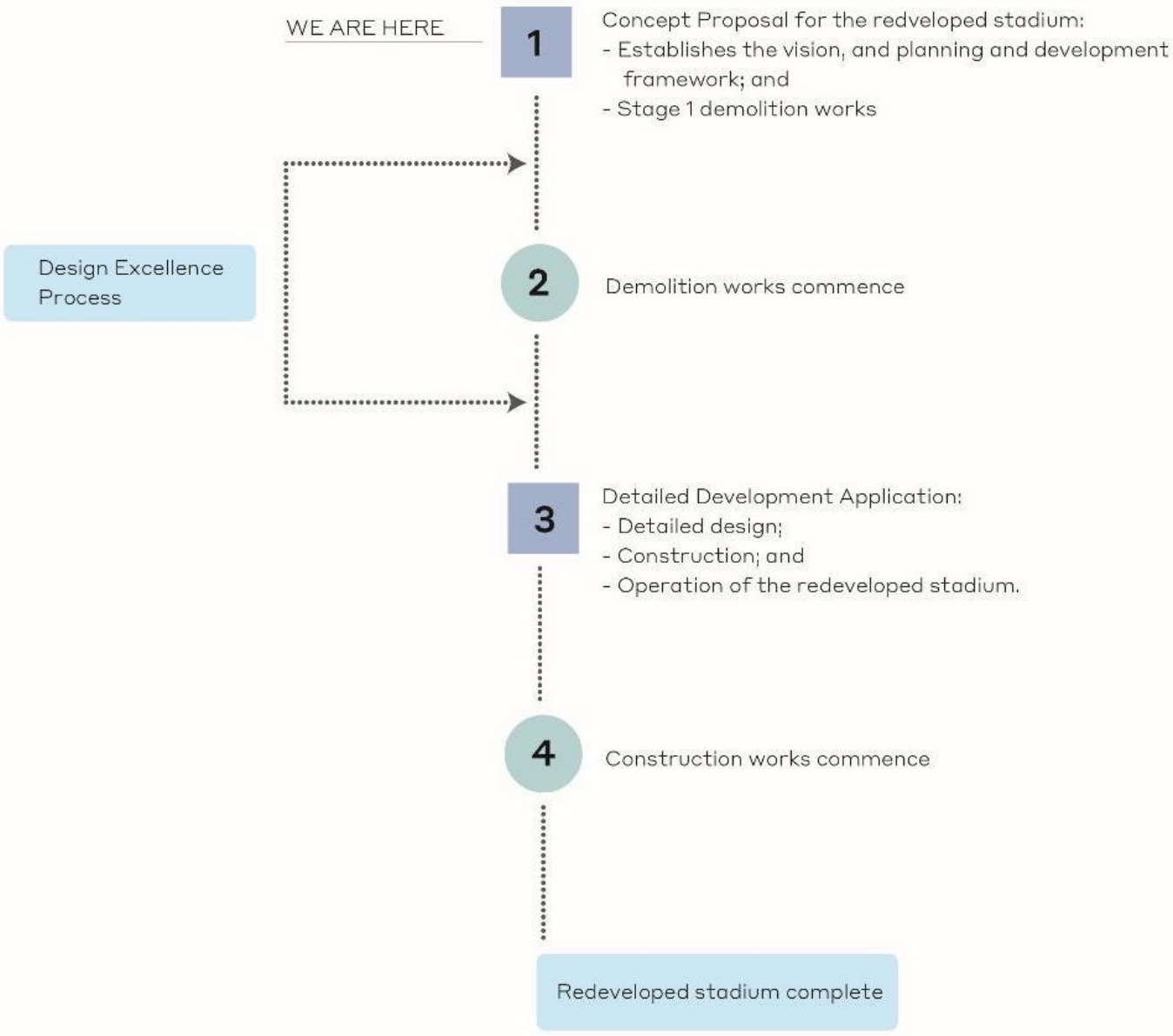


Figure 1 Planning process

Source: Ethos Urban

1.2 Secretary's Environmental Assessment Requirements

In accordance with Section 4.12(8) of the EP&A Act, the Secretary of the Department of Planning and Environment issued the requirements for the preparation of the EIS on 3 May 2018. A copy of the Secretary's Environmental Assessment Requirements (SEARs) is included at **Appendix B**. A detailed summary of the individual matters listed in the SEARs and where each of these requirements has been addressed in this report and the accompanying technical studies is set out in the following **Table 1**.

Table 1 Reference to information in EIS and appendices to address Secretary's requirements

Requirement	**Reference**	
General	**EIS**	**Appendix**
The Environmental Impact Statement (EIS) must address the *Environmental Planning and Assessment Act 1979* and meet the minimum form and content requirements in clauses 6 and 7 of Schedule 2 the Environmental Planning and Assessment Regulation 2000.		N/A
Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.	Section 7.0	N/A
Where relevant, the assessment of the key issues below, and any other significant issues identified in the risk assessment, must include: • adequate baseline data; • consideration of potential cumulative impacts due to other development in the vicinity (completed, underway or proposed); and measures to avoid, minimise and if necessary, offset the predicted impacts, including detailed contingency plans for managing any significant risks to the environment.	Section 6.0 and 7.0	N/A
The EIS must be accompanied by a report from a qualified quantity surveyor providing: • a detailed calculation of the capital investment value (CIV) (as defined in clause 3 of the Environmental Planning and Assessment Regulation 2000) of the proposal, including details of all assumptions and components from which the CIV calculation is derived; • an estimate of the jobs that will be created by the future development during the construction and operational phases of the development; and • certification that the information provided is accurate at the date of preparation.		Provided under separate cover
Key Issues – Concept Proposal	**EIS**	**Appendix**
The EIS must address the following specific matters:		
1. Statutory and Strategic Context – including: Address the statutory provisions contained in all relevant environmental planning instruments, including: • *State Environmental Planning Policy (State & Regional Development) 2011;* • *State Environmental Planning Policy (Infrastructure) 2007;* • *State Environmental Planning Policy No.55 – Remediation of Land;* • *Draft State Environmental Planning Policy No.55 – Remediation of Land;* • *Draft State Environmental Planning Policy (Environment) 2017;* • *State Environmental Planning Policy No. 64 – Advertising and Signage;* • *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005;* • *Sydney Local Environmental Plan 2012; and* • *Centennial Park and Moore Park Trust Act 1983.*	6.3	
Permissibility Detail the nature and extent of any prohibitions that apply to the development.	6.3	N/A
Development Standards Identify compliance with the development standards applying to the site and provide justification for any contravention of the development standards	6.3	N/A

2. Policies Address the relevant planning provisions, goals and strategic planning objectives in the following: • *NSW State Priorities;* • *The Greater Sydney Regional Plan – A Metropolis of Three Cities;* • *NSW Future Transport Strategy 2056;* • *NSW Energy Efficiency Action Plan 2013;* • *NSW Resource Efficiency Policy (GREP);* • *Greener Places (NSW Government Architect Green Infrastructure Policy);* • *Eastern City District Plan;* • *Better Placed: An integrated design policy for built environment of NSW;* • *Crime Prevention Through Environmental Design (CPTED) Principles;* • *Sustainable Sydney 2030;* • *Sydney's Cycling Future 2013;* • *Sydney's Walking Future 2013;* • *Sydney's Bus Future 2013;* • *Sydney City Centre Access Strategy 2013;* • *City of Sydney Policy for Waste Minimisation in New Development;* • *City of Sydney Tourism Action Plan 2015;* • *City Art-Public Art Strategy City of Sydney;* • *Sydney Development Control Plan 2012;* • *Centennial Parklands Plan of Management 2006 – 2016;* • *Centennial Park Master Plan 2040;* • *Moore Park Master Plan;* • *Centennial Parklands Conservation Management Plan; and* • *Centennial Parklands Tree Master Plan.*	Section 6.2	**Appendix C:** • Moore Park Master Plan- section 2.2 • Centennial Park Master Plan 2040- section 2.6 • Centennial Parklands Plan of Management- section 2.6 • City Art- Public Art Strategy- section 7.5 • Better Placed- section 3.2 • Greener Places- section 3.6 • CPTED- section 8 **Appendix D:** • Better Placed- Attachment B Appendix E: **Appendix F:** Centennial Parklands Tree Master Plan- section 5.1 **Appendix L:** Centennial Parklands Conservation Management Plan- section 2.6 **Appendix H:** • Greater Sydney Regional Plan- section 7.1.1 • Eastern District Plan- section 7.1.2 • Sydney DCP- section 7.3.1 • Centennial Park Master Plan- section 7.3.2 • Moore Park Master Plan- section 7.3.3 • Centennial Parklands Conservation Management Plan- section 7.3.4 • Centennial Parklands Tree Management Plan- section 7.3.6 **Appendix N:** • NSW Energy Efficiency Action Plan- section 3.2 • Resource Efficiency Policy- section 3.3 • Sustainable Sydney 2030- section 3.1 • City of Sydney Policy for Waste Minimisation- section 4.3.4

Requirement	Reference	
3. Staging		
• Provide a detailed overall staging plan, including demolition, remediation, construction, public domain works and operation phases.	Section 5.2, 4.0	Appendix E- section 10
• Provide preliminary information as applicable to each stage of works as follows:		
○ a preliminary Construction Traffic and Pedestrian Management Strategy demonstrating principles for consideration of the management of the impact in relation to traffic generated as a result of all stages of the development;	Section 6.6	Appendix E- section 9 Appendix J- section 6
○ description of how future design will manage impacts on the interception and management of groundwater;		Appendix T- section 6 Appendix E- section 12
○ detail regarding waste management: identification, quantification and classification of potential waste streams and measures to be implemented to manage, reuse, recycle and safely dispose of this waste.	Section 6.18 Section 6.12	Appendix N- section 4.3
○ detail the method of calculating contributions, any Voluntary Planning Agreement or other legally binding instrument and consultation with relevant agencies;	Section 6.2	N/A Appendix G- section 8.5
○ detail regarding consultation and collaboration with relevant agencies, including Centennial Park and Moore Park Trust; and		
○ detail regarding potential contamination management.	Section 4.0 Section 6.17	Appendix S
4. Design Excellence		
• Describe the design process leading to the Concept Proposal.	Sections 5.1 and 6.4	Appendix C- section 7
• Provide design quality guidelines for the future built form and integration of landscape design.	Section 5.1 and 6.4	Appendix C- section 8 Appendix D
• Provide a Design Excellence Strategy, developed in consultation with, and to the satisfaction of, the Government Architect NSW, for the future stages of the development which demonstrates how design excellence will be achieved. This strategy should set out:	Section 5.1 and 6.4.3	
○ the design process leading to the Concept Proposal;		
○ the type and details of the competitive design excellence processes proposed to be undertaken, in accordance with clause 6.21 of the Sydney LEP, and clear rationale for this process having regard to established design excellence policy context and best practice;		
○ a method setting out how the proposed design excellence, public domain and landscape excellence process will be implemented as part of the planning process; and		
○ details of the method for the incorporation of sustainability into design.		
5. Built Form and Urban Design		
• Outline consultation with the Government Architect NSW and how the feedback has been incorporated into the Concept Proposal;	Section 6.4.3	Appendix D Appendix G- section 8.5.3
• Provide a detailed justification for the building envelope, supported by an urban design analysis, to justify that the proposed built envelope location and design are based on careful consideration of the benefits and potential impacts in the context of the immediate locality and the broader Sydney CBD area;	Section 6.4	Appendix C- section 7
• Provide appropriate design guidelines and development parameters within the context of the locality, including but not limited to:	Section 5.1 and 6.4	Appendix C- sections 7, 8 and appendices
○ site analysis;		
○ site layout;		
○ gross floor area;		
○ building footprints;		
○ height and massing of the building envelopes; and		
○ open spaces, landscaping, green infrastructure and tree planting to improve amenity and reduce urban heat island effect;		
• 'Demonstrate how the design of the development will be integrated into the City of Sydney and fit within the context of the site and the existing and future desired character of Moore Park area, including the adjacent Sydney Cricket Ground; and	Section 6.4	Appendix C- section 7
• Provide an in indicative building and landscape design showing a possible built form within the proposed building envelope.	Section 6.4	Appendix C- Appendices

Requirement	Reference	
6. Transport and Accessibility • Include a preliminary traffic and transport accessibility impact assessment, which includes details of, but is not limited to, the following:	Section 6.6	
○ accurate details of the current daily and peak hour vehicle, existing and future public transport networks, special event bus network and pedestrian and cycle movement provided on the road network surrounding the stadium on a typical weekday and weekend (event day) with consideration of simultaneous events within the Moore Park Precinct and parking occupancy on a typical weekday and weekend (event day);		Appendix J- section 3
○ indicate likely activities at the stadium, including type of events, number of events and capacity of the various type of events;		Appendix J- section 3.1.5 & 4.1
○ details of estimated total daily and peak hour trips generated by the completed stadium including vehicle (including point-to-point transport), public transport, coaches, special event buses, pedestrian and bicycle trips based on surveys of comparable stadiums for concerts (including field and seated capacity), major events (full capacity), minor events (half capacity) and no event scenarios and the impact upon the surrounding road network with consideration of simultaneous events within the Moore Park Precinct;		Appendix J- section 3.4, 4.1 & 4.8
○ the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site including the Sydney Light Rail, pedestrian and bicycle networks and associated infrastructure, including future enhancements, to meet the likely demand for the future development;		Appendix J- section 4.5 & 4.8
○ the estimated future daily and peak hour trips and movements for each event scenario in the surrounding road network, including cumulative impact from nearby development, within and outside of the Moore Park Precinct, including from point to point transport and continued operation of special event buses;		Appendix J- section 4.1 & 4.8
○ the impact of trips generated (pedestrians, bicycle, public transport and motor vehicles) by the development on nearby intersections, with consideration of the cumulative impacts from other approved developments in the vicinity and simultaneous events within the Moore Park Precinct, and the need/associated funding for, and details of, upgrades or road improvement works, if required, supported by appropriate modelling and analysis to the satisfaction of RMS and TfNSW;		Appendix J- section 4.8
○ the identification of infrastructure required to ameliorate any impacts on transport efficiency and public transport operation (including the Sydney Light Rail and special event buses) and road safety impacts associated with the future development, including details on improvements required to affected intersections;		Appendix J- section 4.5 & 4.12
○ the impact of increased demand generated by operations of the stadium on the existing and future public transport network, pedestrian and bicycle networks and the adequacy of the network to cater for the development;		Appendix J- section 4.1
○ integration of the development with the existing/future public transport network including the Sydney Light Rail;		
○ proposed future design measures to encourage worker and travel by public transport, walking, cycling and car sharing, including minimal on- site parking for spectator use and provision of adequate bicycle parking and end of trip facilities and improved connections between the stadium and public transport and pedestrian and bicycle networks, and, consideration of a Green Travel Plan;		Appendix J- section 4.5 Appendix J- section 5
○ the proposed wayfinding strategy and associated infrastructure to support the movement of large crowds to and from public transport servicing the Moore Park Precinct (including from the CBD), special event buses, coach and point to point transport pick-up and drop-off locations, including consideration of signage height and illumination and decision points;		Appendix J- section 4.3.2 & 5.2

Requirement	Reference	
○ the proposed operational access arrangements, including internal circulation network (for motor vehicles, pedestrians and cyclists), and measures to mitigate any associated traffic and road safety impacts and impacts on the road network, public transport and pedestrian and cycle networks;		Appendix J- section 4.2
○ the impact of any proposed roads or driveways;		
○ access arrangements for emergency vehicles, including protocol procedures for emergency vehicle access to protected areas during emergencies;		N/A
○ strategies to segregate hostile vehicles from public transport users (including paths between stadium and public transport) and areas of people congregation;		Appendix J- section 3.9
○ provisions of set-down/pick-up facilities for buses, coaches, taxis and ride- share vehicles for each event scenario;		Appendix J- section 4.12
○ compliance with the relevant and Australian Standards for vehicle parking with accessible areas close to main entries incorporating lighting and passive surveillance; and		Appendix J- section 3.10, 4.6 & 4.12
○ service vehicle access, delivery and loading arrangements and estimated service vehicle movements (including vehicle type, routes and the likely arrival and departure times) including the potential for latent capacity in the development's loading and servicing facilities to be made available to third party logistics operators.		Appendix J- section 4.7.2 Appendix J- section 4.9
Relevant Policies and Guidelines: • *Guide to Traffic Generating Developments (Roads and Maritime Services)* • *EIS Guidelines – Road and Related Facilities (DoPI)* • *Cycling Aspects of Austroads Guides* • *NSW Planning Guidelines for Walking and Cycling* • *Austroads Guide to Traffic Management Part 12: Traffic Impacts of Development* • *Standards Australia AS2890.3 (Bicycle Parking Facilities)* • *Development near Rail Corridors and Busy Roads – Interim Guideline.*		
7. Noise and Vibration • Identify and provide a qualitative assessment of the main noise and vibration generating sources including demolition, site preparation, piling, earthworks, construction, concrete crushing and operation of the stadium (including pre, during, and post- events where amplification will be used). • Outline key noise mitigation and management measures that would inform the final design of the stadium to minimise potential noise impacts on the surrounding sensitive receivers. Relevant Policies and Guidelines: • *NSW Noise Policy for Industry 2017 (EPA)* • *Interim Construction Noise Guideline (DECC)* • *Assessing Vibration: A Technical Guideline 2006* • *Development Near Rail Corridors and Busy Roads – Interim Guideline (Department of Planning 2008)*	Section 6.7	Appendix K- section 3 Appendix K- section 6
8. Environmental Amenity • Include a preliminary assessment demonstrating how the concept proposal and future design requirements will achieve a high level of environmental amenity for the locality including:	Refer below	
• solar access and overshadowing analysis outlining the impacts on adjoining developments and the public domain, including design options to minimise impacts;	Section 6.5.2	Appendix C- Appendices

Requirement	Reference	
• view analysis to the site from key vantage points and streetscape locations (photomontages or perspectives should be provided showing the building envelope and likely future development);	Section 6.5.1	Appendix H
• lighting strategy and measures to reduce spill into the surrounding sensitive receivers;	Section 6.4	Appendix C- sections 4.10, 7.2 & 8
• consideration of a shading strategy for both ticket holders and other users of the future proposed public domain areas;	Section 6.4	Appendix C- section 8.4
• strategy for pedestrian access routes throughout the public domain;	Sections 5.1.3, 6.4 and 6.6	Appendices C- section 8.4
• preliminary wind strategy outlining the process to identify and manage wind impacts of the future design of the development on the comfort and safety of workers and visitors to the future development;	Section 6.5.3	Appendix I
• impacts of the proposal on the amenity of surrounding developments including measures to minimise potential overshadowing, privacy and view impacts; and	Sections 6.5.1, 6.5.2 and 6.5.5	Appendices C- section 7.2 Appendix H
• public domain guidelines including any proposals for Driver Avenue.	Section 6.4	Appendix C- section 8
9. Ecologically Sustainable Development (ESD) • Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated in the design and ongoing operation phases of the development. • Include a framework for how the future development will be designed to consider and reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction design measures, future proofing, use of sustainable and low-carbon materials, energy and water efficient design and technology and use of renewable energy. • Undertake a preliminary analysis of the likely service demands for drinking water, wastewater and recycled water services and outline the preliminary Integrated Water Management principles detailing any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design. This should include preliminary details of sustainability initiatives that will minimise/reduce the demand on supplies.	Section 5.1.5 and 6.11	Appendix N Appendix U- section 2 Appendix N- section 4.2
10. Environmental Risk Include preliminary consideration of the management of environmental risks to all persons utilising the future facility, including but not limited to: • extreme heat; • storms and flooding; • terror attacks; and • building performance and mitigation of climate change, including consideration of Green Star Performance.	Section 6.16	Appendix N- section 4.7 Appendix R
11. Design of Resilience to Climate Change Provide a statement regarding how the design of the future development is responsive to the CSIRO projected impacts of climate change. Specifically: • hotter days and more frequent heatwave events; • extended drought periods; • more extreme rainfall events; • gustier wind conditions; and • how these will inform material selection and social equity aspects (respite/shelter areas).	Section 6.11	Appendix N- section 4.6 & 4.7
12. Heritage • Provide a heritage impact statement addressing the extent of impact on the heritage significance of the heritage items/heritage conservation areas, landscape items and settings within the site and in the vicinity, in accordance with the guidelines in the NSW Heritage Manual. In particular, the impact of the proposal on the following heritage items should be assessed: o Busby's Bore including tunnels, shafts and wells; and o Sydney Cricket Ground;	Sections 6.9 and 6.10	Appendix L

Requirement	Reference	
○ Moore Park Showgrounds; ○ Paddington South Conservation Area; ○ Moore Park Conservation Area; and ○ Sydney Cricket Ground Conservation Area.		
• Address any archaeological potential and significance of the site and the potential impacts the development may have on this significance and include a preliminary mitigation strategy.	Section 6.9 and 6.10	Appendix M
13. Aboriginal Heritage • Demonstrate attempts to avoid any impact upon cultural heritage values and identify any conservation outcomes. • Outline the approach to be undertaken for future stage/s of the development in relation to Aboriginal cultural heritage values that exist across the whole area that will be affected by the development and document these in an Aboriginal Cultural Heritage Assessment Report (ACHAR), including details of activities undertaken to date. This may identify the need for surface survey and test excavation in addition to the following: ○ consultation with Aboriginal people must be undertaken and documented in accordance with the guidelines. The significance of cultural heritage values for Aboriginal people who have a cultural association with the lands must be documented in the ACHAR; and ○ impacts on Aboriginal cultural heritage values are to be assessed and documented in the ACHAR. The ACHAR must demonstrate attempts to avoid impact upon cultural heritage values and identify any conservation outcomes. Where impacts are unavoidable, the ACHAR must outline measures proposed to mitigate impacts. Any objects recorded as part of the assessment must be documented and notified to OEH. Relevant Policies and Guidelines: • *Code of Practice for Archaeological Investigations of Aboriginal Objects in NSW (OEH, 2010)* • *Guide to investigating, assessing and reporting on Aboriginal Cultural Heritage in NSW (DECCW, 2011)* • *Aboriginal cultural heritage consultation requirements for proponents 2010 (DECCW).*	Section 6.10	Appendix L- section 6.10 Appendix L- section 6.5 Appendix M
14. Flora and Fauna Assess and document the flora and fauna impacts related to the concept proposal envelope, including basement, by a suitably qualified person. *Note: Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report.*	Section 15	Appendix Q
15. Drainage Provide preliminary detail of drainage associated with the proposal, including stormwater and drainage infrastructure and rainwater harvesting and storage for on-site reuse. Relevant Policies and Guidelines: • *Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)*	Section 6.14	Appendix P
16. Flooding Identify flood risk on-site (detailing the most recent flood studies for the project area) and consideration of any relevant provisions of the NSW Floodplain Development Manual (2005), including the potential effects of climate change, sea level rise and an increase in rainfall intensity. If there is a material flood risk, include design solutions for mitigation.	Section 6.14	Appendix P
17. Social and Economic Impacts • Assess the social and economic impacts of the development, including the benefits the stadium will generate for Sydney CBD and the local region, including tourism, retail, entertainment and night-time economies.	Section 6.13	Appendix O

Requirement	Reference	
18. Utilities • In consultation with relevant agencies, identify the existing capacity of utilities to service the future development and any augmentation and easement requirements of the development for the provision of utilities including staging of infrastructure upgrades. Relevant Policies and Guidelines: • *Water Sharing Plans for the Greater Metropolitan Region Groundwater Sources and Unregulated River Water Sources.*	Section 6.20	Appendix U
19. Community Engagement Strategy • Identify and detail all communication and community engagement strategies leading up to the Concept Proposal. • Identify all future community engagement strategies in relation to the future stages of the proposal.	Section 4.0	Appendix G
20. Prescribed Airspace for Sydney Airport Identify any short term and long-term impacts of the future proposal on the prescribed airspace for Sydney Airport.	Section 6.19	N/A
Stage 1 Works	**EIS**	**Appendix**
The EIS for the Stage 1 early works including demolition must address the following specific matters:		
1. Transport and Accessibility • A Transport Impact Assessment must be prepared that assesses the transport impacts of Stage 1 works. • Detail access arrangements for Stage 1 works and measures to mitigate any associated pedestrian, cyclist or traffic impacts, including the preparation of a draft Construction Traffic and Pedestrian Management Plan (CTPMP) for Stage 1 works addressing but not limited to, the following: o assessment of cumulative impacts associated with other surrounding construction activities, including the Sydney Light Rail project; o detail of measures to mitigate any Stage 1 impacts to traffic, public transport, special event buses, pedestrians or cyclists within the Moore Park Precinct, including during concurrent events; o an assessment of road safety at key intersections and locations subject to heavy vehicle traffic movements and high pedestrian activity; o details of the Stage 1 works program detailing the anticipated duration and highlighting significant and milestone stages and events during the demolition process; o details of anticipated peak hour and daily vehicle movements to and from the site including details of vehicle size and heavy vehicle routes (including turn paths); o details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicles, including measures to reduce construction worker private vehicle trips; o details of any crane locations and road closures; o details of temporary cycling and pedestrian access during Stage 1; and o details of a consultation strategy for liaison with surrounding stakeholders prior to and during the Stage 1 works. Relevant Policies and Guidelines: • *Guide to traffic generating developments (RMS)*	Sections 6.6 and 6.8	Appendix J- section 6 Appendix J- section 6.11 Appendix J- section 6.11, 6.12 & 6.13 Appendix J- section 6.11 & 6.13 Appendix J- section 6.4 Appendix J- section 6.5 & 6.6 Appendix J- section 6.7 Appendix J- section 6.7 and 6.14 Appendix J- section 6.10
2. Noise and Vibration • Identify and provide a quantitative assessment of the main noise and vibration generating sources and activities during Stage 1 including, where applicable, demolition, site preparation, piling, earthworks, construction, concrete crushing. This should include an assessment of: o background noise at the most affected sensitive receivers within the site, adjacent to the site and in close proximity to the site in accordance with the guidance material provided in EPA's Noise Policy for Industry (NPI) 2017;	Section 6.7	Appendix K- section 3

Requirement	Reference	
○ detailed noise modelling of noise generated as part of the Stage 1 works at sensitive receivers; ○ intra-day respite periods for continuous, noisy works; and ○ the locations and hours of all noisy equipment, including the concrete batching plant, if relevant; • Outline measures to minimise and mitigate the potential noise impacts on all surrounding sensitive receivers. Relevant Policies and Guidelines: • *Interim Construction Noise Guideline (DECC)* • *Assessing Vibration: A Technical Guideline 2006*		Appendix K- section 6
3. Stormwater, Sediment and Erosion Controls • Detail the management of stormwater flows during Stage 1 works, including detail of stormwater and drainage infrastructure to mitigate impacts of flows to and from the site as well as rainwater harvesting and storage on-site for reuse during Stage 1. • Detail measures and procedures to minimise and manage the generation and off-site transmission of sediment, dust and fine particles. Relevant Policies and Guidelines: • *Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)* • *Managing Urban Stormwater – Soils & Construction Volume 1 2004 (Landcom)* • *Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (EPA)* • *Guidelines for development adjoining land and water managed by DECCW (OEH, 2013)*	Section 6.14	Appendix P- section 5 Appendix E- section 8
4. Waste, Recycling and Resource Recovery • Identify, quantify and classify the likely waste streams to be generated during the Stage 1 works, including any hazardous materials, and describe the measures to be implemented to reduce, reuse, recycle, where possible and then manage and safely dispose of this waste. Identify useable spoil management initiatives. • Identify appropriate servicing arrangements (including but not limited to, waste management, loading zones, mechanical plant) for the site.	Sections 6.12	Appendices E- section 12 Appendix N- Appendices Appendix E- sections 9, 10 and 12
5. Ecologically Sustainable Development (ESD) • Detail how ESD principles (as defined in clause 7(4) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000) will be incorporated into the demolition stage of the development. • Address how the proposed demolition will reflect national best practice sustainable building principles to improve environmental performance and reduce ecological impact. This should be based on a materiality assessment and include waste reduction measures, use of sustainable and low carbon materials, energy and water efficient design and technology and use of renewable energy.	Sections 6.11 and 6.21	Appendices N- Appendices Appendices N- Appendices
6. Flora and Fauna • Assess and document the flora and fauna impacts related to the Stage 1 works, by a suitably qualified person. • Note: Notwithstanding these requirements, the Biodiversity Conservation Act 2016 requires that State Significant Development Applications be accompanied by a Biodiversity Development Assessment Report.	Section 6.15	Appendix Q
7. Prescribed Airspace for Sydney Airport Identify any short-term impacts of the demolition works on the prescribed airspace for Sydney Airport.	Section 6.19	N/A
8. Construction Hours Identify proposed hours for the Stage 1 works and provide details of the instances where it is expected that works will be required to be carried out outside the standard construction hours.	Section 5.2, 6.7 and 6.8	Appendices E- section 3
9. Construction Traffic and Pedestrian Management Prepare a Construction Traffic and Pedestrian Management Plan, including:	Sections 6.7 and 6.8	Appendix J- section 6 Appendix E- section 9

Requirement	Reference	
• details of vehicle routes, numbers of trucks by type, hours of operation, access management and traffic control measures for all phases of Stage 1; • assessment of cumulative impacts associated with other construction activities (Light rail construction, Alexandria to Moore Park project, etc.) • an assessment of road safety at key intersections; • details of anticipated peak hour and daily truck movements to and from the site during normal weekday and during scheduled special events during Stage 1; • details of access arrangements for workers to/from the site, emergency vehicles and service vehicle movements; • details of temporary cycling and pedestrian access during Stage 1; • an assessment of traffic and transport impacts during Stage 1 and how these impacts will be mitigated for any associated traffic, pedestrians, cyclists and public transport operations, • the need for any temporary changes to existing traffic control signals and existing traffic movements and likely impacts determined; and • a plan for timely repair to damaged infrastructure and how these will be managed throughout the construction period.		
Plans and Documents	**EIS**	**Appendix**
The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the Environmental Planning and Assessment Regulation 2000. Provide these as part of the EIS rather than as separate documents.	-	
In addition, the EIS must include the following: • Architectural drawings (dimensioned and including RLs, scale and north point);	-	Appendix C
• Site Survey Plan, showing existing levels, location and height of existing and adjacent structures / buildings and boundaries;	-	Appendix B
• Site Analysis Plan;	-	Appendix C
• Sediment and Erosion Control Plan;	-	Appendix P
• Shadow Diagrams including public domain shadow diagrams;	-	Appendix C
• View Analysis / Photomontages, including from public vantage points;	-	Appendix H
• 3D Digital model (generally in accordance with the City of Sydney Council's requirements);	-	Under separate cover
• Flood Assessment and Drainage Plan;	-	Appendix P
• Flora and Fauna Assessment;	-	Appendix Q
• Arborist Report;	-	Appendix F
• ESD Strategy for Future Development;	-	Appendix N
• Heritage Impact Statement;	-	Appendix L
• Acoustic Impact Assessment Report;	-	Appendix K
• Traffic and Transport Accessibility Impact Assessment Report;	-	Appendix J
• Public Domain Strategy;	-	Appendix C
• Preliminary Construction Management Plan for the Future Stage inclusive of a Preliminary Construction Pedestrian and Traffic Management Plan;	-	Appendix E
• Construction Management Plan for Stage 1 Works inclusive of a draft Construction Pedestrian and Traffic Management Plan; and	-	Appendix E
• Pre-Submission Community Consultation Report.	-	Appendix G
Consultation	**EIS**	**Appendix**
During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups, special interest groups including local	Section 4.0	Appendix G

Requirement	Reference	
Aboriginal land councils and registered Aboriginal stakeholders, and affected landowners (if required). In particular, you must consult with: • City of Sydney Council; • Office of Environment and Heritage; • Government Architect NSW; • Sydney Airport Corporation Limited and Civil Aviation Safety Authority; • Transport for NSW (TfNSW); • Sydney Coordination Office within TfNSW; • Environmental Protection Authority; • Sydney Water; • Department of Primary Industries; and • Roads and Maritime Services. Consultation with Council and agencies should commence as soon as practicable. The EIS must describe the consultation process and the issues raised, and identify where the design of the development has been amended in response to these issues. Where amendments have not been made to address an issue, a short explanation should be provided.		

2.0 Project Objectives and Strategic Need

2.1 Background to the Development

The Sydney Football Stadium (SFS) is a significant component of the sports facilities that comprise the Sydney Cricket and Sports Ground. Completed in 1988, the SFS has hosted numerous sporting events in its 30 years of operation for a number of sporting codes including football (soccer), rugby league and rugby union as well as occasional music concerts and other entertainment events.

In 2012, the NSW Government released the NSW Stadia Strategy. The strategy covered seven Government-owned or leased stadia, namely:

- Stadium Australia;
- Sydney Showground;
- Sydney Cricket Ground (SCG);
- Sydney Football Stadium;
- Western Sydney Stadium;
- Hunter Stadium; and
- Wollongong Stadium.

The NSW Stadia Strategy 2012 provides a vision for the future of stadia within NSW, prioritising investment to achieve the optimal mix of venues to meet community needs and to ensure a vibrant sports and event environment in NSW. A key action of the strategy included development of master plans for designated Tier 1 stadia and their precincts covering transport, integrated ticketing, spectator experience, facilities for players, media, corporate and restaurant and entertainment provision to ensure that each stadium meets the facility requirements to fulfil this role. SFS is one of three stadia within NSW designated to operate as a Tier 1 stadia, with the others being Stadium Australia (Olympic Park) and the Sydney Cricket Ground (SCG).

In order to qualify for Tier 1 status, a stadium is required to include:

- Seating capacity greater than 40,000;
- Regularly host international sporting events;
- Offer extensive corporate facilities, including corporate suites, open-air corporate boxes and other function/dining facilities; and
- Be the home ground for sporting teams playing in national competitions.

Following release of the NSW Stadia Strategy, the Sydney Cricket and Sports Ground Trust (Trust) undertook master planning culminating in the 2015 Preliminary Sydney Cricket Ground Master Plan. This master plan defines the context for future redevelopment of the SCG, SFS and related sports infrastructure to ensure that the precinct continues to meet the needs and expectations of visitors and tenants into the future.

In a competitive rectangular stadium landscape nationally, where more modern and better-equipped stadia in other capital cities compete to attract major events, the existing SFS is now facing serious commercial and operational challenges in remaining relevant and competitive for existing and future hirers and patrons. Owing to the age of SFS, there are a number of deficiencies in the provision of facilities that are required to function as a Tier 1 stadium. The stadium has aged poorly and fails to meet modern patron and hirer expectations in terms of patron experience, crowd management, safety/security, accessibility, facilities for core tenants, operational efficiency, premium hospitality and food/beverage offerings and media requirements.

On 24 November 2017, the NSW Premier announced the SFS Redevelopment. The redevelopment will include demolition of the existing facility and replacement with a modern, globally competitive stadium that achieves the requirements for a Tier 1 stadium to meet future requirements. Redevelopment of the SFS will assist in supporting the following principles established by the NSW Government, Infrastructure NSW and the Sydney Cricket and Sports Ground Trust to:

- Bring sport back to the city;
- Create a flexible venue suitable for sports and major events alike;
- Create a precinct well connected to the city;
- Include technology for the future;
- Create a venue for professional sport;
- Create a publicly accessible entertainment and recreational facility; and
- Create a sustainable future.

The SFS Redevelopment will create a new stadium with up to 45,000 seats (55,000 patrons in concert mode) through a range of seating styles and corporate facilities. The stadium will include state of the art technology with digital screens throughout to improve the fan experience. Sightlines will be improved and facilities including catering, amenities and accessibility will be designed to service future needs, creating a world-class customer experience.

2.2 Strategic need for the proposal

The existing Sydney Football Stadium (SFS) has been in service since 1988. It has provided the stage for some of Australia's biggest sporting and cultural moments including NRL and A-League Grand Finals, Bledisloe Cups, the Edinburgh Military Tattoo and FIFA World Cup Qualifiers.

The SFS was one of the first stadia of its kind in Australia and was designed primarily as an amphitheatre to watch sport, setting a new standard for facilities in the 1980s. Immediately prior to the opening of the SFS, Concord Oval on Parramatta Road was the best stadium available in Sydney to host matches for the 1987 Rugby World Cup, including pool matches, a quarter-final and a semi-final.

The SFS continues the long tradition of sporting facilities within the Sydney Cricket and Sports Ground precinct. The venue has been altered over the years to cater for a variety of events, operational requirements and broadcast needs. These modifications do not offer the same functionality as a venue in which these aspects are inherent to the design.

The SFS is now the oldest top-tier rectangular stadium in Australia. The current SFS was designed and constructed to meet the requirements of sports during the 1980s, and has not kept pace with the modern sports landscape in terms of the standard of facilities and user experience required. Over the three decades since the SFS opened, the nature of sport has changed significantly with implications for how modern stadiums operate:

- The SFS was conceived at a time when sport was largely amateur in Australia. Many players held day jobs and undertook competitive sport on weekends. Sporting competitions have evolved and expanded, such that the premiere sport teams in Sydney now compete on national (National Rugby League, A-/W-League) and international (Super Rugby, Asian Champions League) stages rather than in NSW-based local competitions, creating opportunities for increased interstate and international patronage of local stadia;
- Sport has shifted from a predominately male-based activity (in terms of both players and spectators), with the growth in women's sports an emerging area with significant potential growth and increased attendance by both women and families at live sporting matches.
- Games were often played at 3pm on Saturday or Sunday afternoons and events were usually complete before sun down. Such factors influenced the design of the SFS, most notably through a lack of food and beverage offerings or considerations for pre and post-match entertainment spaces.
- New and innovative sporting concepts have generated new uses for stadia beyond the traditional football codes, including Rugby Sevens, AFL-X and imported sports events such as US College Football, which see the stadium required to host more day-long and multi-day events with a different and higher standard of facilities required to accommodate this usage pattern.
- Technological improvements in the broadcasting and viewing of televised sports means that sport can now be viewed in a wide array of locations and contexts (e.g. TV, mobile, internet), not just through attendance in-person at a stadium;

- Modern leisure and entertainment options across a wide range of sectors now compete directly with stadiums, and have created higher community expectations of the standard of experience provided at a venue in terms of activation, food and beverage offering, seating comfort, visibility and weather protection. The experience at sport and large-scale events has been revolutionised around the world since the SFS was constructed. Modern stadia feature enhanced food and beverage spaces, entry and egress points, seating styles, technology capabilities, fan areas, entertainment options, media requirements and amenities within the design. A visit to a stadium can be either to support a favoured team or as a leisure activity.
- The building standards at the time the SFS was constructed differ markedly from those of today[1]. Accessibility was not a key factor in design and the SFS has a deficit of approximately 400 accessible seats compared to modern standards. Women were under-represented as both spectators and players at the time of construction. As such, inclusions such as adequate female toilets and change rooms were not considered.

The SFS currently suffers from poor facilities for participants and spectators, particularly in the following areas:

- **Safety, security and compliance**: The environment in which the stadium operates has changed markedly over the past 30 years. Both the Building Code of Australia and the Disability Discrimination Act have been introduced since the stadium opened. The stadium should have over 400 wheelchair-accessible seats to meet modern accessibility requirements – only 28 are currently provided. Similarly, in the order of 350 female toilets would be required to meet current BCA requirements – only 48 are currently provided (approximately 1 per 1,000 seats). The security context in which public assembly venues operate is also different from that of 30 years ago, and continues to evolve in response to terrorism threats. The stadium does not meet current building standards, provide adequate access for people with a disability, meet recommended targets for egress, or have security features suitable for the current environment.
- **Operational inefficiencies**: The venue's physical configuration leads to operational inefficiencies and additional costs due to the time required to prepare the stadium for events, and the need to allocate additional staff to ensure safety during events. The stadium's concourses are narrow and become unreasonably crowded as insufficient toilets and food outlets result in queueing. Back-of-house facilities are inadequate. There is one goods lift, storage and dock areas are undersize and the lack of a basement results in routine cross-over between operations and patrons. This lack of back-of-house infrastructure results in inefficient movement of goods, staff and waste around the venue.
- **The venue experience**: While the issues described above all have an adverse impact on the experience of patrons, the key shortcomings of the venue experience are the viewing quality and the lack of weather protection. Sightlines at the stadium vary and some viewlines are obstructed. For example, high balls cannot be seen due to the overhang of the tier above. The roof of the stadium provides coverage of only 55 per cent to the "drip line" - the lowest level of weather protection of any top-tier stadium in Australia. The lower bowl is entirely uncovered, and the upper levels are exposed to weather through openings at the back of the tiers.
- **The hirer experience**: The hirers of the venue also experience its limitations: there are only two change rooms, for example, and these are small and poorly equipped. The coaches' boxes are inadequate and have an obstructed view of the field of play. Hirers of more modern stadium enjoy at least 4 change rooms and sufficient space and facilities for media.

Sporting infrastructure can bring a number of significant benefits to the NSW community, including through direct and indirect economic activity and employment, as well as in less tangible cultural and social aspects. The NSW Stadia Strategy (2012) seeks to maximise the community benefits provided by stadia owned and funded by the NSW Government, by ensuring that:

- Facilities for participants and spectators are improved;
- Venues cater for multi-purpose sport and community use; and
- NSW becomes Australia's preferred location for major national and international events.

At a regional-scale, the Greater Sydney Regional Plan and the Eastern City District Plan identify the Sydney CBD and surrounds as the focal point of Sydney's existing and future tourism economy, and an appropriate and central location for the provision of infrastructure to meet the needs of the Eastern City. The redevelopment of the SFS

[1] For example, the first edition of the Building Code of Australia was published in 1988, after stadium design had completed for the existing SFS, and the *Disability Discrimination Act 1992* (Cth) and Disability (Access to Premises - Buildings) Standards 2010 did not exist at the time of design and construction for the current SFS.

complements proposed stadia investments in the Central City (Western Sydney Stadium, refurbishment of ANZ Stadium) to meet the existing and future requirements of Sydney over the short, medium and long-terms.

The NSW Stadia Strategy provides a framework for NSW Government investment and aims to achieve an optimal mix of venues (Western Sydney Stadium 30,000, Sydney Football Stadium up to 45,000 and Stadium Australia 75,000) to meet community needs and to ensure a vibrant sports and event environment in NSW.
In order to be competitive within Australia's stadia network and secure major events for the people of NSW, the SFS needs to be rebuilt to meet modern safety, comfort and spectator demands. A redeveloped SFS adjacent to Sydney's CBD will enhance the experience for all visitors, help to grow attendances and generate additional tourism to Sydney through the ability to host major events.

2.3 Objectives of the Development

The objectives of the project are to:

- Support the NSW Stadia Strategy (2012) by providing a Tier 1 rectangular stadium at Moore Park with up to 45,000 seats (55,000 patrons in concert mode);
- Support the realisation of a Tier 1 rectangular stadium at Moore Park by:
  - Creating a flexible venue suitable for sports, e-sports and major events alike;
  - Including technology for the future;
  - Delivering a venue for the growth of men's and women's elite sport, as well as the ability to adapt to new sports and the rise of e-sports;
  - Creating a publicly accessible entertainment and recreational facility;
  - Building a stadium integrated with its surrounds including Centennial and Moore Parks and the surrounding residential and business areas; and
  - Creating a sustainable future.
- Reaffirm the Sydney Cricket and Sports Ground Precinct as the Eastern City's premiere major sporting destinations by delivering a Tier 1 rectangular-pitch stadium that is capable of hosting national and international-scale events commensurate with Sydney's status as a global city;
- Ensure that the future of the Sydney Football Stadium is informed and guided by appropriate urban design principles and that the detailed design is subject to a competitive design process to facilitate the delivery of a high urban quality;
- Enhance pedestrian connectivity and provide for improved integration of the stadium into its surrounding context;
- Demonstrate excellence in environmental sustainability; and
- Maximise the direct and indirect economic, social and cultural benefits to NSW from the project.

2.4 Analysis of Alternatives

The following section identifies the strategic need for the proposal and outlines the alternative options which have been considered.

2.4.1 Alternative Options

Four primary options have been considered by Infrastructure NSW in responding to the identified strategic need for and objectives for the provision of a Tier 1 rectangular stadium at Moore Park. The options outlined below are generally aligned with those described in the Business Case Summary published by Infrastructure NSW in March 2018. The Business Case Summary document can be accessed via www.infrastructure.nsw.gov.au.

Option 1 – Do Nothing

The 'Do Nothing' scenario would involve the existing Sydney Football Stadium remaining in situ. For the reasons set out in Sections 2.3.1, the stadium does not currently meet the criteria for a Tier 1 stadium, and is delivering a comparatively poorer experience for players and spectators as other stadia are modernised and redeveloped within

the local, national and international contexts. Without improvement, the 'Do Nothing' scenario would see the existing stadium fall further behind competing facilities interstate and overseas, with Sydney and NSW missing out on major events due to the poor quality of the existing facility. This would include both local competition events as well as missed opportunities associated with the potential hosting of major regional and international events. This would result in the loss of potential economic, social and cultural opportunities.

Due to the existing shortcomings of the stadium in terms of accessibility, amenities and safety, the 'Do Nothing' scenario is not considered to be an acceptable approach for a major public facility. Over the short to medium-term, it is likely that the SFS would not be able to continue operating for safety reasons.

Option 2 – 'Base Case' – Minimal investment

The 'Base Case' option would involve undertaking minimal capital works to refurbish the SFS to addresses immediate safety, security and compliance issues in order to keep the venue operational. The Base Case improves safety and security, but does not achieve full compliance, notably in the areas of disability access and the provision of an adequate number of toilets, due to the lack of physical space in the existing stadium structure. It also does not improve the spectator experience, or the operational efficiency of the stadium, as the seating bowl and roof line are unchanged and no basement spaces are included.

Under the 'Base Case' the SFS would be able to continue operations over the medium-term, but would still not meet the criteria for a Tier 1 stadium due to safety, amenity and facility issues that are inherent to the current stadium design and functionality. Whilst the stadium would likely maintain the majority of its existing event profile, the shortcomings in the user and visitor experience would likely see a decline in attendance and the loss of major national, regional and international events to other stadia beyond NSW. This would result in the loss of potential economic, social and cultural opportunities for Sydney and NSW.

Option 3 – Refurbishment Option

Option 3 comprises a full refurbishment of the SFS beyond the 'Base Case' to attain Tier 1 status for the current venue. Refurbishing the stadium encompasses the works included in the Base Case together with a new roof covering 95 per cent of the seats and a basement with a 360-degree ring road. This option would address immediate safety, security and compliance issues and improve the amenity of the stadium. The provision of roof coverage to most seats would improve the fan experience, and a basement and ring road would significantly improve back-of-house operations.

Despite the moderate improvements in spectator experience and operability which the refurbishment would bring, many of the limitations and constraints of the current venue's structure would remain. Viewing positions within the stadium would be unchanged, much of the corporate product would remain in poor locations, and concourses, amenities and concessions would continue to fall short of relevant benchmarks. In addition, much of the current building would be retained in the refurbishment option and the remaining useful life of the stadium after refurbishment would therefore be shorter than that of a fully redeveloped stadium built to modern standards.

The proposed works required under Option 3 would be substantial, involve significant cost, and would require the stadium to be closed for an extended period of time with similar construction impacts to those outlined in Option 4 for development of a new stadium. The Business Case Summary prepared by Infrastructure NSW demonstrates that the total project costs for a full stadium refurbishment ($599.27m)would be less than 5% lower than the cost of constructing a new purpose-built stadium ($626.68m – Option 4).

Option 4 – New Stadium

The construction of a new Tier 1 stadium in the location of the current SFS would meet the current and anticipated future expectations of a modern sporting venue, delivering a standard of user and visitor experience which is commensurate with the premier role of Moore Park as the Eastern City's major sporting precinct. As a modern stadium purpose-built to meet current and anticipated future requirements, the new stadium option would meet all current construction and operational facility, building, accessibility and safety standards. Delivery of a new stadium provides the flexibility to address existing shortcomings that cannot be addressed under a refurbishment option, for example, the restricted physical proximity to Moore Park Road, full pedestrian concourse within and around the stadium, and the provision of an internal basement ring-road to facilitate loading and servicing.

Within the Business Case Summary, Option 4 considered the provision of both 40,000 and 45,000 seat stadium options. The provision of the smaller option provided minimal cost savings and resulted in a generally similar

physical envelope and built form, whilst providing a reduced capacity that limits the social and economic benefits of providing a new stadium.

A key benefit of Option 4 is the ability of a new stadium to meet the current and anticipated future requirements of a modern stadium, such that both the physical and functional lifespan of the new facility is maximised. By delivering a purpose-built stadium with the benefit of current knowledge of design and construction techniques and a closer perspective to future sports and spectator requirements, Option 4 provides the ability to deliver a stadium that will last longer physically and remain relevant and useable. The design lifespan of a new stadium under Option 4 is 50 years, which significantly exceeds that of the renovation and refurbishment options.

Ultimately, for the reasons outlined above and detailed further in this EIS, the NSW Government has determined that the development of a new stadium capable of meeting the current and future requirements of a modern stadium represents the best outcome from a social, economic and environmental perspective, and is the project which forms the basis for this planning application.

2.4.2 Conclusion

Based upon the strategic framework for investment established under the NSW Stadia Strategy and the analysis of a range of options for capital expenditure to ensure that a Tier 1 rectangular stadium is provided at Moore Park, the NSW Government has determined that the complete redevelopment of the SFS is the most effective and appropriate means of achieving the project objectives.

3.0 Site Analysis

3.1 Site Location and Context

The Sydney Football Stadium is located at 40-44 Driver Avenue, Moore Park within the City of Sydney Local Government Area (LGA). The site is located on the eastern edge of the city, approximately 3km from the Sydney CBD, and forms part of a larger entertainment and recreation precinct shared with Centennial and Moore Parks, Fox Studios, and the Entertainment Quarter. It is located in the northern corner of the precinct and is bounded by Moore Park Road to the north, Paddington Lane to the east, the existing Sydney Cricket Ground stadium to the south and Driver Avenue to the west. The site is located immediately to the south of the suburb of Paddington, with the suburbs of Centennial Park to the east and Surry Hills to the west.

The site is connected to Sydney's transport network through existing bus routes and train stations, and will benefit from a dedicated stop on the soon to be completed Sydney CBD and South East Light Rail.

The site's locational context is shown at **Figure 1** below.

Figure 2 Location Plan

Source: Ethos Urban

3.2 Site Description and Ownership

The site is legally described as Part Lots 1528 and 1530 in Deposited Plan 752011 and Lot 1 in Deposited Plan 205794. The site is Crown Land, with the Sydney Cricket Ground and the Sydney Sports Ground Trust designated as the sole trustee under the *Sydney Cricket and Sports Ground Act 1978*.

The site to which the Concept Proposal and Stage 1 Demolition State Significant Development Application is as follows:

- Sydney Football Stadium, including forecourts and Paddington Lane vehicular access.
- Ancillary buildings including the Sheridan Centre, Roosters Building, Waratahs Building, Cricket NSW Administration Building and Indoor Wickets.
- Moore Park 1 (MP1) Car Park – included within site boundary to allow for temporary use of this area for demolition staging and construction compound.

Figure 2 illustrates the site boundary for the Development Application, whilst **Figure 21** shows the delineation of the MP1 Car Park and the remainder of the site boundary.

The site boundary does not include the Australian Rugby Development Centre building, the Rugby League Central building, the Sydney Cricket Ground or the Outdoor Practice Wickets, which are not subject to this application.

The site has an area of 8.7 hectares including the MP1 car park, and an approximately 270m long frontage to Moore Park Road (plus 100m for MP1) and an approximately 100m frontage to Driver Avenue (plus 170m for MP1). A Site Survey Plan has been prepared by Rygate Surveyors and is located at **Appendix B.**

3.2.1 Existing Development

Figure 5 identifies key existing buildings, structures and facilities within land that is controlled by the SCSGT. The key existing buildings which are located within the site subject to this Development Application are:

- the Sydney Football Stadium (also known as Allianz Stadium);
- the Sheridan Centre;
- the SFS Forecourt that includes the headquarters for the Sydney Roosters and Waratahs and the stadium store;
- the Cricket NSW Headquarters, venue services building, and the indoor wickets; and
- the members' car park (also known as Moore Park Carpark 1 or MP1).

The Rugby League Central (**Figure 3**) and Australian Rugby Development Centre (ARDC) (**Figure 4**) buildings that are located respectively along the north and south of the MP1 carpark, will be retained and do not form part of the redevelopment site. Whist forming part of the context of the site, the Sydney Cricket Ground, Moore Park and Fox Studios/Entertainment Quarter are also not subject to this application.

Figure 3 Rugby League Central Building being retained, as viewed from the MP1 car park

Figure 4 The Australian Rugby Development Centre (UTS) being retained, as viewed from the MP1 car park

Items within the SCGT Boundary

1. MP1 Carpark
2. Rugby Australia
3. The Sheridan Centre
4. National Rugby League (NRL) Headquarters
5. Sydney Roosters
6. Allianz Stadium Forecourt
7. Stadium Store
8. Allianz Stadium
9. Moore Park Road Entrance
10. Paddington Lane
11. Venue Services
12. Cricket NSW
13. The Stadium Club
14. Cricket NSW Outdoor Wickets
15. Tennis Courts/Flexible event spaces
16. Back of House servicing zone for Allianz Stadium
17. Tennis Courts
18. Sydney Cricket Ground Members Gate
19. Heritage Stand
20. Sydney Cricket Ground

Items outside the SCGT Boundary

1. Moore Park West
2. Moore Park East
3. Victoria Barracks
4. Tibby Cotter Walkway
5. Kippax Lake Field
6. Kippax Lake
7. Tramway Oval Field
8. Bus Loop and Bus Stops
9. Driver Avenue
10. Imperial Hotel
11. Fox Studios
12. Entertainment Quarter and Moore Park Showgrounc Clock Tower

Figure 5 Existing development and features of the site and adjoining Sydney Cricket Ground

Source: SJB

Sydney Football Stadium

The Sydney Football Stadium (also known as Allianz Stadium) was opened on 24 January 1988, during Australia's Bicentennial. It was designed by Philip Cox Richardson Taylor and Partners Pty Ltd and is characterised by its 'saddle' structure, whereby the roofline is curved to stretch over the taller east and west stands and curved down to the north and south stands. The openings in the roof line are oriented to the north and south and reduce the height of the stadium in these corners to approximately three storeys. The venue has undergone a number of alterations over the years and most recently underwent minor renovations in 2006.

The key features of the stadium are as follows:

- The stadium has the capacity for up to 45,000 patrons surrounding a rectangular field. Spectators are divided into the members area comprising the upper levels of the western stand, and all other areas are split between general public and corporate ticket holders. Currently a total of 28 seats are available for persons in wheelchairs (0.06% of total seats).
- The stadium has been designed with a wave-like roof structure that shields approximately 55% of the available seating from the 'drip line', which means the lower bowl is uncovered and the back of the tiers are exposed through openings in the roof line. This makes it the lowest level of weather protection of any Tier 1 stadium in Australia.
- Access to the stadium and surrounds are controlled by fences, with entry/exit to the site available from two locations; off Driver Avenue and Moore Park Road. The Moore Park Road entry is only accessible via stairs, to manage the 12m change in level between the road and stadium that was created when the seating bowl was sunk into the ground to reduce bulk and scale. Entry to the stadium perimeter is closed off and limited to authorised personnel outside of event times.
- Circulation within the stadium is relatively narrow, non-continuous ring at the main concourse level.
- Food and beverage kiosks are available, however, due to spatial constraints there is very limited opportunity for food preparation, restricting the nature and quality of food offerings. Corporate facilities are available in the form of private suites which are undercover balcony seating areas with private catering and beverage options.
- There are currently only 2 change rooms, limiting the ability of the stadium to host double-headers or development events (e.g. W-League and A-League double-headers, reserve and junior grade games).
- Only 48 women's toilets are available within the stadium.
- Servicing is accommodated in back of house areas with only a single goods lift for the entire stadium, with no basement loading area to provide for separation of loading activities from public/operational spaces. The movement of goods, staff and waste around the venue routinely leads to a cross-over between operations and patrons, including the movement of waste and goods through internal patron circulation spaces during events.
- Large scale LED screens are located at the northern and southern ends of the stadium.

The key features of the stadium are reflective of the time in which it was designed and constructed. It was conceived when sport was largely amateur in Australia and there was no Super Rugby, A-League and women's competitions or special events like the Sydney Sevens and US College Football. This period in both sport and architectural design have influenced the design and operation of SFS, which does not hold up to contemporary standards in accessibility, women's sports and facilities, corporate facilities, modern media requirements, access or evacuation.

The SFS hosts Australia's international teams such as the Kangaroos, the Wallabies and the Socceroos, with the longer term and more permanent tenants being the Sydney Roosters (since 1988), the NSW Waratahs (since 1996) and Sydney FC (since 2005). The stadium also regularly hosts other sporting events such as the International Rugby 7's tournament and occasional live music concerts. The range of events typically hosted at the SFS during the year comprise:

- NRL season games and finals
- Rugby league: international games
- Super Rugby: Waratahs season games and finals
- Rugby union: international games

- Rugby Sevens tournament (multi-day)
- A-League: Sydney FC season games and finals
- Asian Champions League games
- Football: international games
- Concerts: maximum of six per annum
- Others sporting events: US College Football, AFL X

Crowds at each event vary significantly depending on a range of factors including the type of event, participating teams, popularity, day of the week, time of day, weather conditions and timing of other competing entertainment events, amongst others. Typical average and maximum crowds for key regular events are as follows:

- Rugby League (2017): Average = 15,524; Maximum = 40,864
- Rugby Union (2017): Average = 18,876; Maximum = 35,925
- Football (2017): Average = 17,364; Maximum = 41,546
- Concerts: Ranging from 30,000 to 50,000

Staffing levels at the existing stadium vary based upon the type of event and scale of anticipated attendance. Staff at a typical event includes customer service, crowd safety, catering and on-site contractor personnel. Typical staffing levels for events held at the SFS are as follows:

- Up to 15,000 patrons: 600 staff
- 15,000- 30,000 patrons: 830 staff
- 30,000- 45,000 patrons: 1,200 staff
- Concerts: 1,200 staff
- No event: 130 staff

Photographs of the stadium are included at **Figure 6** to **Figure 10** below.

Figure 6 Aerial of Sydney Football Stadium
Source: Sydney FC

Figure 7 The entry plaza off Driver Avenue

Figure 8 The entry plaza off Moore Park Road

Figure 9 Media/broadcasting facilities

Figure 10 The field looking south

Moore Park Car Park 1 (MP1)

Moore Park Car Park 1 (MP1) is the only permanent publicly accessible car park on the site and is located to the north west of the stadium. The car park is predominantly used by employees of the Trust and patrons of the members-only Stadium Club, and accommodates approximately 600 spaces. Vehicular access to MP1 is available from Driver Avenue only. Refer to **Figure 16** below. The MP1 Car Park forms part of the site which is the subject of this Development Application to allow for temporary use of this area for demolition and construction staging.

Ancillary Buildings

Several of the existing buildings and facilities for the tenants and venue members of the SCG and SFS are also proposed for demolition. These buildings are identified on the aerial photograph at **Figure 5** above, and comprise the following:

- the Sheridan Building that is located at the corner of Moore Park Road and Driver Avenue, and included medical facilities and offices for the Sydney Swans and Sydney FC;
- the SFS Forecourt that fronts Driver Avenue, to the south of the Sheridan Building, and includes the headquarters for the Sydney Roosters and Waratahs and the stadium store;
- the Cricket NSW Headquarters, venue services building, and the indoor wickets that front driver avenue and the entry plaza to the SFS; and
- the Stadium Club that is located just south of the stadium and comprises a gym, 25m outdoor pool, four synthetic tennis courts, two squash courts, large group exercise studio, spa, sauna, steam room, crèche, two massage rooms and a café. It for exclusive use of the members of the SFS.

Refer to **Figure 11** to **Figure 15** below.

Figure 11 The Sheridan Building adjoining the Australian Rugby Development Centre, as viewed from Moore Park Road

Figure 12 SFS Forecourt, as viewed from the MP1 car park

Figure 13 The Stadium Store, as viewed from the entry plaza

Figure 14 Cricket NSW Headquarters

Source/Notes:

Figure 15 The Stadium Club

Figure 16 MP1 car park looking west

3.2.2 Access

Being located on the periphery of the Sydney CBD, the site and surrounding precinct is highly accessible through a range of transport modes as illustrated at **Figure 17** and discussed below.

- **Light Rail** – The Precinct will benefit from ongoing improvements in Sydney's light rail network. Specifically, the CBD and South East Light Rail is a new light rail line for Sydney, currently under construction. The 12km route will feature 19 stops, extending from Circular Quay, along George Street to Central Station, through Surry Hills to Moore Park, and then to Kensington and Kingsford via Anzac Parade and Randwick via Alison Road and High Street. The site will be serviced by a dedicated light rail stop, with services expected to commence in 2019 before the opening of the stadium. For special events (e.g. large double-headers with crowds within the SFS and SCG totalling over 45,000), the light rail will have the capacity to transport approximately 14,000 passengers per hour to and from Moore Park. Improvements to the public domain within the stadium precinct and upgrades to wayfinding will enhance the connection between the Light Rail Stop and the redeveloped stadium.
- **Heavy Rail** – Central Station is located 1.8km to the west of the site and is accessible via major walking routes along Foveaux Street, Devonshire Street and Cleveland Street. No additional services are provided on event days, however, all lines are able to access Central Station including the airport line and intercity lines. Upgrades to Central Station and the Light Rail interchange will provide public domain improvements and wayfinding that will assist in access to the stadium.
- **Buses** – Event buses run from Central Station and carry people directly into the Moore Park precinct, using the event bus loop located to the west of the SFS. The loop has a turnaround facility with the capacity to accommodate 26 buses at one time, with these dedicated buses typically operating for an hour after events. Anzac Parade, Moore Park Road and Oxford Street are also major bus routes, with a number of stops available in proximity of the site. Buses along Anzac Parade also benefit from a bus only road that bypasses peak hour traffic.
- **Pedestrian** – The site benefits from an extensive pedestrian network connecting the stadium to the surrounds. The terrain surrounding the stadium is relatively flat, with the exception of the approach from Central Station to SFS that is characterised by a steep incline and within Paddington to the north which slopes up to the ridgeline at Oxford Street. The main pedestrian thoroughfares comprise Foveaux Street and Fitzroy Street (1.5km travel distance), Cooper Street and Arthur Street (1.8km travel distance), Devonshire Street and Cleveland Street (2.4km travel distance). The highest volume of pedestrians is observed along Foveaux Street and Fitzroy Street, which is lined with bars and restaurants, but it is expected that Devonshire Street will be heavily utilised once the construction of the light rail is complete.
- **Bicycle Access and Parking** – The site is located within an extensive local and regional bicycle network. This includes off-road shared paths along Anzac Parade, Lang Road, Cleveland Street and Fitzroy Street, and an on-road dedicated bicycle lane on Moore Park Road and Greens Road. These pathways ensure that safe and direct cycle routes are available in every direction to the site. Bicycle parking rails are available in close proximity of the stadium and close to the SFS entries.
- **Vehicle access and parking** – SFS is located at the junction of significant state and regional roads, which are used to access the major on-site car parks and vehicle drop-off points. Anzac Parade is the key north/south road and is three lanes in each direction and provides access to the Eastern Distributor tunnel as well as other key destinations. Moore Park Road is the key east/west road and is two lanes in each direction and also provides access to the eastern distributor. The other vehicular routes are Lang Road and Driver Avenue, which provide access to the four car parking areas within the Precinct. These parking areas are generally located to the west and south of the stadium and are shared with the Entertainment Quarter and SCG, providing in the order of 4,700 parking spaces. An additional 750 parking spaces are available in the Sydney Girls and Sydney Boys High School Grounds, which are made available during key events.
- **Taxis and Rideshare** – set down areas for taxis and rideshares are provided on the eastern side of Driver Avenue for pre-event drop-offs. These areas are not available after events when Driver Avenue is typically closed to improve pedestrian safety and assist in clearing the car parks. The only dedicated post event private vehicle pick-up area is on Errol Flynn Avenue adjacent to the Entertainment Quarter.

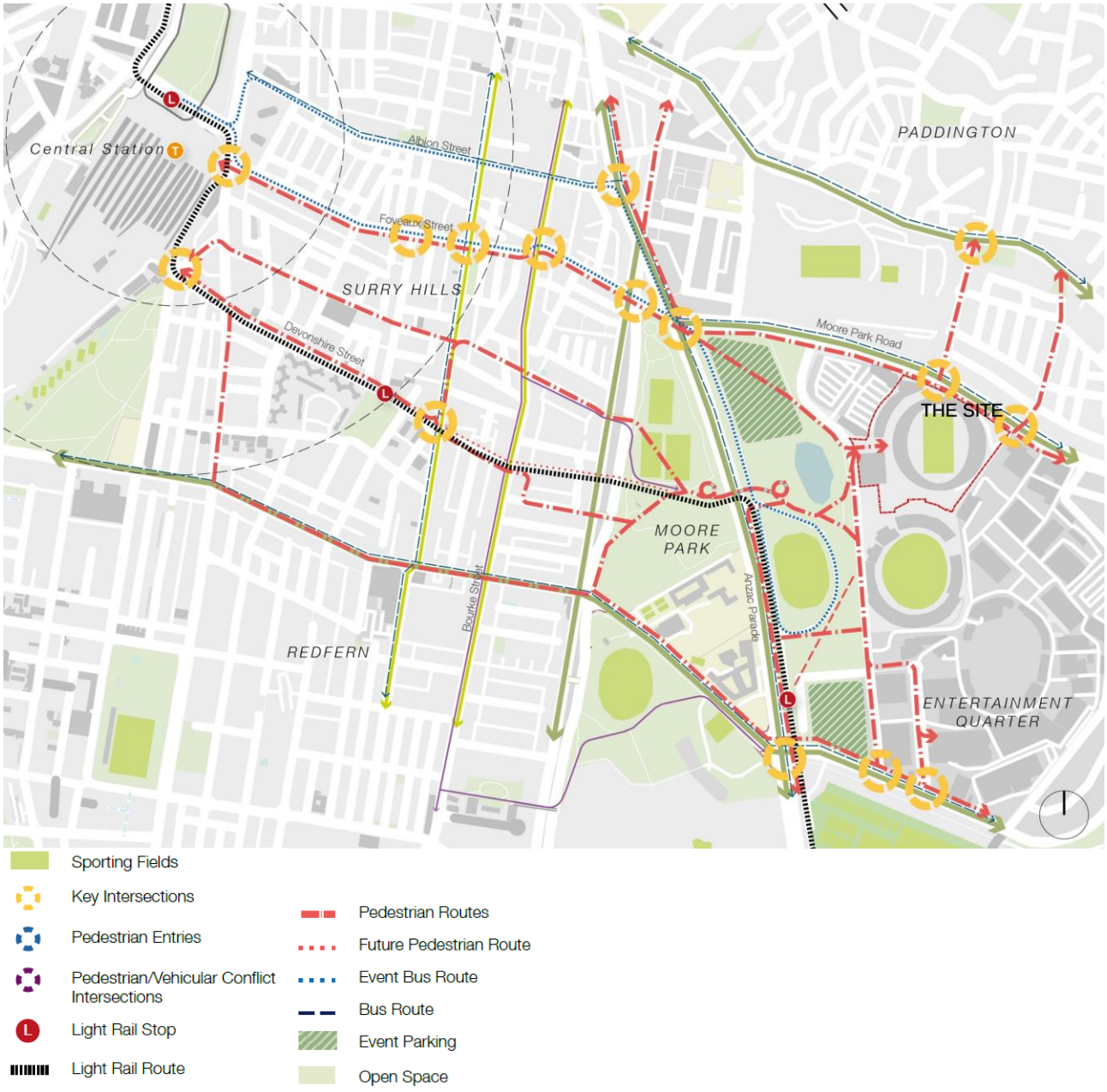


Figure 17 Access and movement diagram

Source: SJB

3.2.3 Vegetation

The site benefits from a parkland setting created by Moore Park and Centennial Park, but does not itself encompass significant areas of landscaping. Existing trees on the site have been planted in rows along road reserves or surrounding car parking areas and pedestrian circulation areas, or in clusters at key site entries or clearings.

The location and health of existing vegetation on the site is detailed in the Arboricultural Assessment prepared by TreeIQ at **Appendix F**, and summarised as follows:

- There are lines of existing trees surrounding MP1 that create a landscaped curtilage to Moore Park Road and Driver Avenue. TreeIQ observed 71 trees in this area which are a mix of native species and are all mature, with the majority of trees in good condition.
- There is also a cluster of trees within the forecourt area adjacent to the Driver Avenue forecourt. These trees are a mix of native and exotic species that have been planted in garden beds or paved areas, and are also identified as being in good condition.
- A cluster of 19 trees are located in the southernmost point of the site, just north of the Cricket NSW Building. These trees are a mix of native and exotic species and have been planted in garden beds and in lawn areas. Of these trees, 8 trees show signs of infestation or disease.
- A cluster of 10 trees are located near the intersection of Moore Park Road and Regent Street. These trees comprise a mix of native and exotic species, and are identified as being in good health bar one that shows signs of decay and is unlikely to improve in health.

In addition to the above, a single Moreton Bay Fig (Tree 125) is located within the site close to Moore Park Road and near the Sheridan Building and Oatley Road intersection (see **Figure 18**). It is classified as an outstanding tree and is considered to have individual significance as an important component of the precinct. The tree is listed on the City of Sydney Register of Significant Trees, and as such will need to be retained and protected when undertaking any works on the site.

Figure 18 Moreton Bay Fig tree fronting Moore Park Road, to be protected (Tree 125)

3.2.4 Heritage Context

SFS is not identified as a statutory heritage item[2], however, the site is located within the Sydney Cricket Ground Conservation Area and is located in close proximity to a number of heritage items of varying levels of significance. Of particular note are the following:

- **Busby's Bore** – this is a State Heritage Item (00568) and is listed on Sydney Water's Section 170 Heritage and Conservation Register. It is significant for being Sydney's sole fresh water source in the early 1800's, and afterwards was used to flush creeks and ponds in the Botanic Gardens. It comprises of a tunnel that is cut into the sandstone bedrock and is some 3.6km long. It runs beneath the northern portion of the site, along Moore Park Road, and also branches to beneath the MP1 car park.
- **Sydney Cricket Ground Members Stand** – this is a State Heritage Item (SHR 00353) and is located immediately to the south of the site. It is the surviving feature of the original cricket grounds, and was constructed in the 1900's. It is subject to a permanent heritage conservation order.
- **Moore Park Heritage Conservation Area** – the area comprises Moore Park and Sydney Boys and Sydney Girls High School, and is of local significance for being part of the Sydney Common that was reserved by Governor Macquarie in 1811 and for having evolved over time from being essentially grazing land to a public park with passive and active recreation. Moore Park, Centennial Park and Queens Park are also heritage items of State significance (01384).
- **Sydney Cricket Ground Heritage Conservation Area** – the Sydney Cricket Ground is of local significance for being part of the Sydney Common and for being an original link to the game of cricket that is a cornerstone of Sydney's sporting history. This conservation area includes the SFS.
- **Victoria Barracks** – this is a Commonwealth Heritage Item that is located to the north west of the site and is significant for being one of the few surviving sites connected with the British military presence in Australia. It is also the focus of a heritage conservation area under the Sydney LEP.

The site is also influenced by a number of surrounding heritage items and conservation areas, which are detailed in **Table 2** and in **Figure 19**.

Table 2 Key heritage items

Heritage Item	Commonwealth Heritage List	State Heritage Register	Sydney LEP Listing
Moore Park Conservation Area	-	-	C36
Moore Park Showground	-	-	(SEPP 47)
Sydney Cricket Ground Conservation Area	-	-	C37
Busby's Bore | Centennial Park to College Street	-	00568 (No.5045164)	I1
Sydney Cricket Ground Members Stand and Lady Members Stand | Driver Avenue	-	00353 (No.5045563)	-
Centennial, Moore, and Queens Park	-	01384 (No.5045397)	-
Victoria Barracks | 75 Oxford Street	Listed (Victoria Barracks Precinct)	-	I1086
Paddington South Conservation Area	-	-	C48
Victoria Barracks Conservation Area	-	-	C49
Terrace House 'Verulam' | 284 Moore Park Road	-	-	I1078
Olympic Hotel | 308 Moore Park Road	-	-	I1079
Sydney Boys High School | 556-560 Cleveland Street	-	-	I958
Sydney Girls High School | 556-560 Cleveland Street	-	-	I959

[2] SFS was listed on the National Trust Register in 2015. Listing by the National Trust has no statutory effect, however, it provides some indication of value placed on this building by parts of the community.

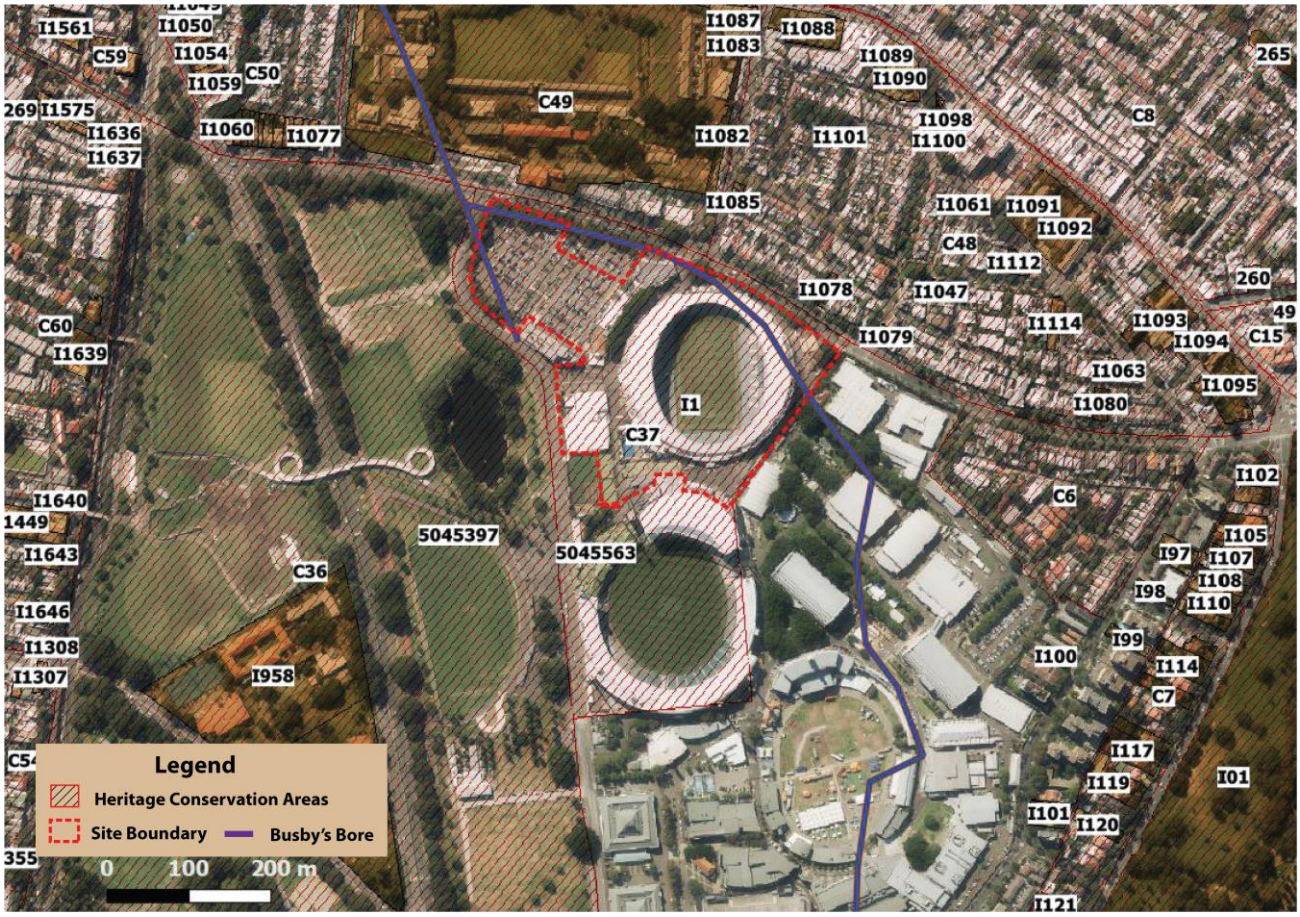


Figure 19 Heritage items in vicinity of the site

Source: Curio Projects

3.2.5 Soil, Geotechnical and Groundwater Conditions

Soil and Geotechnical Conditions

The Sydney 1:100,000 scale geological series sheet indicates the site is underlain by Holocene aged marine sands, with Triassic aged Hawkesbury Sandstone to the north and east of the site. The Holocene sands are typically underlain by Pleistocene sand deposits (commonly known as 'Botany Sands') to a depth of 10 to 30 m below ground, over the Pleistocene aged clay beds units. The Great Sydney Dyke that runs between Waverly and Rozelle has not been recorded within the site, but is located in proximity of the site. The site's geotechnical conditions are detailed further at **Appendix T**.

Groundwater

Groundwater flows into the site from the south-west, broadly following the topography and surface drainages features and ponds across the basin. It has been observed at depths of 32m AHD at the southern end of the site towards Anzac Parade, which increases in depth towards the north of the site at 36m AHD. This equates to depths below existing ground level within the site of approximately 7 to 11 metres. The groundwater is associated with two aquifers beneath the site, being the Botany Sands Aquifer and the Hawksbury Sandstone Aquifer (see **Figure 20** below), with the site primarily interacting with the Botany Sands Aquifer. This aquifer is a considerable groundwater resource that runs between Paddington and Botany Bay and is locally recharged by rainfall infiltration in the large surrounding open space areas of Centennial and Moore Park.

It is noted that SCSGT is licensed to use 20 ML per year of bore water extracted from the Botany Sands aquifer for playing field irrigation across the SFS and SCG.

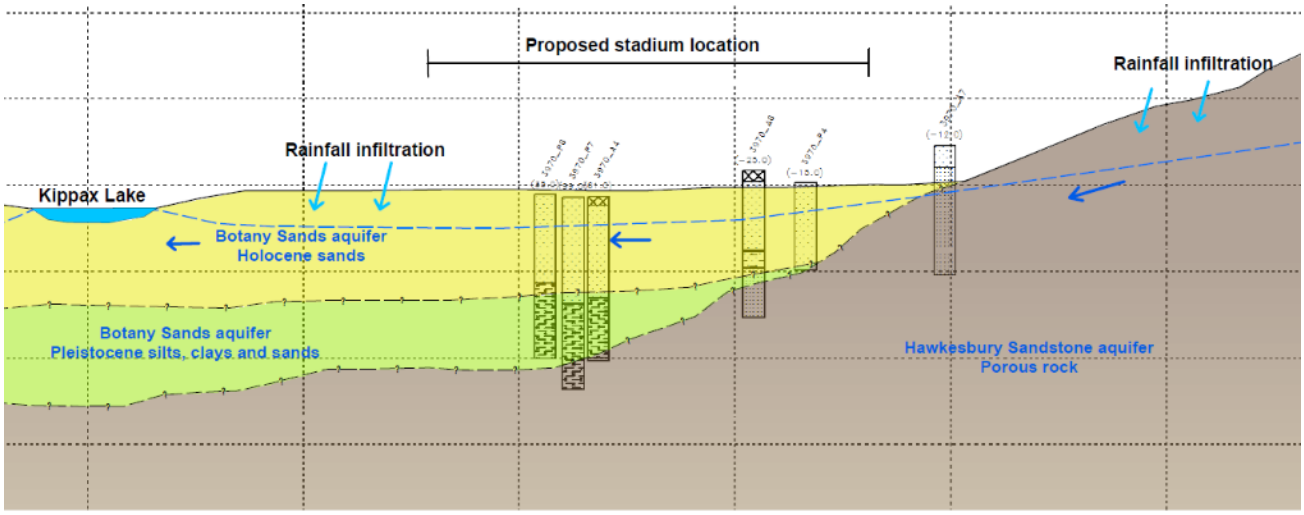


Figure 20 Illustration of aquifers and ground water applying to the stadium

Source: Arup

Acidic and Saline Soils

The NSW Office of Environment and Heritage Acid Sulfate Soil Risk Map does not identify the site as being at risk of acid sulfate soils, or for these soils as being in vicinity of the site. The site is also not mapped as being at risk of soil salinity, and the data acquired from surrounding bores demonstrates that salinity levels are indicative of 'fresh' water quality.

3.2.6 Flooding

Arup have prepared a Stormwater and Flooding Report (**Appendix P**), which confirms that the site is located within the Centennial Park catchment area and is subject to flooding, as a function of its position on an overland flow path for surface water flowing from Moore Park Road to the north and Driver Avenue to the South West. The water typically drains to Kippax Lake and a low point in Driver Avenue adjacent to the SCG, and eventually to Centennial Park. Historical incidences of flooding have been recorded within the SFS and adjoining SCG sites, and modelling indicates that localised flooding occurs in each instance from a 2-year Average Recurrence Interval (ARI) up to a 100-year ARI event with significantly deeper and more widespread flooding occurring during the Probable Maximum Flooding (PMF) event.

3.2.7 Contamination

Douglas and Partners (**Appendix S**) have identified that there is the potential for the site to have been contaminated by previous filling works and the demolition of buildings on the site prior to the construction of the stadium in the 1980s. It is possible that when the stadium was constructed, existing soils that contained concentrations of contaminants may have been mixed with natural soils to allow for the most efficient disposal of materials. This is consistent with soil samples tested during the development of nearby buildings including the Sheridan Building, ARDC and Bradman-Noble Stand. Further detailed investigation will be undertaken as part of the Stage 2 detailed design and planning process. The site is not identified as being significantly contaminated under the *Contaminated Lands Management Act 1997*.

3.2.8 Infrastructure and Services

There are existing connections to the site, including the ancillary buildings surrounding SFS, and/or infrastructure is available in the surrounding area for electricity, water, sewer, stormwater, gas and communications services. The details of the existing connections and infrastructure and services surrounding the site are included in the Infrastructure Management Plan at **Appendix U**.

3.3 Surrounding Development

The site is located in an interface area between the larger entertainment and recreation precinct shared with Centennial and Moore Parks, Fox Studios, and the Entertainment Quarter, and the eastern edge of the city that accommodates a mix of residential, commercial and educational uses. It is uniquely characterised by the predominant parkland setting to the south and west, sporting and entertainment uses to the south and east, and surrounding urban and lively mixed uses areas. The relationship between the redeveloped stadium and its surrounds will not change, as it will be constructed on the site of the existing stadium and feature capacities analogous to the existing stadium. **Figure 21** below identifies key major land uses within the locality.

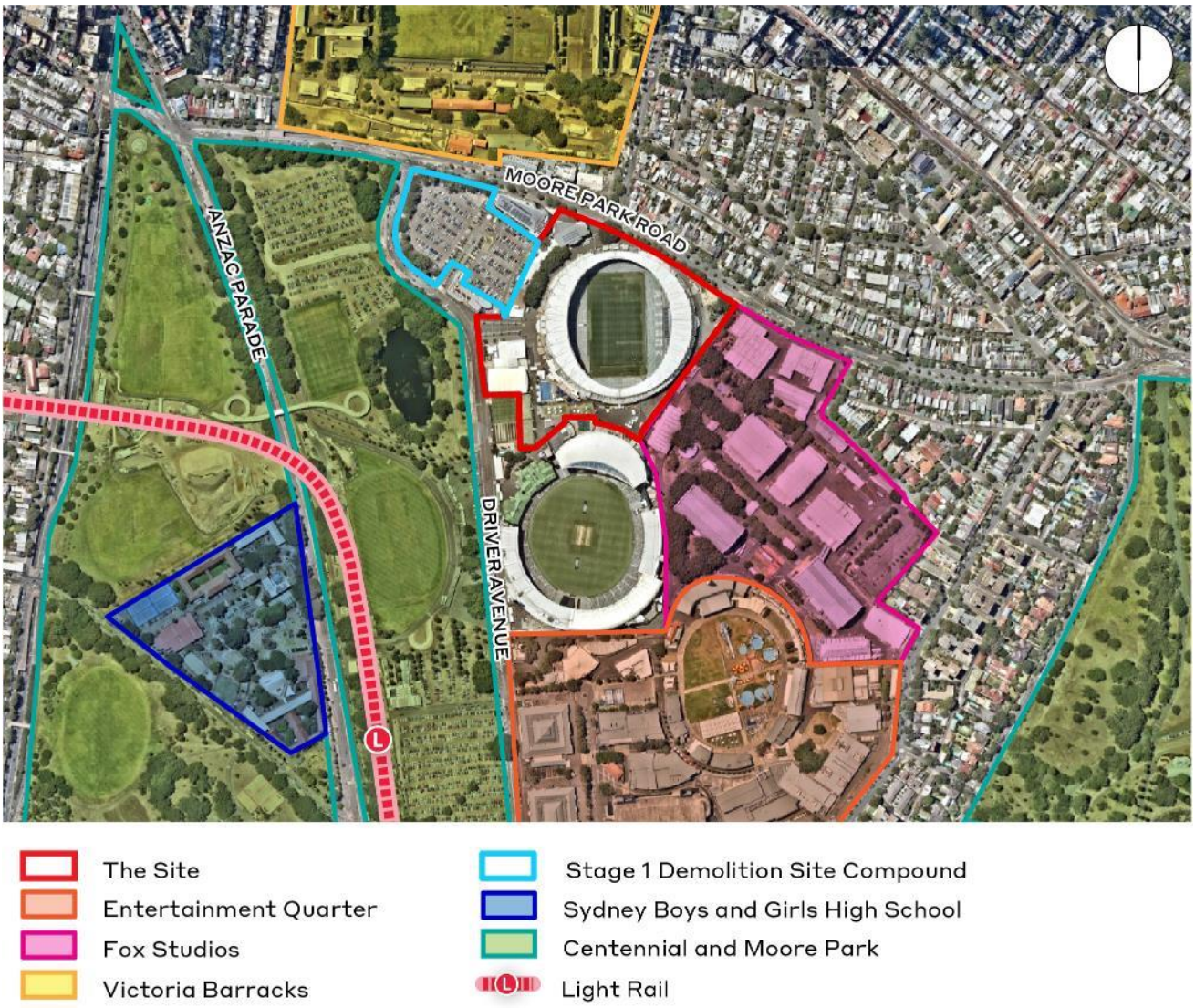


Figure 21 Site context map

Source: Ethos Urban

Sydney Cricket Ground – to the South

The Sydney Cricket Ground (SCG) borders the site to the south and is a significant representation of sporting and cricket in Sydney. The complex comprises mix of stands, buildings, and paved and landscaped spaces, recognising that this space has been continually used and changed since the first matches were played in the 1850's. The key features include the heritage-listed Members and Ladies Members Stand (refer to **Section 3.2.4** above) and the Walk of Honour which extends from the SFS entry through to the members gates.

The stadium itself seats 48,000 spectators around an oval field that is used for cricket, AFL, rugby league and rugby union matches, recognising that this field was the major rugby venue prior to the opening of the SFS, as well as live music and entertainment. Recent works have occurred on site to redevelop the Noble and Bradman Stand and the

Messenger Stand, which includes one of the largest video screens in Australia. These works have increased the capacity of the stadium as well as various other improvements.

Outdoor spaces available onsite are predominantly for use by members on event days and are unavailable to other ticket holders. The stadium offers no outward facing active uses, or soft landscaping to Driver Avenue, and is closed from public access outside of events, except for those with membership to the Stadium Club.

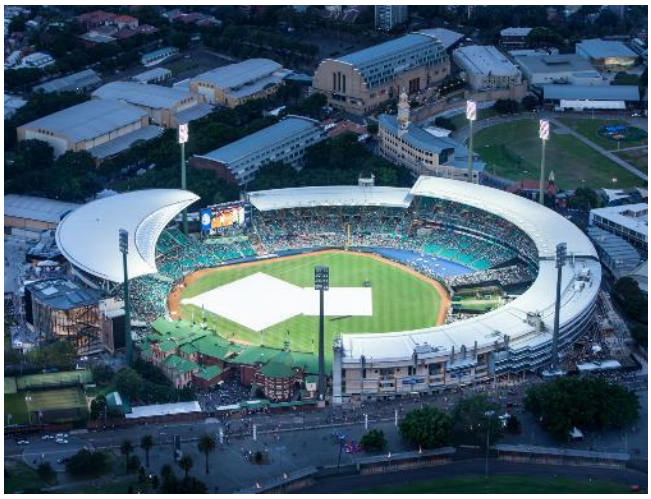


Figure 22 Sydney Cricket Ground

Source: COX Architecture

Figure 23 SCG Members Stand and Lady Members Stand

Source: NSW Office of Environment and Heritage

Entertainment Quarter – to the South

Further to the south and east of the Sydney Cricket Ground is the Entertainment Quarter. It incorporates a range of both contemporary and heritage buildings that are bordered by high brick walls, isolating the Quarter in areas from its surrounds. The Quarter includes a range of venue such as the Hordern Pavilion, Royal Hall of Industries, Show Ring and Comedy Store that are important spaces for hosting events in Sydney. The Entertainment Quarter also features one of the only permeant car parks in the area, being a multi-storey car park accessed off Errol Flynn Boulevard and Park Road with capacity for some 2,000 cars.

Figure 24 Entertainment Quarter as viewed from Errol Flynn Boulevard

Figure 25 The Royal Hall of Industries building within the Entertainment Quarter

Fox Studios – to the East

Fox Studios border SFS to the east and is separated from SFS by a brick wall that prevents any movement between the sites. Fox Studios have occupied the site since 1998 and feature a collection of buildings that house several sound stages, office space, and workshop and construction spaces that make up one of only three production and filming studios in Australia (the others being located in Melbourne). Primary vehicular access for the studios is from Driver Avenue to the south of the SCG. The studios are adjacent to the Entertainment Quarter (discussed further above) and are managed by the Centennial and Moore Park Trust.

Figure 26 Brick wall demarcating the boundary with Fox Studios (left) and Paddington Lane

Paddington – to the North

To the north of the site is the suburb of Paddington. This suburb comprises largely residential uses with commercial, food and beverage venues concentrated around Oxford Street and Moore Park Road. Development is characterised by predominantly medium density terraces that feature dual frontages to the street and laneways, and contribute to an overall fine grain built form and street structure. The area is also characterised by landscaped streets and a significant topography that rises up towards the stadium, creating local views of the stadium roofline.

Within this area, to the north west of the site between Oxford Street and Moore Park Road, is Victoria Barracks. It comprises a series of sandstone colonial era buildings surrounded by open space and bordered by sandstone walls. The Barracks do not present active frontages or provide pedestrian connections, being an active military base, which effectively creates a barrier to pedestrian and retail access from Oxford Street down to Moore Park and the stadia.

An existing child care centre (Kira Child Care Centre) is located at the corner of Moore Park Road and Oatley Road directly to the north of the site. The centre is surrounded by a tall brick wall, and includes a driveway from Oatley Road which provides access to internal parking and drop-off areas.

Figure 27 Development fronting Moore Park Road

Figure 28 Wall surrounding the Victoria Barracks, looking south on Oatley Road

Moore Park – to the West

To the west of the site is Moore Park, which is generally bounded by Driver Avenue, Anzac Parade, South Dowling Street, and Cleveland Street. The park comprises a mix of active and passive recreation opportunities that are controlled by the Centennial and Moore Park Trust. Moore Park is approximately 115 hectares in area and includes the ES Marks Athletics Field, an 18-hole Group One Championship Public Golf Course and Driving Range, tennis courts and netball courts. It has traditionally accommodated more formalised active forms of recreation than Centennial Park further to the south of the site.

Figure 29 Pedestrian footpath toward Albert Tibby Cotter Bridge

Figure 30 Kippax Lake in Moore Park, looking east towards the SFS

Surry Hills – to the West

To the west of Moore Park, across South Dowling Street and the Eastern Distributor, is the suburb of Surry Hills. This suburb is similar in character to Paddington, comprising large areas of medium density terraces and a fine grain built form and street structure. The suburb is mixed in land uses, incorporating a range of office and business premises, restaurants, bars and cafes, and is mixed in the scale of development, with density typically increasing closer to Central Station and the CBD. The suburb is bordered by Oxford Street to the north, Moore Park to the east, Cleveland Street to the south, and Central Station and the railway to the west.

4.0 Consultation

Infrastructure NSW engaged Ethos Urban to provide communication and stakeholder engagement services for the project. The consultation program included engagement and collaboration with the local community, neighbours, key stakeholders, and government agencies to present the proposal and gather feedback.

The consultation activities were designed to address the SEARs, ensure that all stakeholders were informed about the proposal and had the opportunity to provide feedback prior to the submission of the Stage 1 Concept DA. The feedback received during the initial consultation process has been considered during the during the preparation of the Stage 1 Concept DA.

Figure 31 below provides a snapshot of the pre-lodgement activities.

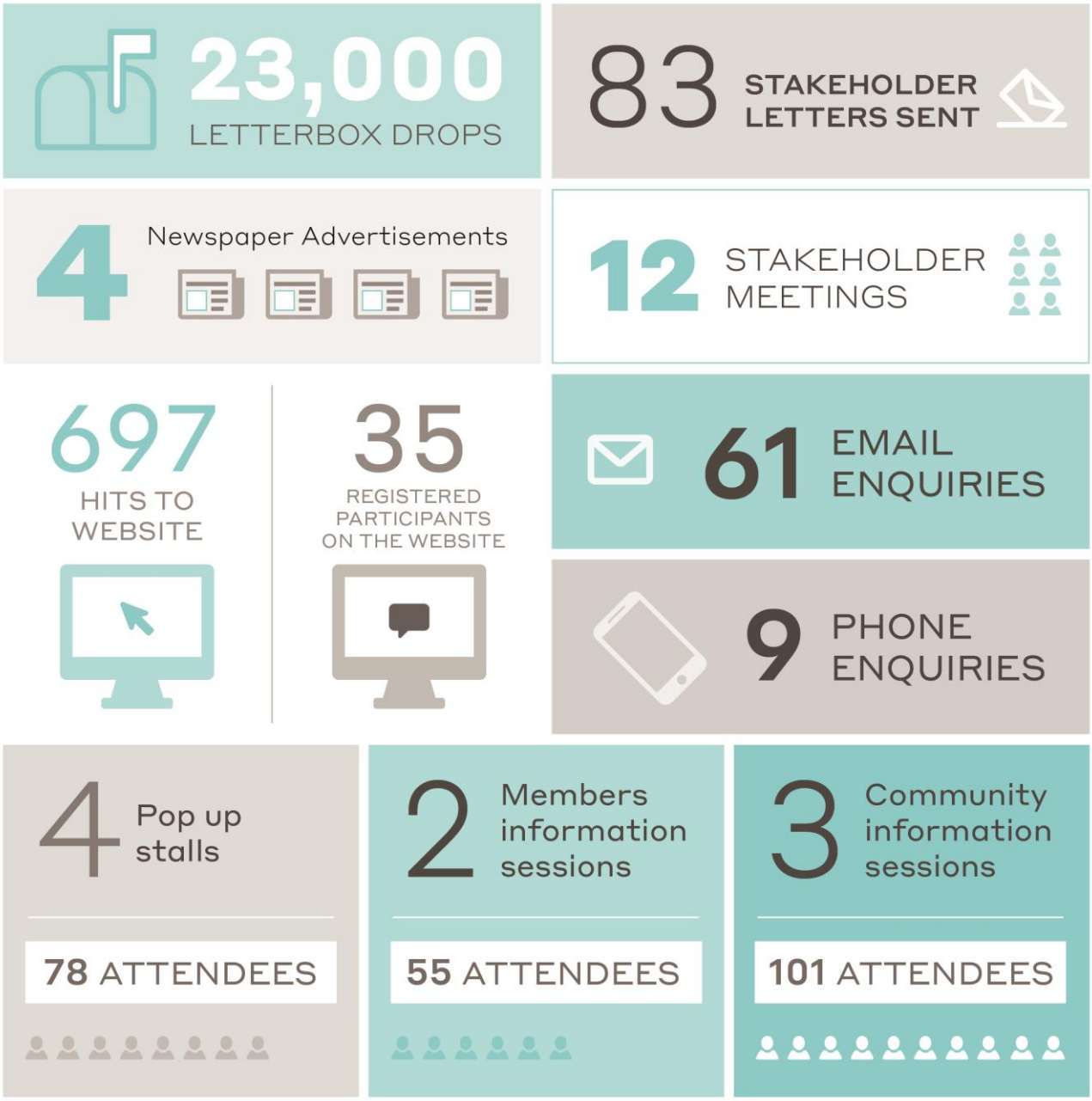


Figure 31 Snapshot of engagement activities and participation

Source: Ethos Urban

Most of the community feedback received to date focused on:

- Improving transport options to reduce traffic in the area;
- Removing parking on Moore Park grounds;
- Improving connectivity between Paddington and Anzac Parade; and
- Concern about the loss of members facilities.

Throughout this process, Infrastructure NSW has kept all stakeholders, including the local community, government authorities, Centennial and Moore Park Trust and the Sydney Cricket Ground Trust up to date with the development of this proposal, prior to lodgement of the Stage 1 Concept DA. In particular, the Infrastructure NSW has consulted with all agencies referred to in the SEARs, being:

- City of Sydney Council;
- Office of Environment and Heritage;
- Government Architect NSW
- Sydney Airport Corporation Limited and Civil Aviation Safety Authority;
- Transport for NSW (TfNSW);
- Sydney Coordination Office;
- Environment Protection Authority;
- Sydney Water;
- Department of Primary Industries; and
- Roads and Maritime Services.

Infrastructure NSW will continue to engage with all stakeholders and the community during the exhibition of the Stage 1 Concept DA as well as during future stages of the planning process.

A Consultation Outcomes Report has been prepared by Ethos Urban (**Appendix G**) detailing these activities, key issues discussed with communities and stakeholders in relation to the proposal and the feedback received. The report will be updated to include feedback received from consultation activities held during the public exhibition period after lodgement of the Stage 1 Concept DA.

5.0 Description of the Development

This application comprises a State Significant Development Concept Development Application for the redevelopment of the Sydney Football Stadium at 40-44 Driver Avenue, Moore Park, and sets out detailed proposals for demolition of the existing stadium and site preparation works (Stage 1).

Pursuant to clause 4.22 of the EP&A Act, this application sets out the Concept Proposal for the redevelopment of the Sydney Football Stadium, including:

- Land use.
- Maximum building envelope.
- Maximum stadium capacity of 45,000 seats (55,000 patrons in concert mode) and 1,500 staff.
- Urban Design Guidelines and Design Excellence Strategy to guide the detailed design.
- General functional parameters for the design and operation of the new stadium, including:
  - Range of general admission seating, members areas, premium box/terrace, function/lounge and corporate suite options;
  - Administration offices;
  - New roof with 100% drip-line coverage of all permanent seating;
  - Flood lighting, stadium video screens and other ancillary fittings;
  - Food and beverage offerings;
  - Facilities for team, media, administration and amenity such as changing rooms, media rooms and stadium; and
  - Provision for ancillary uses within the stadium and surrounds.
- Principles and strategies for transport and access arrangements.
- Indicative staging of the development.

Furthermore, and pursuant to clause 4.22(2) of the EP&A Act, this application seeks development consent for the carrying out of the detailed Stage 1 works, comprising:

- Demolition of the existing Sydney Football Stadium and ancillary structures, including the existing Sheridan, Roosters, Waratahs and Cricket NSW buildings down to existing slab level.
- Site and construction management, including use of the existing MP1 car park for construction staging, management and waste processing, and provisions for temporary pedestrian and vehicular access management.
- Protection and retention of Tree 125 (Moreton Bay Fig adjacent to Moore Park Road) and Tree 231-238 cluster (Hills Weeping Fig and others near Paddington Lane) and existing street trees, and removal of all other vegetation within the proposed future building footprint.

The following sections set out the details of the Concept Proposal (**Section 5.1**) and Stage 1 Demolitions works (**Section 5.2**) and should be read in conjunction with the supporting documentation accompanying this EIS, particularly the Urban Design Guidelines prepared by SJB Urban Design (**Appendix C**) and Construction (Demolition) Management Plan prepared by Aver Consulting (**Appendix E**).

5.1 Concept Proposal

The Concept Proposal for the new Sydney Football Stadium seeks to establish the broad principles for the construction of a new stadium, including principles for detailed design, planning and operation. Specifically, Concept Approval is sought for the following:

- Maximum building envelope;
- Maximum stadium capacity of 45,000 seats (55,000 patrons in concert mode) and 1,500 staff.
- Urban Design Guidelines which will establish the principles for the detailed design of the new stadium, including the building architecture and public domain and landscape architecture;
- Design Excellence Strategy for the detailed design of the new stadium (Stage 2);
- Use of the site as a 'recreation facility (major)' with ancillary uses; and
- Outline of the staging of the development.

A maximum 'loose fit' building envelope has been established which sets out the maximum physical size of the future stadium, whilst providing flexibility to allow for a range of design solutions in the delivery of the new stadium (**Appendix C**). The Urban Design Guidelines prepared by SJB Urban Design (**Appendix C**) provide the overarching framework for the design and functionality of the stadium within the site and landscape, whilst the Design Excellence Strategy (**Appendix D**) sets out the process to ensure that the future stadium design delivers a high-quality development. The Concept Proposal also sets out broad principles for stadium operations and land uses, and includes details of the intended project staging. Further details are set out in the following sections.

5.1.1 Building Envelope

This application seeks consent for a maximum building envelope which is defined via horizontal and vertical planes. The building envelope sets the maximum parameters within which the future detailed stadium design will be required to be contained within. The footprint and sectional representations of the maximum building envelope are reproduced in **Figures 32** and **33**, and detailed further at **Appendix C**. The maximum building envelope sets a maximum building height of RL 85.00 m AHD which applies across the horizontal maximum footprint.

The building envelope has been informed by, and developed in conjunction with, the development of a reference design prepared by Cox Architecture (the architect firm responsible for the existing SFS) that incorporates all of the functional and operational requirements of a Tier 1 stadium with a seated capacity of 45,000 persons (55,000 for concerts).

The building envelope arising from this reference design process has been enlarged to provide a 'loose-fit' maximum building envelope that would accommodate not only the reference design, but also other possible architectural and structural design responses to the functional brief for the stadium. This approach ensures that the maximum building envelope can accommodate a range of design options to be explored through the competitive design excellence and detailed design processes. This approach establishes a maximum building envelope for which approval is sought at the Concept Proposal stage and which forms the 'worst-case' basis for the environmental assessment in this EIS and supporting documentation. The final detailed building envelope, including compliance with the maximum building envelope, will be detailed further in the Stage 2 Development Application.

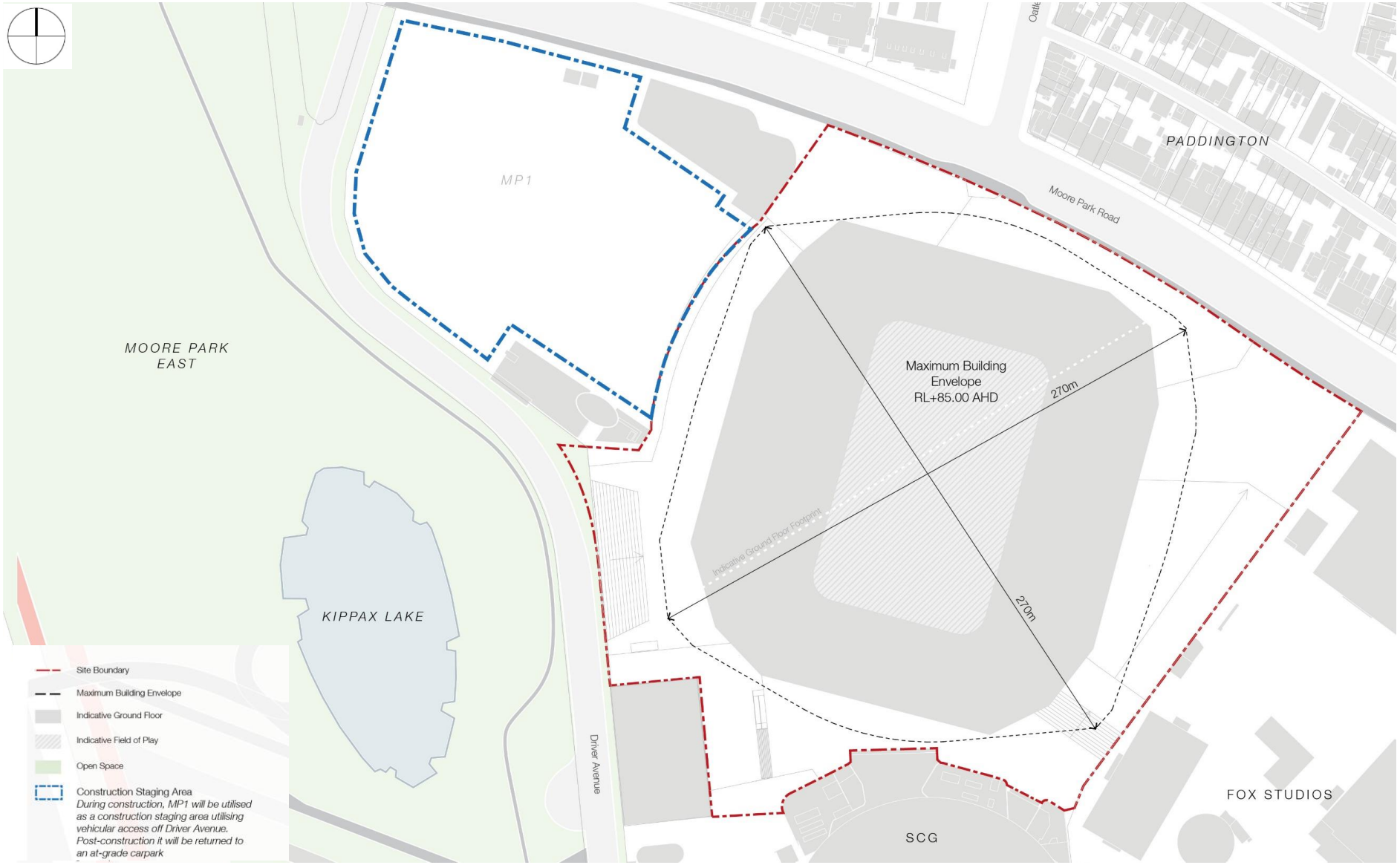


Figure 32 Maximum proposed building envelope – site plan
Source: SJB

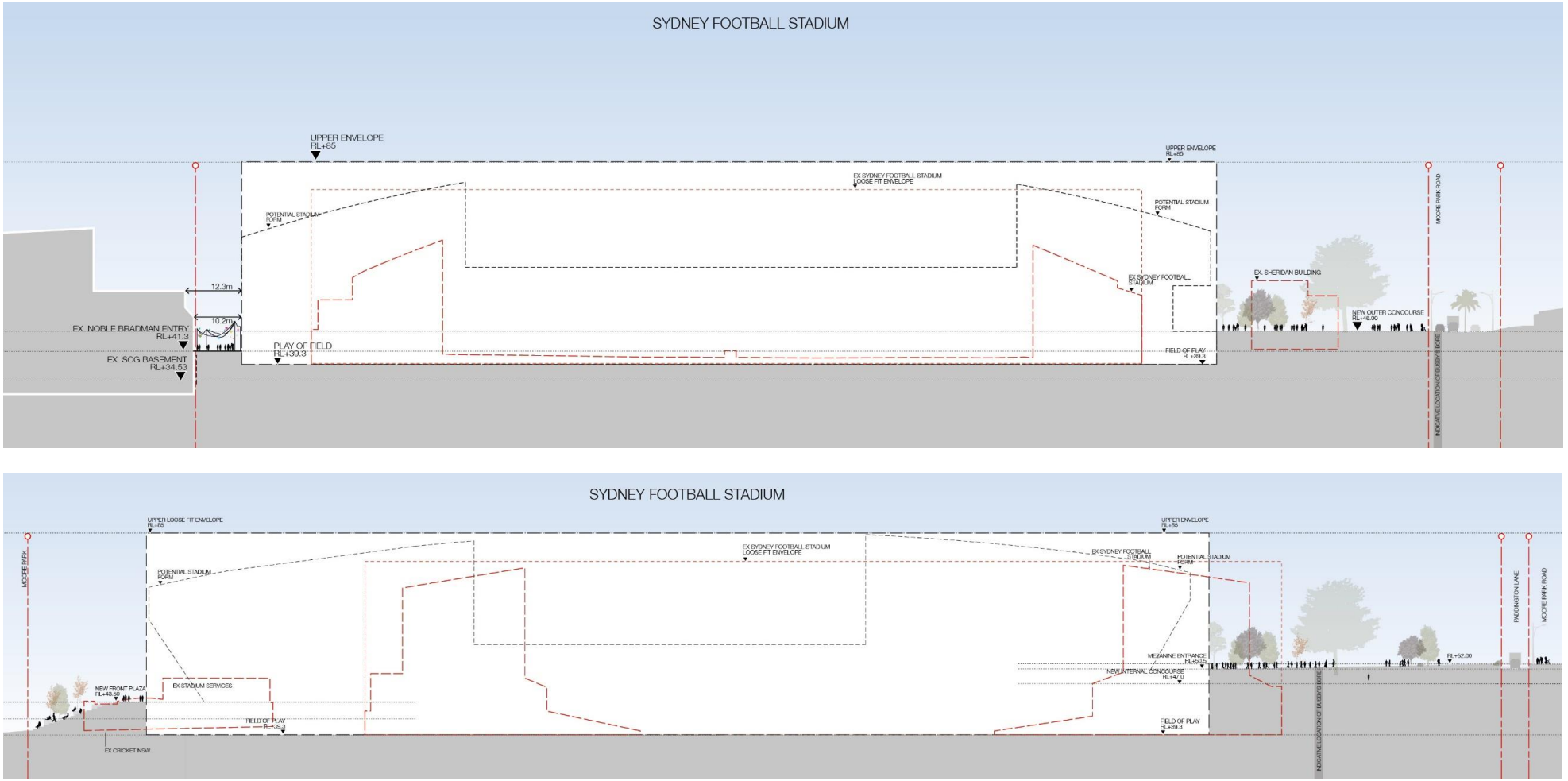


Figure 33 Maximum proposed building envelope – north-south section (upper) and east-west section (lower)

Source: SJB Urban Design Guidelines (Appendix C)

5.1.2 Stadium Capacity

The Concept Proposal seeks approval for a maximum stadium capacity of 45,000 seats (55,000 patrons in concert mode). Up to 1,500 staff would also be present at the stadium during a peak event, however, this is subject to detailed design and would vary based upon the final stadium design (number of stadium entrance points, nature of catering facilities etc.) and operational profile and will be detailed further in the Stage 2 Development Application.

Further detail regarding the operational profile is outlined in **Section 5.1.6**.

5.1.3 Urban Design Guidelines

Urban Design Guidelines have been prepared by SJB Urban Design (**Appendix C**) in order to set out (at Section 8 of that document) the guidelines for the future detailed design of the new stadium and public realm. The document set out principles and more detailed guidelines for the following aspects of design:

- Key moves and design intent;
- Access and movement;
- Building height and massing
- Public realm and open space;
- Security and safety;
- Activation;
- Wayfinding, signage and interpretation;
- Architectural expression;
- Sustainability; and
- Cultural and heritage significance.

The Guidelines are supplemented by a series of strategies and principles which provide further guidance and context to the design intent for the future stadium. The following sections summarise some of the key aspects of the Guidelines.

Preparation of the Guidelines has been informed by an appreciation of the site and surrounds, community and stakeholder feedback received during the pre-lodgement consultation, an understanding of the functional requirements of the future stadium based on the Cox Architecture reference design, and benchmarking of aspects of the stadium experience against best-practice examples of stadia in Australian and internationally. This approach has facilitated the development of principles for the future built form and public realm which will ensure that the stadium provides for an international-standard facility which is grounded in an understanding of the constraints and opportunities of the local place.

The following sections set out the indicative design outcomes that are intended to be achieved within the urban design framework set out in the Guidelines

Stadium Design

The new stadium will deliver a high-quality user and fan experience, commensurate with the intended role of the new stadium as one of only three Tier 1 stadia within NSW. The stadium will have up to 45,000 seats configured around a new rectangular playing pitch, with 100% drip-line roof coverage for all seats and a 360-degree pedestrian circulation zone within the stadium structure. A range of seating types will be provided, including general admission, active supporter zones, members seating and corporate seating to ensure that the stadium meets the requirements of current and future patrons. In concert mode, additional standing capacity for 10,000 patrons would be provided in the field of play.

A 360-degree oculus will be provided for internal patron circulation within the stadium structure, maximising accessibility and distribution of crowds and reducing potential pinch-points. Lifts and vertical circulation will be provided to meet modern design and accessibility standards to allow for equitable access throughout the stadium and to provide access to a range of seating types.

Food and beverage facilities providing a full range of offerings will be integrated into the stadium, with purpose-built spaces providing the capacity to prepare and serve the intended maximum occupancy of the stadium at a reasonable level of service. Capacity to accommodate dining and function requirements for corporate and premium suites will also be incorporated.

Flood lighting will be integrated into the roof structure, and the new stadium will incorporate purpose-built and adaptable media and broadcasting facilities to meet the requirements of national and international-standard sporting events. Four change-rooms will be provided, providing increased flexibility to host double-header matches. Dedicated coaching/administration and stadium safety facilities will be provided.

The detailed design will be developed to respond to the functional requirements of a Tier 1 stadium, whilst delivering design excellence through a competitive design approach as outlined in **Section 5.1.4**. The detailed stadium design will be detailed further in, and form part of, the Stage 2 Development Application.

Pedestrian Access and Movement

A key design principle for the new stadium is to enhance the pedestrian accessibility within and through the site. At present, there is minimal public access to the site with the secured and fenced area extending to the site boundary at Moore Park Road. The stadium acts as a barrier to pedestrian movement between Paddington and Moore Park, leading pedestrians presently to navigate poor quality and illegible paths of travel through the MP1 car park.

As illustrated in **Figures 34** and **35**, the stadium design recognises the key pedestrian movement routes and origins/destinations aligned with the event-day experience. Walking from Central Station, the new Moore Park Light Rail Station, as well as local areas in Surry Hills and Paddington, will be reflected in the upgraded Driver Avenue forecourt and the provision of new access points along Moore Park Road. The new light rail route along Devonshire Street, along with the associated new pedestrian crossing of the Eastern Distributor, will create the opportunity for pedestrians to more easily access the stadium by foot from the west compared to existing arrangements. Infrastructure NSW and the SCSGT will liaise with the City of Sydney Council and Transport for NSW throughout the detailed design and operational stages to ensure that pedestrian access is coordinated and communicated to patrons.

At a precinct level, access to and around the stadium will operate under a number of different event overlays to reflect operational and safety requirements (**Figure 36**). During non-event periods, public access will be available throughout the Moore Park Road frontage and through to Driver Avenue via the north-western edge of the stadium with the south-eastern area being inaccessible to accommodate the operational bump-in/bump-out of stadium activities. This public access will be maintained during SFS-only events (except for special events) and SFS/SCG double-headers, with the potential for increased public access to the entire external circulation area of the SFS during smaller events when the SCG is not in operation. For certain special events requiring use of the forecourt and stadium exterior (e.g. Rugby Sevens tournament), the site may be secured out to the site boundary to allow for additional patron spaces and activation.

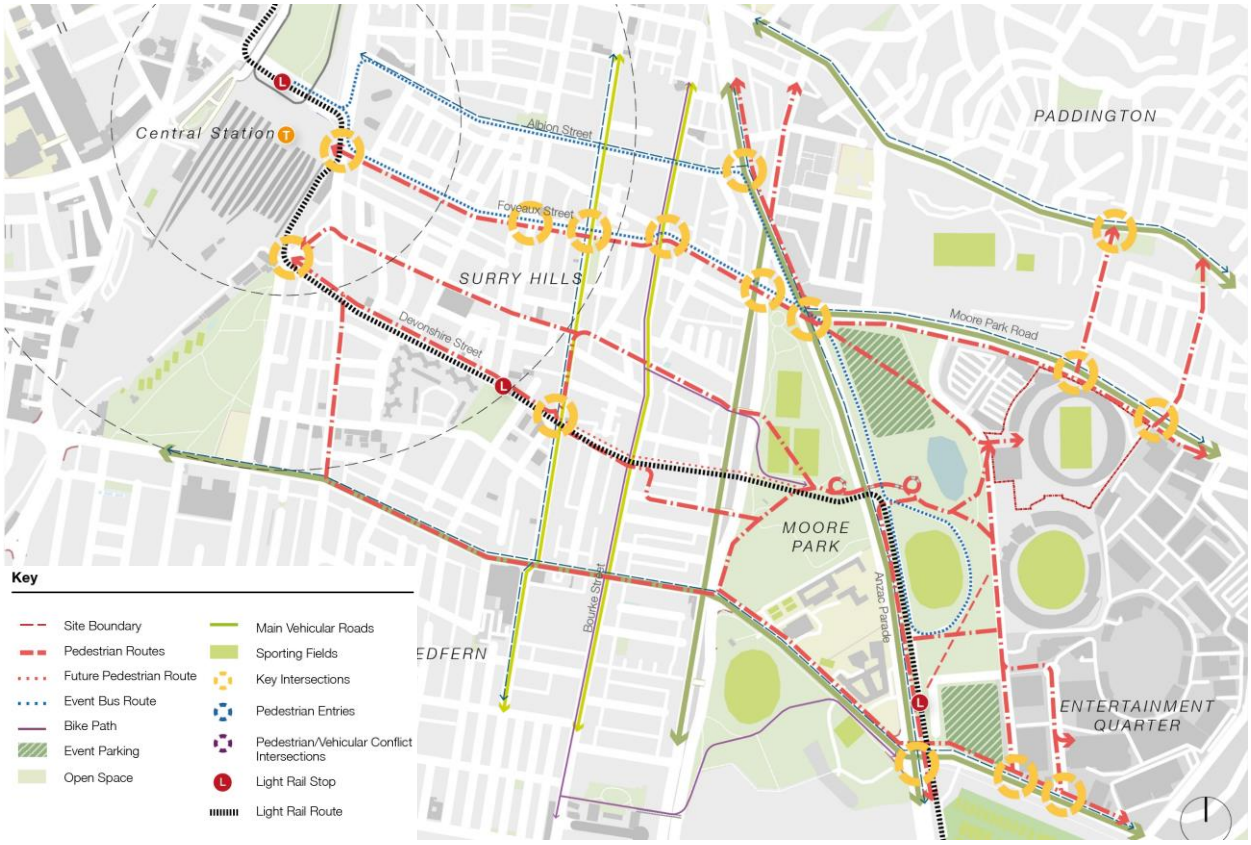


Figure 34 Principles for stadium access - locality

Source: SJB

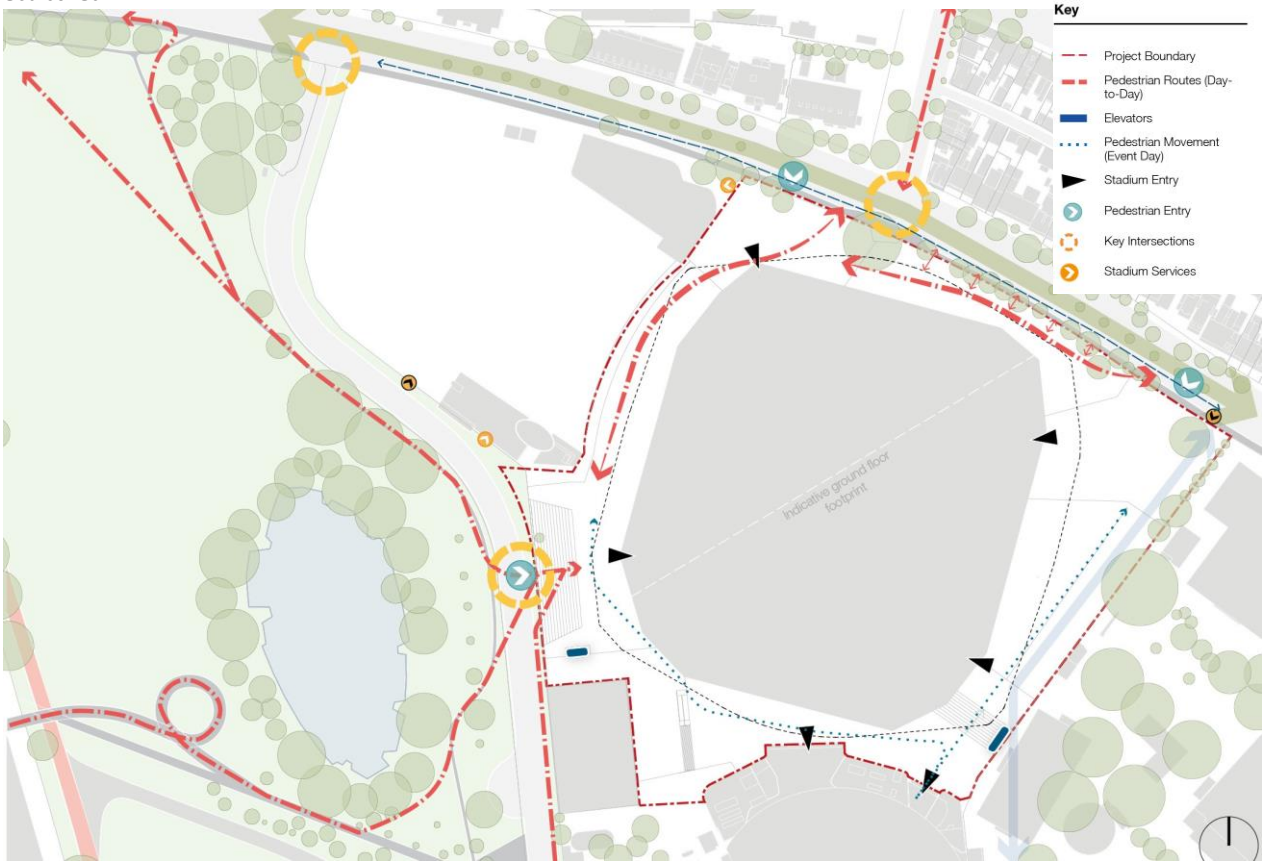


Figure 35 Principles for stadium pedestrian access - precinct

Source: SJB

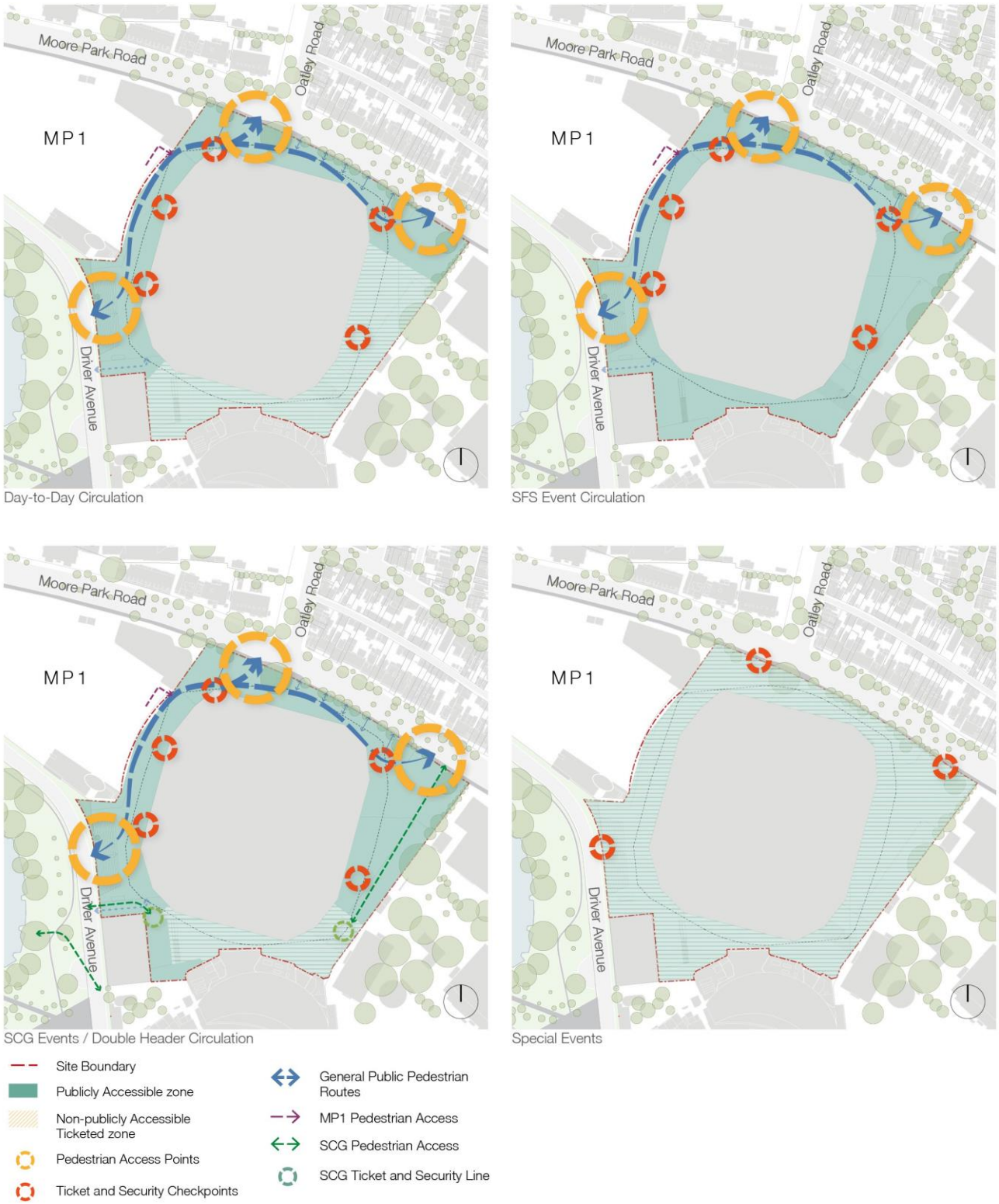


Figure 36 Principles for site access and event management

Source: SJB

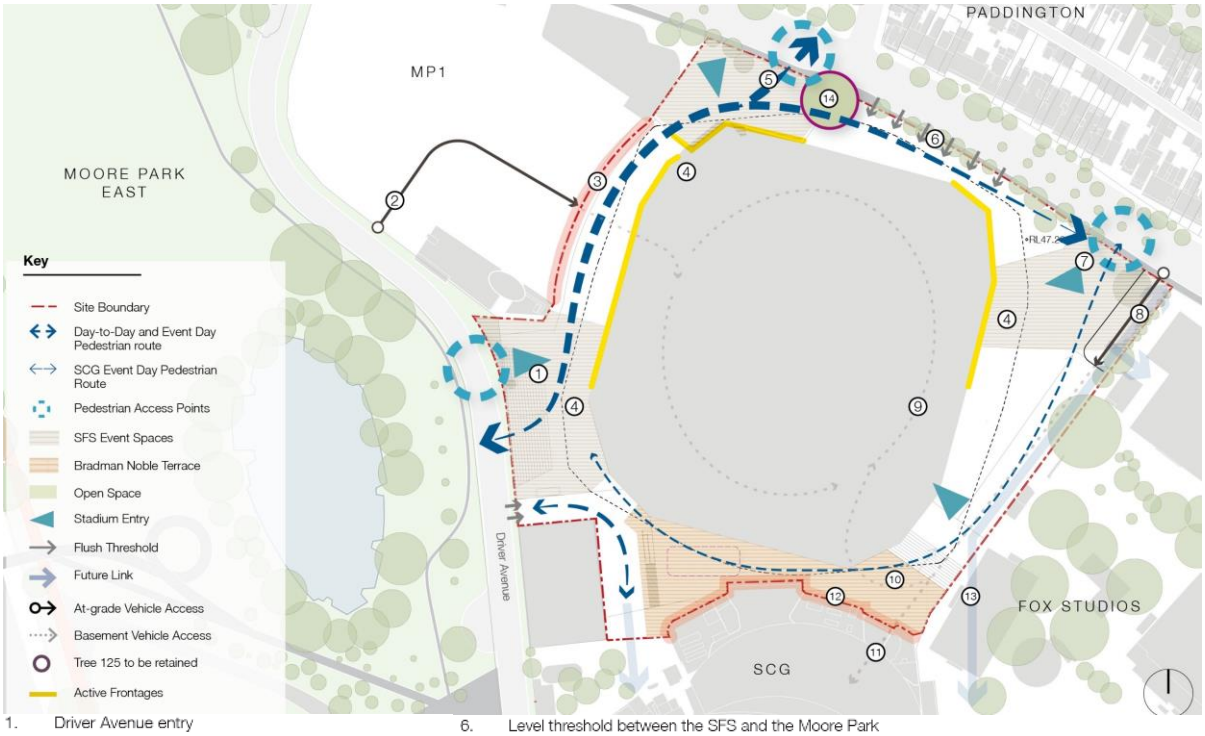
Public Domain and Landscaping

As outlined in the preceding section, the key move in the public domain strategy will be to significantly increase public accessibility to, and through, the stadium site by removing existing fences to Moore Park Road and creating new through-site links to increase permeability between Paddington and Moore Park. This creates a significant opportunity to create a new high-quality public domain which serves not only the requirements of the stadium and major events, but which also creates new spaces which benefit the local community on a day-to-day basis.

Existing event spaces and primary points of arrival on Moore Park Road (near Regent Street) and from Driver Avenue will be supplemented by a new arrival plaza adjoining Moore Park Road near Oatley Road. These three spaces will serve as the primary entrances to the site and align with key pedestrian desire lines for those travelling to the stadium (**Figure 37**). The detailed design of the stadium's public domain will be an integral component of the Design Excellence process outlined in **Section 5.1.4** below, guided by the following principles established under, and detailed further within, the Urban Design Guidelines provided at **Appendix C**:

- Create a connected, accessible concourse that relates to the levels of the surrounding public domain and seamlessly integrates to the internal stadium concourse levels.
- Support safe, convenient public circulation through the site to connect to key attractors and transport around the stadium day-to-day.
- Maximise soft landscaping and planting to stitch the site into its surrounds and create shaded comfortable areas for the public while maintaining functionality of all public spaces, allowing clear access to and from stadium entries.
- Utilise landscaping and planting to manage level changes, soften interfaces and separate vehicle zones from the public.
- Promote pedestrian and active transport through the site and minimise vehicular movement within the public domain.
- Create visual links into and across the site to support wayfinding, activation and passive surveillance.
- Integrate wayfinding and signage to support an enhanced use of the SFS.

Tree 125 will be retained at the new Oatley Road plaza, as will the cluster of trees (Trees 231-238) which adjoin Paddington Lane, and will be integrated into the landscaping and public domain for the new stadium (**Figures 37** and **38**).



1. Driver Avenue entry
2. Retain existing vehicle access point off Driver Avenue
3. Level change between MP1 and external SFS concourse
4. Active frontage in areas of high visibility and adjacent to event gathering spaces
5. Oatley Road entry
6. Level threshold between the SFS and the Moore Park Road pavement
7. Moore Park Road entry
8. Paddington Lane vehicular entrance with portal down into SFS and SCG basements
9. Service ring road around the field of play
10. Bradman Noble Terrace
11. Access into the SCG Basement
12. Secure frontage to Bradman Noble Stand
13. Allow for future link through to Fox Studios and the Entertainment Quarter
14. Retain Tree 125

Figure 37 Public domain strategy

Source: SJB

Figure 38 Tree protection and indicative planting strategy

Source: SJB

Vehicular access and parking

With the exception of MP1, no patron car parking for the SFS and SCG is currently provided within SCSGT lands. No new parking for patrons of the stadium is proposed as part of the redevelopment. The SCSGT will continue to coordinate operations with external parking venues (CPMPT, Entertainment Quarter, Sydney Girls & Boys High School) in relation to parking management during events at the new stadium. The utilisation of off-site parking at these locations is a long-standing arrangement which has served major events within the precinct well.

Subject to detailed design, a limited basement ring road is proposed which will provide for loading within the stadium envelope as well as approximately 40-50 restricted parking spaces for use by stadium administration, officials and stadium hirers only. No general parking will be provided. Access to the basement will be via MP1 car park to allow for security arrangements to be integrated with vehicle access points. Paddington Lane access will be maintained but primarily as an emergency vehicle access point.

Following the completion of the construction of the stadium, the MP1 car park will be reinstated. The final number of parking spaces provided within MP1 will be subject to the detailed design subject to the Stage 2 Development Application, however the total parking capacity is expected to remain unchanged.

Measures to increase active travel to the stadium and public transport use will be prioritised in the detailed design and operation of the new stadium. The completion of the CBD and South East Light Rail, which includes a dedicated stop at Moore Park, will provide for significantly improved public transport connectivity to the stadium. New bike parking facilities will be provided for staff and visitors

5.1.4 Design Excellence Process

A Design Excellence Strategy has been prepared by Infrastructure NSW in collaboration with, and endorsed by, the NSW Government Architect's Office (**Appendix D**) to ensure that the future stadium achieves design excellence by following a competitive design process in accordance with the City of Sydney Council's Competitive Design Policy (2013).

The Design Excellence Strategy involves an invited 'design alternatives' competitive process in accordance with clause 4.1 of the Competitive Design Policy, with three design consortia (consisting of architectural and landscape architecture firms) to be engaged to develop integrated concepts for the external stadium design (façade and roof) and the public domain on a competitive basis.

A Panel of suitably qualified and experienced design experts, consisting of the NSW Government Architect (or representative), one independent panellist, a representative of Infrastructure NSW and a representative of the City of Sydney, will be responsible for the assessment of proposals and the selection of the successful design consortia.

A Competitive Design Alternatives Report outlining the process followed, evaluating the submissions received and detailing the reasons for the final decision will be prepared and endorsed by the Panel for submission to the NSW Department of Planning and Environment as the consent authority for the Stage 2 Development Application.

The successful design consortia will be appointed as the lead architect for the project and will retain responsibility for the development of documentation to support the Stage 2 Development Application. The winning designer will be required to work with an experienced stadium designer. The Panel will retain an ongoing role to ensure that the design integrity of the winning scheme from the design alternatives process is maintained throughout the design development process in order to ensure that design excellence is maintained. This process will involve a series of presentations to, and issuing of advice by, the Panel at key design development milestones.

5.1.5 ESD Strategy

An Environmentally Sustainable Design Strategy has been prepared by Aurecon (**Appendix N**) to establish the framework and principles for the future environmental performance of the new stadium to ensure that sustainable development objectives are achieved. The future stadium is targeted to achieve a LEED (Leadership in Energy and Environmental Design) Gold rating. Further sustainability initiatives that go beyond the targeted LEED Gold certification are detailed in the Strategy and include, but are not limited to:

- salvaging 90% of construction and demolition waste for reuse or recycling;
- exceeding the overall energy efficiency benchmark by 20% through a combination of LED lighting, smart envelope design, and the inclusion of an energy generation system on site such as solar panels on the roof;
- exceeding the overall water efficiency benchmark by 20% through efficient fittings and fixtures, minimising landscape irrigation needs, rainwater collection and reuse, and expanding bore water facilities at the SCG;
- prioritising pedestrian circulation and permeability in the future design, providing bicycle parking for staff and visitors including exploring 'valet bike parking' to assist in game-day peak periods, and other measures to encourage the uptake of sustainable modes of transport;
- installing electric vehicle charging points, and prioritising parking for green vehicles;
- enhancing planting on site with 95% of the new vegetation to be Australian native species; and
- installing digital monitoring systems to manage and reduce energy demands in real-time.

As part of the detailed design and delivery of future development on the site, Infrastructure NSW is also committed to preparing a Green Travel Plan that will consider site-specific measures implemented to promote and maximise the use of more sustainable modes of travel, and a life cycle assessment to investigate the total environmental impact of the project's life. The detailed design of the future stadium on the site will also be required to demonstrate that it has considered the initiatives in the Strategy, and demonstrate that it is capable of achieving the relevant LEED certification.

5.1.6 Land Use – 'Recreation Facility (Major)' and Ancillary Uses

The Concept Proposal seeks to provide for the future construction and operation of a new major rectangular sports stadium to replace the existing SFS, which is defined as a 'recreation facility (major)'.

The existing Sydney Football Stadium is not currently restricted in terms of the nature, frequency or duration of general sporting events. It is important that, as a Tier 1 stadium sited within a long-established major events and sporting precinct, the new stadium is capable of accommodating growth in existing sporting events and patronage as well as facilitating new sporting events or major event opportunities as they arise. Significant effort and resources have been dedicated to ensuring that the operational and event management capacities of the existing SFS to support this event profile and minimise environmental impacts to an acceptable level, and it is expected that the new stadium will maintain or improve upon these arrangements so that there is no need to further constrain the ability of the stadium to host sporting events. Accordingly, it is not proposed to impose any further restrictions on the operational profile of events in terms of the number of events or attendance capacity,

An indicative profile of events is provided below based on the current utilisation of the SFS and anticipated growth of events. It is anticipated that there will be between 49-52 events per year that will include:

- NRL – Season games
- NRL – Finals
- Rugby League – International games
- Super Rugby – Waratahs season games
- Rugby Union – International games
- Rugby Sevens (typically a multi-day event)
- A-League – Sydney FC season games
- Football (soccer) – International games
- Exhibition sporting events
- Women's competitions
- Concerts
- AFLX
- Major international tournaments

Events are generally a single sporting match, however, a single event can also include back-to-back games held over several hours (e.g. junior and reserve grade games held immediately prior to an NRL match) or double-games (e.g. a W-League and A-League match or two NRL matches played back-to-back). In addition, the Rugby Sevens tournament is a single event which occurs over multiple days.

Any and all of these events are capable of attracting the maximum occupancy crowd of 45,000 persons in the right circumstances (up to 55,000 for concerts). Whilst most events will typically not reach the maximum capacity, as outlined above it is essential that the ability to accommodate a maximum capacity crowd for all events is provided.

A limit of six (6) concerts/ entertainment events per annum is currently applied under the terms of existing noise restrictions that relate to the site. This limit will be maintained for the new stadium.

The Stage 2 Development Application will include further details regarding the anticipated event profile, as well as of any ancillary land uses associated with the stadium such as merchandise stores, food and beverage and visitors and member's information. The nature of these uses is subject to the detailed stadium design and operational profile. The Stage 2 Development Application will include details and assessment of the location, GFA, anticipated trading hours and scale of these ancillary facilities.

5.1.7 Off-site works

No off-site works are proposed as part of this application. As outlined in the Mitigation Measures at **Section 8.0**, Infrastructure NSW will continue to work with key stakeholders and government agencies responsible for land outside of the SCSGT lands to ensure that the future development and use of the stadium is coordinated with key project (e.g. CBD and South East Light Rail, Moore Park Road separated cycle path) and other agency planning and public domain activities (e.g. Moore Park Master Plan, City of Sydney).

5.1.8 Stages of Development

The proposed development will occur in two stages, comprising:

1. **Stage 1** – Demolition of existing stadium.
2. **Stage 2** – Construction and operation of new stadium.

Subject to planning approval for the current Concept Proposal and Stage 1 Demolition Plan, an indicative staging program is outlined in **Table 3** below.

Details of Stage 1, which forms part of this Development Application, are set out in **Section 5.2**. A State Significant Development Application for Stage 2 will be submitted in 2019 for assessment and approval of the detailed design and operation of the future stadium.

Table 3 Staging of Proposed Development

Stage	Indicative Timing
Stage 1: Site establishment	January 2019
Stage 1: Demolition of ancillary buildings (exc. Cricket NSW)	February 2019 – May 2019
Stage 1: Demolition of Cricket NSW building and indoor wickets	September 2019 – October 2019
Stage 1: Demolition of Sydney Football Stadium Roof	January 2019 – July 2019
Stage 1: Demolition of Sydney Football Stadium Structure	January 2019 – December 2019
Stage 2: Construction of new stadium (subject to further detail in Stage 2 planning application)	October 2019 – June 2021
Stage 2: Testing and commissioning (subject to further detail in Stage 2 planning application)	June 2021 – February 2022
Stage 2: Commencement of stadium operation	March 2022

5.2 Detailed Stage 1 Early Works

In accordance with section 4.22(2) of the EP&A Act, this Development Application sets out detailed proposals, and seeks consent for, the first stage of the development (Stage 1) which comprises the demolition of the existing Sydney Football Stadium, ancillary buildings and tree removal. The following sections set out the details of the Stage 1 works, and should be read in conjunction with the Demolition Plan prepared by SJB (**Appendix C**) and the Construction (Demolition) Management Plan prepared by Aver Consultation (**Appendix E**).

5.2.1 Demolition of Sydney Football Stadium and ancillary buildings

The Stage 1 works comprise the demolition of the following buildings:

- Sydney Football Stadium
- Sheridan Building
- Roosters Building
- Waratahs Building
- Cricket NSW Administration Building and Indoor Wickets

Demolition of these buildings will include de-commissioning of utility infrastructure servicing these buildings and any diversions/relocations required to ensure that utility supply to surrounding facilities/ buildings within the precinct to be retained are not disrupted.

As outlined in **Table 3**, demolition of the Cricket NSW building and indoor wickets will not commence until September 2019 in order to allow for decanting of these uses into a new facility.

An extract of the Demolition Plan indicating the location of the buildings to be removed is provided at **Figure 39**. The existing Australian Rugby Development Centre (ARDC) and Rugby League Central Buildings will be retained in-situ throughout the demolition and construction phases and will remain operational. In addition, the outdoor practice cricket wickets will also be retained to facilitate the operational requirements of the SCG for cricket matches.

Demolition will be carried out over a period of 8-12 months, subject to the program of the selected demolition contractor.

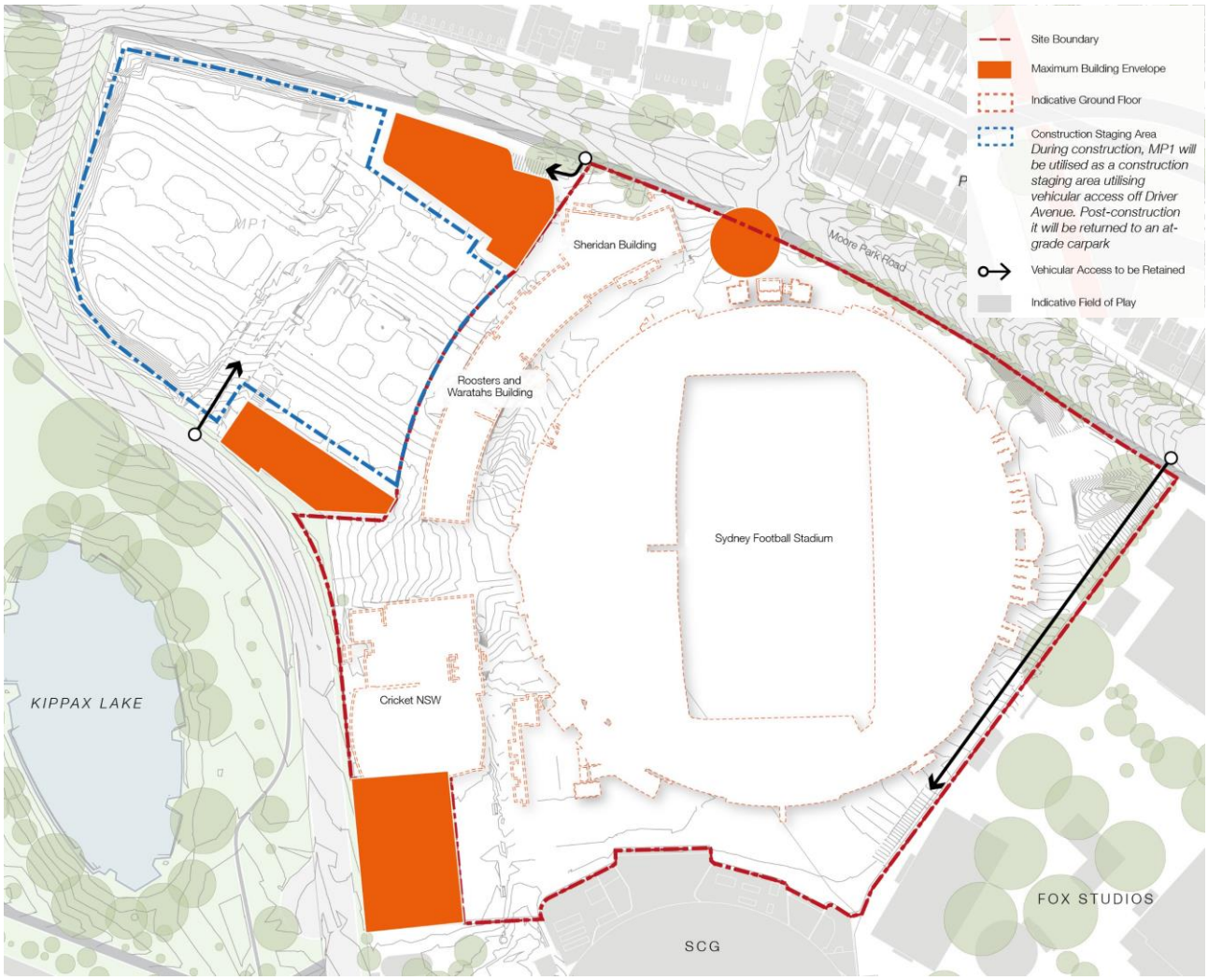


Figure 39 Extract of Demolition Plan

Source: SJB

5.2.2 Tree Removal

The following trees will be retained and protected within the SFS site:

- Tree 125 – Moreton Bay Fig near Moore Park Road and Sheridan Building
- Trees 231-238 – Cluster of trees, including Weeping Hill Fig, near the Moore Park Road gates and Paddington Lane;
- Trees immediately to the south of the SCG outdoor practice wickets and the rear of the Members' Stand, and all other trees within the SCG located outside of the site boundary; and
- Existing street trees along Moore Park Road and Driver Avenue.

The proposed development will necessitate the removal of 26 trees, as illustrated within the Arboricultural Impact Assessment prepared by TreeIQ (**Appendix F**). Specifically, trees to be removed include those located within the south-western portion of the site and the cluster of trees located within the forecourt area adjacent to the Sydney Sports Grounds Members Services buildings. Of the trees to be removed, 11 trees were assessed as being in poor condition.

The Arboricultural Impact Assessment outlines the tree protection measures which are to be put in place for the duration of the demolition and construction phases. A further assessment by a qualified arborist will be required to accompany the Stage 2 DA to confirm that the detailed design makes adequate arrangements for the ongoing protection and health of these trees and replacement of trees removed during the Stage 1 works.

5.2.3 Demolition Site Management

A Construction (Demolition) Management Plan has been prepared by Aver Consulting (**Appendix E**) which has been developed to guide activities during the demolition of the existing Sydney Football Stadium and associated buildings. The plan establishes site management principles and strategies which will be further detailed in the Demolition and Environmental Management Plan to be prepared by the appointed contractor prior to the commencement of works.

Hours of Work

All work on site will only occur between the following hours:

- 7am and 6pm Monday to Friday;
- 8am and 1pm Saturday;
- No works on Sundays or public holidays;
- unless otherwise approved in writing by the NSW Department of Planning and Environment due to extenuating circumstances.

It is noted that these hours are unlikely to be fully utilised, particularly in respect of Friday evenings, due to restrictions on the ability to undertake demolition works prior to and during events hosted at the SCG.

Site Protection

Fencing will be erected around the perimeter of the site to control access and provide for protection of pedestrians where appropriate. The fence line will generally align with the existing property boundary, with pedestrian access to the footpath along Moore Park Road maintained.

Construction and Demolition Compound (MP1)

The existing MP1 car park will be utilised during the Stage 1 Demolition phase and future stages of construction work as a construction compound in order to provide sufficient area for on-site waste processing, stockpiling, loading and deliveries, materials storage and handling, site sheds and other demolition/construction management activities.

Demolition Waste Management

Waste processing activities will be undertaken within the construction compound, including separation of waste streams, storage and processing to enable re-use of materials on-site during the construction phase. This will include the use of an on-site concrete crushing facility to allow waste material to be re-used on site and minimise the number of heavy vehicles required for material to be removed from the site.

Equipment and Plant

Demolition of the stadium in a timely and efficient manner will require the use of a range of construction equipment and plant, including (but not limited to):

- Mobile (approx. 50 tonne) and temporary crane (approx. 250/450 tonne);
- Excavators and bobcats;
- Jackhammers/ rockbreakers;
- Concrete crusher;
- Mulcher/chipper;
- Hand tools;
- Chainsaw;
- Water tank trucks;
- Generators;
- Boom lifts;
- Water tanks;
- Trucks; and
- Light vehicles.

A worst-case estimate of the number and type of equipment which would be operating on the site during the demolition phase is outlined at Table 15 of **Appendix K**, which will be subject to further refinement as part of the preparation of the Demolition and Environmental Management Plan by the appointed contractor.

Vehicular Access and Parking

All demolition traffic will enter and exit the site from Moore Park Road using existing vehicle access points at Paddington Lane, adjacent to the Sheridan Building and Driver Avenue (**Figure 40**). During the demolition phase the number of heavy vehicles accessing the site is expected to be low, with a maximum of 5 light vehicles and 40 heavy vehicles per day during the main demolition phase.

As illustrated in **Figures 41** and **42**, demolition traffic will travel to and from the site utilising main roads only in order to access the regional road network. Within the immediate vicinity of the site, this will involve demolition vehicles utilising Moore Park Road, South Dowling Street and Oxford Street. All heavy vehicle operators will be instructed not to use local roads. There will be no heavy vehicle traffic for the project on Oatley Road or Regent Street.

Vehicular access to the Rugby League Central building from Driver Avenue will be maintained throughout the demolition period, as will vehicular access to the ARDC building from Moore Park Road.

Parking will not be provided on site for construction staff and contractors during the demolition phase. During the demolition phase the on-site workforce is expected to be low, with a maximum of 30 construction workers on site at any one time. A workforce travel plan will be developed by the appointed contractor as part of the detailed Demolition and Environmental Management Plan, which will include measures to minimise impacts on local on-street parking, including information regarding public transport and the availability of parking along Driver Avenue and within the Entertainment Quarter public car park.

Figure 40 Vehicle access points for demolition phase

Source: Arup

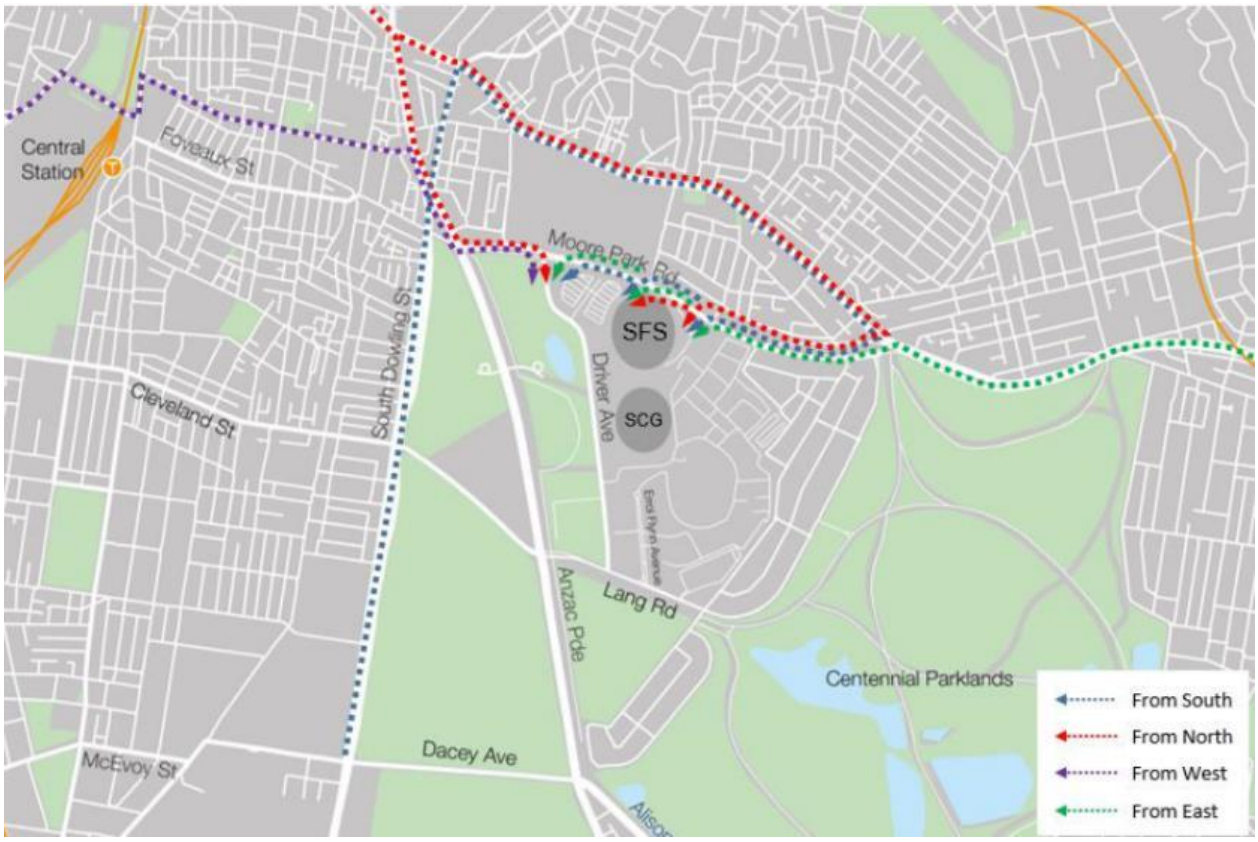


Figure 41 Construction traffic routes for heavy vehicles travelling to the site

Source: Arup

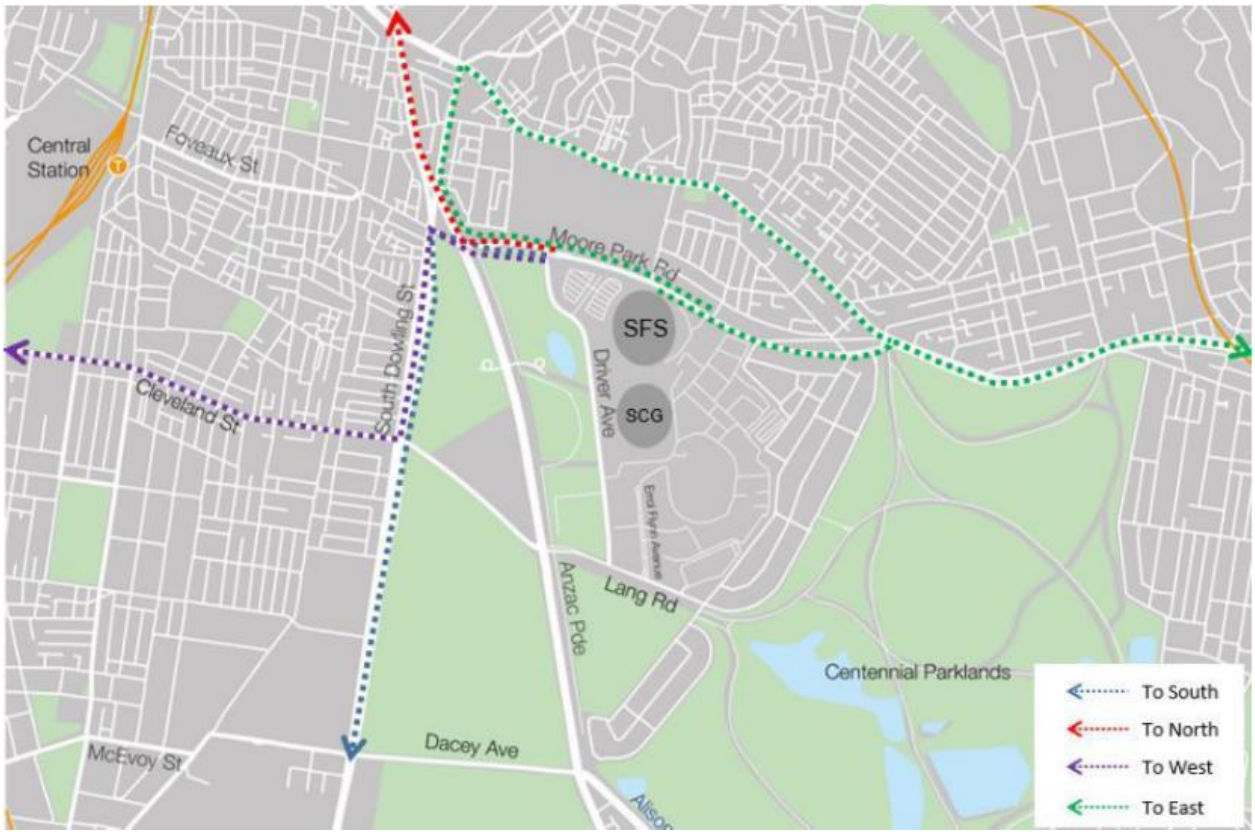


Figure 42 Construction traffic routes for heavy vehicles travelling away from the site

Source: Arup

5.2.4 Demolition Program

Subject to development consent, demolition is expected to commence in January 2019 and take approximately 8-10 months to complete, generally in accordance with the program outlined in **Table 3**.

6.0 Environmental Assessment

This chapter of the Environmental Impact Statement (EIS) contains our assessment of the environmental effects of the proposed development as described in the preceding chapters of this report.

This chapter is structured based on the key topics and issues identified in the SEARs (refer **Section 1.2**) as well as those other matters identified in the environmental assessment process. The Concept Proposal and detailed Stage 1 Demolition works are generally addressed together within each section, with appropriate assessment directed to each respective scope as relevant and appropriate.

Under Section 4.15 (1) of the EP&A Act, in determining a development application the consent authority must take into account a range of matters relevant to the development, including the provisions of environmental planning instruments; impacts of the built and natural environment, the social and economic impacts of the development; the suitability of the site; and whether the public interest would be served by the development.

The assessment includes only those key matters under Section 4.15(1) that are relevant to the proposal. The mitigation measures outlined in **Section 8.0** complement the findings of this section.

6.1 Environmental Planning and Assessment Act 1979 & Regulation 2000

The EP&A Act establishes a specific assessment system to consider projects classed as State Significant Development (SSD). SSD is development deemed to be of State significance, and includes for example projects of a certain value that are being completed on sites regarded as important to the NSW Government, such as the Sydney Sports Stadiums Site, or for a particular purpose such as major sporting facilities. As noted, the proposed development that is the subject of this DA is categorised as SSD.

Division 4.4 of the EP&A Act relates to concept development applications. A concept development application is one that sets out concept proposals for the development of a site, and for which detailed proposals for separate parts of the site are to be the subject of subsequent development applications. The application may also concurrently set out detailed proposals for the first stage of development.

Section 4.24 of the EP&A Act provides that while any consent granted on the determination of a staged DA for a site remains in force, the determination of any further development application in respect of that site cannot be inconsistent with that consent.

This EIS has examined and taken into account all possible matters affecting or that are likely to affect the environment by reason of the proposed development. **Table 4** below provides an assessment of the proposed development against the objects of the EP&A Act.

The proposed development is consistent with Division 4.1 of the EP&A Act, particularly for the following reasons:

- the development has been declared to have state significance;
- the development is not prohibited by an environmental planning instrument; and
- the development has been evaluated and assessed against the relevant heads of consideration under Section 4.15(1).

Table 4 Objects of the EP&A Act

Object	Comment
Section 1.3: (a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,	The proposal has the potential to provide a range of social and economic benefits, and will be carefully designed, tested, and monitored throughout the staged delivery process to ensure that it does not result in any adverse cultural or environmental impacts.

Object	Comment
(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,	The principles of Ecologically Sustainable Development, as set out in Schedule 2 of the EP&A Regulation 2000, as well as other relevant economic, environmental and social considerations have been addressed in this EIS and the accompanying information. The 'Justification of the Proposal' is outlined in **Sections 6** and **9** of this EIS demonstrates how such factors have been considered in the Concept Proposal.
(c) to promote the orderly and economic use and development of land,	By setting out a Concept Proposal for the development of the new stadium, this application provides for the orderly and economic planning of the new stadium in accordance with established planning parameters, whilst also allowing the Stage 1 demolition works to commence to minimise disruption to Sydney's sporting infrastructure and facilitate the delivery of the new stadium in a timely manner.
(d) to promote the delivery and maintenance of affordable housing,	Not applicable.
(e) to protect the environment, including the conservation of threatened and other species of native animals and plants, ecological communities and their habitats,	The proposed development takes place in a modified and disturbed environment, which does not impact on biodiversity values. The site is not considered to have habitat suitable for any threatened flora and fauna, as confirmed in the Biodiversity Development Assessment Report at **Appendix Q.**
(f) to promote the sustainable management of built and cultural heritage (including Aboriginal cultural heritage),	The SFS is not identified as a heritage item in an environmental planning instrument or under the *Heritage Act 1977*, however Busby's Bore (State Heritage) traverses the site and the site is located within a Heritage Conservation Area under the Sydney LEP 2012. Furthermore, the site is surrounded by and influenced by a number of heritage items of varying significance. An assessment of the heritage context of the site and the potential for archaeological remains on the site has been assessed by Curio Projects (**Appendices L** and **M**) to identify the potential presence of, and impacts on, the heritage values of the site and surrounds in order to promote the sustainable management of this heritage. Refer to **Sections 6.9** and **6.10** for further detail.
(g) to promote good design and amenity of the built environment,	The Concept Proposal provides Urban Design and Public Realm Guidelines which establish the framework for the future detailed design of the stadium to promote good design and amenity. The detailed design of the new stadium will be the subject of a competitive architectural and landscape architecture design process (refer **Section 5.1.4)** and will be subject to further detail and assessment as part of the Stage 2 DA. An assessment of the proposed overarching building envelope and the potential impacts of this envelope and preliminary site works has been completed in **Section 6** below. This assessment has informed the detailed framework developed for the site and will ensure the future detailed design and operation of the stadium achieves excellence in design and does not adversely impact the surrounding environment.
(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,	The current SFS is no longer fit for purpose, and does not comply with modern standards in terms of accessibility, construction, safety and security. The new stadium design, which will be detailed in the Stage 2 DA, will be designed to meet these current standards and ensure that the stadium is fit for purpose into the future to ensure the protection of the health and safety of patrons, staff and hirers.
(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,	Consultation has been undertaken with various levels of government and government agencies during the preparation of this Development Application as outlined in **Section 4.0**, and all agencies will be afforded the opportunity for further input into the development process during the public exhibition process.
(j) to provide increased opportunity for community participation in environmental planning and assessment.	The community consultation and participation to date has assisted, and will continue to assist, the development of the proposal. This is detailed in **Section 4.0** of the EIS. Further consultation will be carried out during exhibition of the application, during design development, during the preparation and exhibition of the Stage 2 DA, prior to the commencement of construction, and throughout the construction period.

In addition to the above, the EIS has addressed the specification criteria within Clause 6 and Clause 7 of Schedule 2 of the EP&A Regulation. Similarly, the EIS has addressed the principles of ecologically sustainable development through the precautionary principle (and other considerations), which assesses the threats of any serious or irreversible environmental damage (see **Section 6.21**).

As required by Clause 7(1)(d)(v) of Schedule 2 of the EP&A Regulation, the following additional approvals set out in **Table 5** are either not required by virtue of the fact that the project is SSD, or because they are not required in order to permit the proposed development to occur.

Table 5 Other legislation which does and does not apply

Act	Approval Applicable/ Required?
Approvals that do not apply to State Significant Development	
Coastal Protection Act 1979	N/A
Fisheries Management Act 1994	N/A
Heritage Act 1977	N/A
National Parks and Wildlife Act 1974	N/A
Native Vegetation Act 2003	N/A
Rural Fires Act 1997	N/A
Water Management Act 2000	N/A
Legislation that must be applied consistently	
Fisheries Management Act 1994	No
Mine Subsidence Compensation Act 1961	No
Mining Act 1992	No
Petroleum (Onshore) Act 1991	No
Protection of the Environment Operations Act 1997	No
Roads Act 1993	No
Pipelines Act 1967	No

6.2 Compliance with Strategic Planning Framework

The proposed Concept Proposal is generally consistent with the provisions of the relevant planning policies identified in the SEARs, as detailed in the following sections and other supporting technical information appended to the report.

6.2.1 NSW Premier's Priorities

The NSW Premier's Priorities represent 12 of the 30 key policy priorities for the NSW Government, replacing the former NSW 2021 plan. The priorities outline the NSW Government's vision and objectives for the State's near-term future and are intended to guide all government action. The priorities set a series of targets designed to rebuild the economy, deliver quality government services, improve infrastructure, strengthen our local environment and communities and improve governance structures. The key priorities as they relate to the proposed development are discussed below.

Creating Jobs

The NSW Government identifies NSW as leading the nation on key economic indicators, whilst also acknowledging that more can be done to attract new jobs and businesses to the State. The State Government has targeted the creation of 150,000 new jobs in NSW by 2019 and aims to make the NSW economy as competitive as possible and therefore help create employment opportunities across the state. Whilst this jobs target was achieved in May 2016, the NSW Government is continuing to develop key initiatives that assist in the creation of jobs, such as creating jobs and apprenticeships for the construction sector to promote the strength and continued growth of the economy.

The proposed development directly benefits job creation and more widely contributes to tourism and the Global presence of Sydney. As detailed in the Social and Economic Impact Assessment Statement prepared by Ethos Urban (**Appendix O**), It has the potential to create approximately 600 new full time equivalent jobs during the

construction process and 300 full time equivalent jobs at the stadium once it is operating. In addition to these direct benefits, the new stadium is expected to have a wide range of indirect employment broader economic benefits occurring within the local and wider Australian economy as a result of the flow-on economic activity, including supporting an additional 346 part time equivalent jobs in local hospitality, accommodation and entertainment industries.

Building Infrastructure

The NSW Government has also committed to delivering high-profile infrastructure projects on time and on budget, and credits Infrastructure NSW as the expert, independent advisory body on the government's ambitious infrastructure projects. Whilst the proposal is not identified as being one of the 10 high-profile infrastructure projects being tracked in NSW, the proposal ties into surrounding 'step-change' projects and contributes to the broader renewal of ageing infrastructure in NSW to support the future needs of the community.

The stadium will benefit from ongoing improvements in Sydney's light rail network. Specifically, the CBD and South East Light Rail is identified as being one of the 10 priority infrastructure projects, and will provide a dedicated light rail stop that services the stadia. Services are expected to commence in 2019, before the reopening of the stadium, ensuring that the stadium operates in conjunction with improved transport capacity.

6.2.2 NSW Stadia Strategy

In 2012, the NSW Government released the NSW Stadia Strategy. The strategy covered seven Government-owned or leased stadia, namely:

- Stadium Australia;
- Sydney Showground;
- Sydney Cricket Ground (SCG);
- Sydney Football Stadium (SFS);
- Western Sydney Stadium;
- Hunter Stadium; and
- Wollongong Stadium.

The NSW Stadia Strategy 2012 provides a vision for the future of stadia within NSW, prioritising investment to achieve the optimal mix of venues to meet community needs and to ensure a vibrant sports and event environment in NSW. A key action of the strategy included development of master plans for Tier 1 stadia and their precincts covering transport, integrated ticketing, spectator experience, facilities for players, media, corporate and restaurant and entertainment provision. SFS is one of three designated Tier 1 stadia within NSW under the Strategy, with the others being Stadium Australia (Olympic Park) and the Sydney Cricket Ground (SCG) (**Figure 43**).

In order to qualify for Tier 1 status, a stadium is required to include:

- Seating capacity greater than 40,000;
- Regularly host international sporting events;
- Offer extensive corporate facilities, including corporate suites, open-air corporate boxes and other function/dining facilities; and
- Be the home ground for sporting teams playing in national competitions.

The Concept Proposal has been developed to respond directly to these criteria and provides for a future stadium which meets each of these criteria.

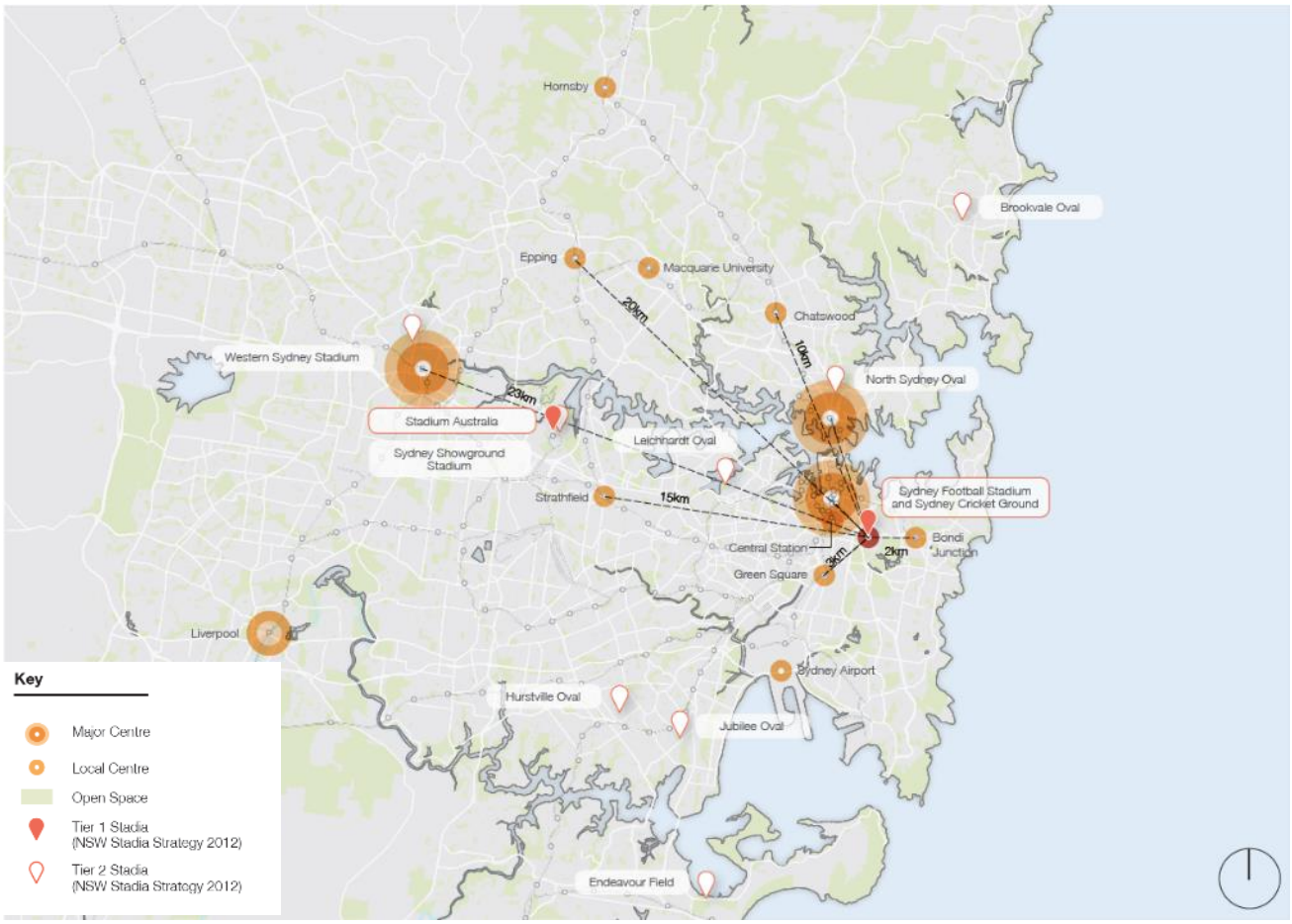


Figure 43 Sydney's Tier 1 and Tier 2 Stadia

Source: SJB Urban Design

6.2.3 Greater Sydney Region Plan – A Metropolis of Three Cities

The *Greater Sydney Region Plan* is the overarching strategy for growing and shaping the Greater Sydney Area. It sets a 40-year vision (to 2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters. The plan was adopted in March 2018, and seeks to reposition Sydney as a metropolis of three cities – the western parkland city, central river city, and the eastern harbour city. In the same vein as the former *A Plan for Growing Sydney*, the Plan provides 10 high level policy directions supported by 40 objectives that inform the District Plans, Local Plans and Planning Proposals which follow in the planning hierarchy (**Figure 44**).

Under this Plan, the site is identified as being within the Eastern City which is well established and serviced and is credited as being the State's greatest economic contributor. A key objective for this city is focusing on innovation and global competitiveness, that underpin continued growth. The SFS is located on the periphery of the CBD and the Eastern Economic Corridor, and is in close proximity of the CBD-South East Light Rail as shown in **Figure 45** below.

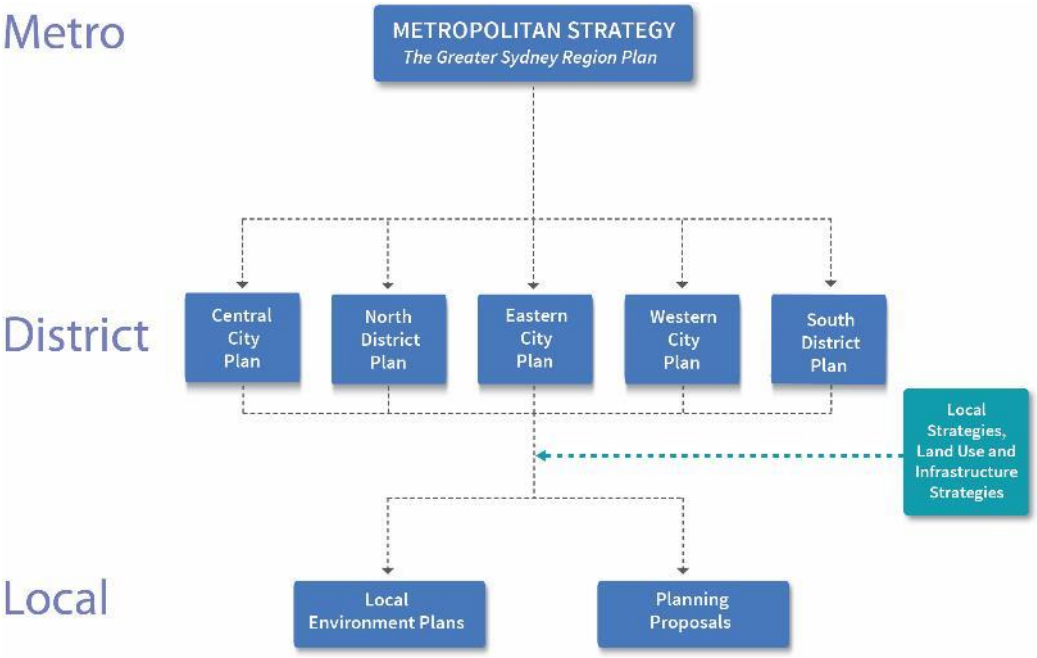


Figure 44 A hierarchy of plans

Source: Ethos Urban

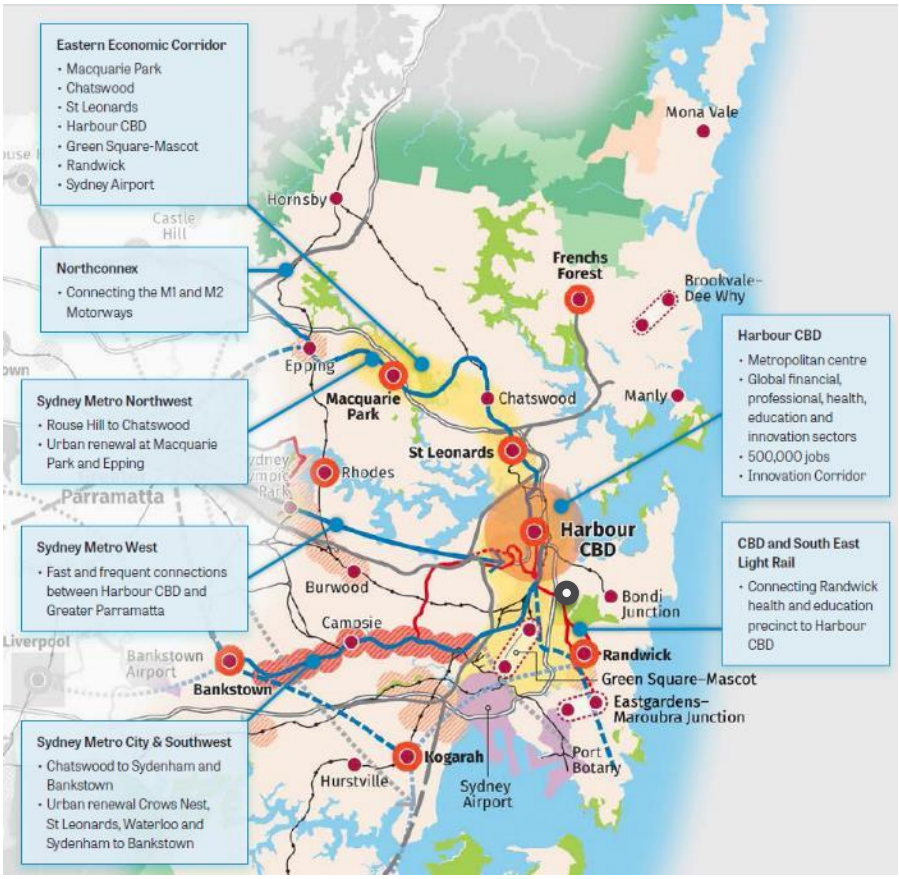


Figure 45 Features of the Eastern City

Source: Sydney Region Plan

The proposal is consistent with the strategic directions for the growth and development of Sydney as follows:

A city supported by infrastructure

- The revitalised SFS will deliver a key piece of sporting and entertainment infrastructure to support the ongoing attraction of Sydney to domestic and international visitors and the ability to host major events. The stadium will enable more people to attend such events, and aligns with ongoing and forecast growth within Sydney.
- SFS will benefit from both existing and planned public transport infrastructure, particularly the CBD-South East Light Rail project, ensuring that the stadium is delivered in conjunction with improved transport capacity.
- The redevelopment of the stadium represents the most cost-effective means of ensuring that the SFS is able to meet sporting and patron requirements over the coming 50 years.

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A collaborative city

This direction acknowledges that managing the competing needs of the city requires all levels of government, industry and the community to work together.

- Whilst the SFS is not identified as being within a 'collaboration area' in the Regional Plan, the SCSGT precinct is a significant sporting precinct not only for events but also for administration and training. The Rugby League Central and ARDC buildings (rugby union), which will be retained through the SFS redevelopment, are national-scale sporting administration facilities for rectangular-field sports, whilst the presence of UTS within the precinct also provides synergies with research and education. Ensuring that the SFS remains relevant within the NSW and Australian sporting ecosystem is vital to the maintenance of this cluster.
- SFS remains consistent with the existing and long term strategic vision for the area as a recreation, sporting and entertainment precinct that is accessible to all Sydney-siders and visitors. Improved public domain will provide for increased integration with, and accessibility to, regional-scale recreational facilities in Moore Park.

A city for people

- A key outcome of the proposal is to improve infrastructure and services and therefore drastically improve the usability of the stadium. This includes balancing the current deficit in female, disabled, and unisex facilities, and providing prayer rooms to account for different user groups.
- The stadium will be designed to meet best-practice standards in universal design and compliance with the applicable Building Code of Australia provisions and Australian Standards, and will rectify the poor level of accessibility and facilities for disabled persons currently on the site.
- In creating an improved venue and atmosphere for sporting events, the new stadium will contribute to enhanced community associations with sporting teams, codes and communities.
- SFS will support a social dynamic that will build a community that is 'strong, healthy and well connected'. It has been designed as a new destination within Sydney that supports social interactions, active transport and exercise in a range of open spaces and community facilities.
- A driver of the proposal is to make it accessible to a diverse range of people of different ages, socio-economic statuses and backgrounds.
- The redeveloped stadium will cater for a wider range of sporting fixtures and be able to accommodate the increase in women's professional sport with appropriate player facilities.

Housing the city

- No housing is provided on site.
- The Concept Proposal seeks to continue the existing and envisaged use for the site as a recreation, sporting and entertainment precinct. The site cannot be used for residential purposes and as such it does compete with housing supply opportunities.

A city of great places

- The site is located in proximity of concentrated employment opportunities, retail, education and entertainment opportunities, and offers 'more than just new homes and jobs'. It creates a new and enhanced destination within Sydney and contributes to a safer and more inclusive and walkable Precinct.
- The redevelopment of the stadium will allow for new areas of the site to be opened for public access on a day-to-day basis, delivering new high-quality public domain and significantly enhanced pedestrian connections between Paddington and Moore Park.

	**A well connected city** • SFS is located on the periphery of the CBD, with easy access to surrounding jobs, schools and services and access to other strategic centres. It benefits from existing and planned transport connections, which future development will seek to leverage and enhance. • The Concept Proposal establishes a framework for improved accessibility and active travel to the venue, including transport initiatives such as enhanced wayfinding, improved and increased bicycle parking facilities, and improved wayfinding and communications to promote walking and public transport utilisation. • A key outcome of the proposal is also to improve the walkability and permeability of the precinct during day-to-day use of the site.
	**Jobs and skills for the city** • SFS directly benefits job creation and more widely contributes to local hospitality, accommodation and entertainment industries and the Global presence of Sydney. • Further, entertainment and tourism facilities are recognised as being assets that support the global role of the Eastern City by driving the 'visitor economy'. SFS directly contributes to the long-term health of the visitor economy.
	**A city in its landscape** • The proposal provides for the retention of all existing street trees adjoining the site as well as the retention of significant existing trees (e.g. Tree 125 – Moreton Bay Fig) and the provision of new trees and soft landscaping. • A key outcome will be to contribute to the urban canopy and the landscaped setting of the site and the greater sporting and entertainment precinct. • The proposal does not affect any protected biodiversity or remnant or significant vegetation.
	**An efficient city** • The proposal seeks to deliver a more sustainable development than is presently provided. It is targeting to achieve a LEED Gold Rating, and explore a number of initiatives over and above this certification.
	**A resilient city** • The proposal has sought to minimise exposure to natural hazards by ensuring that future development is not affected by flooding. • The environmental initiatives implemented through the development will contribute to enhanced environmental outcomes and seek to mitigate impacts related to climate change.

6.2.4 Eastern City District Plan

The *Eastern City District Plan* underpins the *Greater Sydney Region Plan* and sets the 20-year vision for the District through 'Planning Priorities' that are linked to the Region Plan. The proposal is therefore consistent with a number of these priorities, as follows:

- **Infrastructure and collaboration:** The new stadium will deliver a key piece of sporting and entertainment infrastructure to support the ongoing attraction of Sydney in an area that is adequately serviced and benefits from close proximity to public transport and road infrastructure. The proposal will support the ongoing attraction of Sydney to domestic and international visitors.
- **Liveability:** A key driver of the project is to provide a stadium that is accessible and inclusive. It will also support a social dynamic that will build a community that is 'strong, healthy and well connected'.
- **Productivity**: The new stadium directly contributes to the long-term strength and productivity of the visitor economy, which is supported by entertainment and tourism facilities. It seeks to increase the capacity of the site, and renew tired facilities so that the stadium is able to attract both domestic and international events and therefore tourists, and support broader economic growth in the region as a direct benefit of increased tourism and activity.
- **Sustainability**: The removal of existing landscaping on the site has been minimised, and there is the potential to enhance the site's existing character through a more resolved public domain and landscape solution. The proposal also proposes to install its own power source such as solar panels, implement water recycling, and employ a range of other sustainability measure that will influence both the design and operation of the stadium.

SFS is identified as being on the edge of the Harbour CBD and Eastern Economic Corridor (**Figure 46**). It is in close proximity of the CBD-Sydney East Light Rail and is just north of a Green Grid Priority Corridor between Centennial

Park and Bondi Junction. The sporting, recreation and entertainment precinct encompassing Centennial and Moore Parks, Fox Studios, and the Entertainment Quarter is considered to be an asset that brings together a diverse range of cultural, creative educational, and recreational endeavours, noting that "there is the potential to grow the opportunities of this precinct." Whilst the proposal does not seek to diversify the use of the site, rather it enhances the long term vision for this site and in doing so supports the visitor economy and the attraction of local, national, and international guests to the SFS.

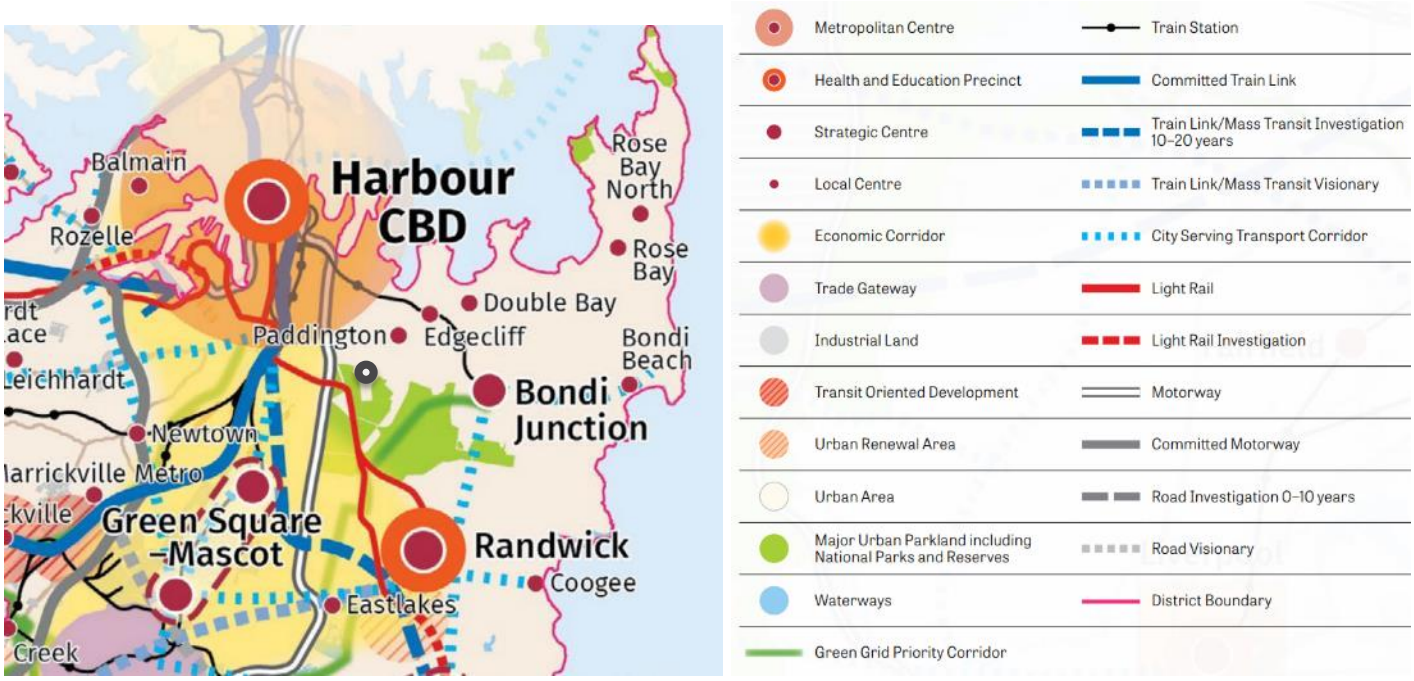

Figure 46 The Eastern City District

Source: Eastern City District Plan

6.2.5 Sustainable Sydney 2030

Sustainable Sydney 2030 is the City of Sydney Council's vision for the sustainable development of the City to 2030 and beyond. It includes ten specific targets to achieve a sustainable Sydney, as well as 10 strategic directions to guide the future of the city. The proposal supports a number of relevant targets and strategic directions, including:

- ***Target 1*** *– The city will reduce greenhouse gas emissions by 70 per cent.*
- ***Target 2*** *– The city will have the capacity to meet 100 per cent of electricity demand by local electricity generation, 30 per cent of water supply by local water capture and increased canopy cover of 50 per cent by 2030.*
- ***Strategic Direction 2*** *– A Leading Environmental Performer*
- ***Strategic Direction 9*** *– Sustainable development renewal and design*

The proposed development is exploring a number of sustainability initiatives, consistent with these targets, for a stadium that is leading in environmental performance. It is targeting a LEED (Leadership in Energy and Environmental Design) Gold rating, and will explore sustainability initiatives over and above this rating. Initiatives to reduce energy and water consumption include (but are not limited to) installing LED lighting and photovoltaic cells on the roof to generate energy; capturing rainwater for reuse, maintenance of bore water facilities, and minimising landscape irrigation needs; prioritising sustainable modes of transport such as public transport, walking and cycling and prioritising electric and green vehicles in the limited on-site parking available.

- ***Target 5*** *– 97,000 additional jobs with an increased share in finance, advanced business services, education, creative industries and tourism sectors.*
- ***Strategic Direction 1*** *– A globally competitive and innovative city*

The proposal is forecast to increase employment opportunities on the site and in Sydney generally as a result of flow-on economic benefits for the entertainment and tourism industries and other contributing services. It will directly

assist in sustaining Sydney as a globally competitive city, and rectify the currently poor user experience that would otherwise result in the loss of opportunity to host major events and halt a likely a decline in attendance and the loss of major national, regional and international events to other stadia beyond NSW. The proposal is important to Sydney's future success as a competitive and innovative city.

- ***Target 6*** *– Trips to work using public transport will increase*
- ***Strategic Direction 3*** *– Integrated transport for a connected city*

The site benefits from a both existing and planned public transport infrastructure, particularly the CBD-South East Light Rail project that is set to open in 2019, ensuring that the stadium commences operating in conjunction with improved transport capacity. A key outcome of the proposal is also to improve the use of sustainable modes of transport by improving the permeability and walkability of the site, providing additional facilities for cyclists, investigating initiatives to encourage public transport use such as integrated ticketing between events and transport providers, not providing additional parking and prioritising green and electric vehicles in the limited on-site parking available. These initiatives, and more, will be explored as part of the separate and future application for the detailed design and operation of the stadium.

- ***Target 7*** *– At least 10 per cent of city trips will be made by bicycle and 50 per cent by pedestrian movement.*
- ***Strategic Direction 4*** *– A city for pedestrians and cyclists*

Pedestrian access to and circulation within the site is currently limited. The use of boundary fencing and the poor relationship to surrounding development prevents the community from accessing the site and restricts 360° circulation. Rectifying the existing issues with access and egress, and the overall walkability of the site and precinct is a key outcome of the proposal to ensure that people are able to walk to and from surrounding suburbs and connecting modes of transport.

The proposal will also provide new bicycle parking and end of trip facilities and will explore initiatives like 'valet bicycle parking' during events to encourage people to make more trips by bicycle.

- ***Target 9*** *– residents will be within walking distance of continuous green links that connect to the harbour foreshore, harbour parklands, Moore or Centennial or Sydney parks.*

The proposed building envelope is in a comparable location to the existing stadium, ensuring that no parkland is lost as a result of the development. The reimagining of the site presents the opportunity to improve the landscape setting of the site, and its connections to Moore Park and Centennial Park and the Sydney Cricket Ground. Significant trees on the site will be retained and celebrated as key features of the public domain design

6.2.6 Additional Relevant Planning Policies

The concept proposal is also consistent with the key additional planning policies, guidelines, and principles identified in the SEARs, as outlined in **Table 6** below.

Table 6 Summary of consistency with relevant additional planning policies

Instrument/Strategy	Comment
Better Placed	The design process for the future stadium has been developed with reference to the NSW Government Architect's (GANSW) integrated design policy *Better Placed*, that recognises that large-scale urban renewal projects are complex and often involve multiple projects being undertaken across stages. The Concept Proposal establishes the framework for the future detailed design of the stadium and includes a Design Excellence Strategy (discussed further in **Section 5.1.4**) that will guide the future competitive architectural design process. This is consistent with *Better Placed* which notes that competitive design processes are a good mechanism for driving good design outcomes.
NSW Future Transport Strategy 2056	The Strategy is the 2017 update of the NSW Long Term Transport Master Plan, and sets out six state-wide outcomes to guide investment, policy and reform and the provision of services. Whilst a number of these outcomes relate to integrating technological advancements with services and providing regional connections, the proposal is consistent with the desire to provide more seamless customer experiences, encouraging active travel, and connecting people to jobs and services.

Instrument/Strategy	Comment
NSW Energy Efficiency Action Plan 2013	The Action Plan seeks to reduce energy use, with the NSW Government committing to 'leading by example' and saving energy and electricity costs in its own operations. The proposal is consistent with the intent of this policy, in seeking to improve the environmental performance of the stadium than what currently exists.
NSW Resource Efficiency Policy	The *NSW Resource Efficiency Policy* seeks to reduce the government's operating costs and lead by example in increasing the efficient use of resources. It nominates measures, targets and minimum standards for the efficient use of energy, water, waste and clean air. Whilst these measures primarily relate to the design and operation of government offices, the Environmentally Sustainable Design Strategy at **Appendix N** details how the future design and operation of the stadium can achieve best practice sustainable building principles.
Sydney's Cycling Future 2013	*Sydney's Cycling Future 2013* seeks to increase the mode share of cycling in the Sydney metropolitan region for short trips between 20 to 30 minutes. The site benefits from an existing cycling network and will seek to increase the use of bicycles when travelling to/from the site through new bicycle parking and end of trip facilities, providing continuous pedestrian and cycle connections through to adjacent neighbourhoods, and investigating special game day initiatives like 'valet bicycle parking'.
Sydney's Walking Future 2013	*Sydney's Walking Future 2013* is the NSW Government's strategy to promote walking for transport and connecting people and places through safe pedestrian networks. The proposal is consistent with this strategy as it delivers a high quality, more permeable pedestrian network that facilitates walking around the stadium and throughout the site, with improved connections to the wider local area. The current stadium suffers from a series of 'pinch points' that prevent efficient pedestrian access/egress and circulation around the stadium, which will be targeted and rectified in the concept for the site. The development will also provide a more activated and sheltered ground plane to improve pedestrian amenity.
Sydney's Bus Future 2013	*Sydney's Bus Future 2013* is the NSW Government's long-term plan to redesign the city's bus network to meet customer needs now and into the future. Whilst the specific projects identified in the Plan do not directly relate to the proposal, the proposal is consistent with Plan's objective to encourage use of the Sydney bus network by commuters. Events at the stadium consider using 'integrated ticketing' whereby the cost of public transport is included in the ticket price to encourage its use.
Sydney City Centre Access Strategy	The Access Strategy is a long term, comprehensive, multi-modal plan that prioritises access to city centre streets for different modes of transport. It aims to balance competing demands for limited road space and deliver better public transport options whilst reducing congestion for those who do need to drive. The Access Strategy includes commitments to implement significant projects in partnership between the NSW Government and the City of Sydney Council. The site is located outside of the City Centre and is therefore not directly addressed in the Strategy, however, the proposal does have the potential to integrate with a number of commitments identified in the Strategy including: • A Pedestrian Improvement Program that seeks to prioritise pedestrians in the centre of the city through improvements to footpaths, passage across roads and signage – a key outcome of the redevelopment will be to improve pedestrian access and circulation, both in terms of physical connectivity and wayfinding. The Urban Design Guidelines at **Appendix C** nominate the desired strategies for access and circulation. • Extending public transport access through the CBD-South East Light Rail project – the proposal will benefit from a dedicated stop on the new Sydney light rail line, which will commence operating prior to the stadium. • A review of off-street parking – no additional parking in the precinct is proposed, compared to what is currently available. • Improving wayfinding – a signage strategy has been developed for the site to guide the design, extent and location of future wayfinding and identification signage. • A network of taxi ranks – the existing drop off and pick up locations surrounding the stadium will be retained, and further opportunities for taxis and rideshare services to use the Anzac Parade and Moore Park Road kerbside outside of peak hours or making use of spaces within the Entertainment Quarter will be explored. • An improved cycleway network – the site benefits from an extensive local and regional cycling network and will provide additional bicycle parking and end of trip facilities to encourage the use of this network.

Instrument/Strategy	Comment
City of Sydney Policy for Waste Minimisation in New Development	The Construction (Demolition) Management Plan (**Appendix E**) has been prepared for the proposed demolition works that describes the measures to be implemented to manage, reuse, recycle and safely dispose of this waste. Consideration of the waste generated by the proposal during the construction and operational stages of the facility will be considered as part of the Stage 2 Development Application and submitted with this detailed application.
City of Sydney Tourism Action Plan 2015	The Tourism Action Plan sets out how City of Sydney will work with partners to maintain and develop a vibrant tourism sector in Sydney. The Plan acknowledges the challenges facing the tourism sector and states that the role of the city is to work with industry and government partners to "create an investment climate that allows tourism, including eco-tourism and environmentally sensitive tourism, to diversify, grow and develop". As a result, the Action Plan notes that a key area of focus will be on 'destination development', being the development of product and infrastructure. Whilst the stadium is not specifically mentioned as a major destination that is being developed, the Action Plan was prepared in 2013 and could not have anticipated the delivery of this project. The proposal remains consistent with the focus of the Action Plan being to increase the capacity of the site and the ability of the stadium to attract both domestic and international events and therefore tourists, and supporting economic growth in the region as a direct benefit of increased tourism and activity. The stadium is considered to be a key destination within Sydney and directly supports the Global presence of Sydney.
City of Sydney Public Art Strategy	The inclusion of public art in the new development will be investigated during the competitive design process and detailed in the Stage 2 Development Application for the design, construction and operation of the stadium. This will be informed by a Public Art Strategy that will be developed with reference to the City of Sydney framework.
Centennial Parklands Plan of Management 2006-2016	The Urban Design Guidelines at **Appendix C** demonstrate how the future design of the stadium and surrounds within the SCSGT land will be aligned with the outcomes of this plan.
Centennial Park Masterplan 2040	The Urban Design Guidelines at **Appendix C** demonstrate how the future design of the stadium and surrounds within the SCSGT land will be aligned with the outcomes of this plan.
Moore Park Master Plan	The Urban Design Guidelines at **Appendix C** demonstrate how the future design of the stadium and surrounds within the SCSGT land will be aligned with the outcomes of this plan.
Centennial Parklands Conservation Management Plan	Refer to the Heritage Impact Statement at **Appendix L.**
Centennial Parklands Tree Master Plan	The Arboricultural Report at **Appendix F** demonstrates how the future design of the stadium and surrounds within the SCSGT land will be aligned with the outcomes of this plan.

6.3 Compliance with Legislation and Environmental Planning Instruments

The environmental planning instruments relevant to the Concept Proposal are assessed in **Table 7** below.

Table 7 Compliance with relevant environmental planning instruments

Instrument/Strategy	Comments
State Legislation	
Biodiversity Conservation Act 2016	In accordance with the *Biodiversity Conservation Act 2016*, an assessment of any State Significant proposal's biodiversity impacts must be undertaken as part of the provision of any SSD DA, including the provision of a Biodiversity Development Assessment Report (BDAR) in instances where it is required. Jacobs have prepared a BDAR in accordance with Clause 1.5 of the *Biodiversity Conservation Act 2016* and Clause 1.4 of the *Biodiversity Conservation Regulation 2017*, which accompanies this report at **Appendix Q** and is discussed in **Section 6.15**.
Sydney Cricket and Sports Ground Act 1978	All works will be contained within the designated land that is controlled by the Sydney Cricket and Sports Ground Trust under Schedule 2A of the Act. Section 16A provides that the Minister for Sport may approve the carrying out of improvements on such designated land, including the demolition and erection of a new building, and that where approval has been granted the EP&A Act does not apply. Notwithstanding this, the Minister for Sport has

Instrument/Strategy	Comments
	determined that the SFS Redevelopment should be subject to assessment and approval by the Minister for Planning under the EP&A Act.
Centennial Park and Moore Park Trust Act 1983	No works are proposed in Centennial Park, Moore Park or Queens Park and as such this instrument does not apply.
Other Acts	Refer to **Section 6.1** in relation to the requirement for approvals under other legislation.
State Environmental Planning Policies	
SEPP (State and Regional Development)	The proposal is development for the purposes of a 'recreation facility (major)' with a capital investment value (CIV) of more than $30 million, and is development at the Sydney Sports Stadiums Site with a CIV of more than $10 million. Accordingly, the proposal is declared to be SSD for the purposes of the EP&A Act under Schedule 1 Clause 13 and Schedule 2 Clause 7 of the SEPP, respectively. This EIS has accordingly been prepared in support of the SSD DA. The Minister for Planning is the consent authority for SSD where the application to carry out the development is made by or on behalf of a public authority (Clause 8A of SEPP SRD). Infrastructure NSW is a public authority, and therefore the Development Application will be assessed by the NSW Department of Planning and Environment and determined by the Minister.
SEPP 55 – Remediation Draft SEPP 55	Clause 7 of SEPP 55 specifies that a consent authority must not consent to the carrying out of any development on land unless it has considered whether land is contaminated and if the land is contaminated, it is satisfied that the land is/can be suitable for the proposed development. Further discussion has been included in **Section 6.17** of the EIS. The construction methodology for the future stadium involves the demolition of land up to the slab, which will facilitate further site testing to occur on site and (if required) addressed as part of a separate and future application for bulk earthworks and the construction of the stadium. The Explanation of Intended Effect for the Draft Remediation of Land SEPP (Draft SEPP 55) makes clear that transitional provisions will be included such that the existing provisions of SEPP 55 will continue to apply to all Development Applications made before Draft SEPP 55 commences. Notwithstanding this, and as discussed in **Section 6.17** of the EIS, the site is suitable for the demolition of the existing stadium structure down to existing slab level with no ground disturbance, whilst the Phase 1 Contamination Assessment confirms that the site is expected to be suitable for the proposed use but that further detailed site investigation will be required to accompany the Stage 2 Development Application to confirm any further measures required to be implemented.
SEPP (Infrastructure)	The proposed concept triggers consultation with NSW Roads and Maritime Services (RMS) under the provisions of Schedule 3 of the SEPP as the Concept Proposal will replace the recreational facility that is expected to generate more than 200 vehicle movements.
Draft SEPP (Environment)	The Draft SEPP Environment was released for public exhibition in October 2017 and aims to repeal and replace a number of SEPPs and SREPs that currently apply in NSW. Under the Draft SEPP, the site is identified as being within an area of 'Urban Bushland' and as such would be subject to controls relating to the protection of land that is reserved for public open space. No part of the site is zoned for this purpose at this time, and as such these provisions of the Draft SEPP do not apply. It is also noted that this Draft SEPP will also encompass the provisions of the Sydney Harbour Catchment REP. This SREP is discussed further below in the context of the proposal.
SEPP 64 – Advertising and Signage	Any building identification, business identification or advertising signage will be outlined in the Stage 2 Development Application. The Urban Design Guidelines include principles regarding wayfinding, signage and interpretation to inform the development of the Stage 2 Development Application.
SEPP (Vegetation in Non-Rural Areas)	Approval is sought for the removal of 26 trees on the site within the footprint of works. The significant Tree 125 Moreton Bay Fig and approximately 100 other trees, will be retained on site. An assessment of the impacts of the proposal on biodiversity is provided in **Section 6.15**.

Instrument/Strategy	Comments
SREP Sydney Harbour	The site is located within the boundaries of the Sydney Harbour Catchment REP. The precinct is not 'zoned' under this plan nor is it located within the 'Foreshores and Waterways Area', where the majority of the plans provisions apply. The key matter for consideration is therefore the visibility from Sydney Harbour. The View Impact Assessment prepared by Ethos Urban and SJB Urban Design illustrates that the proposal will not result in any adverse impacts on views from Sydney Harbour, and is therefore consistent with the considerations outlined in the REP (refer to **Appendix H**).
City of Sydney Plans and Policies	
Sydney Local Environmental Plan 2012	
Cl. 1.2 – Aims of the plan	The Concept Proposal supports the aims of the Sydney LEP 2012: • It reinforces the prominence of the City of Sydney LGA as a destination and the primary centre of activity for Metropolitan Sydney. • It will directly support the role of Sydney as the primary centre for activity, tourism and business and contribute to the Global presence of Sydney. • It has been developed with consideration of best practice ESD targets, where practicable. • It will increase employment opportunities on the site and broader economic benefits in the local and Australian economy. • It will provide enhanced facilities and infrastructure, and seek to open up and activate the site for use by residents, workers and visitors. • It has been designed with consideration of the capacity and availability of public transport in the region, and will seek to encourage the uptake of public transport when travelling to and from the stadium. • It has been designed with consideration of the amenity of surrounding land, and will be designed to mitigate or minimise any potential impacts on amenity throughout the staged delivery process. • It will be the subject of a competitive architectural design process to ensure the future detailed design of the stadium and surrounds exhibits design excellence and reflects its context. • It will be designed with consideration of the Heritage Interpretation Strategy prepared by Curio, with works being conducted in accordance with the detailed heritage and archaeological assessments prepared by Curio Projects. • It will protect and enhance the natural environment where possible, and will not remove or otherwise impede any existing public recreation areas.
Cl. 1.6 – Consent authority	The Minister for Planning is the consent authority.
Cl. 2.3 – Zone objectives and land use table	The site is zoned SP1 Special Activities, for the purposes of recreational facilities (major). The proposed uses are permissible in the zone, and the development will achieve the objectives of the zone by facilitating the renewal of the stadium consistent with the existing and long-term vision for the use of the site, and by minimising and mitigating any likely impacts. This is discussed further in **Section 6.3** below.
Cl. 2.7 – Demolition	In accordance with this provision, consent is sought under this application to demolish the existing stadium on site, down to the slab.
Cl. 4.3 – Height of buildings Cl. 6.19 – Sun access planes	No building height or sun access plane development standard applies to the site.
Cl. 4.4 – Floor space ratio	No floor space ratio development standard applies to the site.
Cl. 5.10 – Heritage conservation	The site is not identified as being of heritage significance, but is located within the Sydney Cricket Ground Heritage Conservation Area and above the line of 'Busby's Bore', a State heritage item. It is also within proximity of a number of heritage items and conservation areas. An assessment of the heritage significance of the site and the potential impacts of development is provided at **Appendix L** and **M**, and discussed in **Sections 6.19** and **6.10.**
Cl. 6.21 – Design excellence	The proposal provides a building envelope capable of achieving the highest standard of architectural, urban, landscape, and environmental design. A competitive design process will be undertaken, as outlined in **Appendix D**.
Cl. 7.1 – Car parking	No maximum rate for car parking applies to the site that will continue to be used as a stadium. The quantum of on-site car parking will remain generally the same as existing, and no additional car parking is proposed for use by patrons.
Cl. 7.14 – Acid sulfate soils	The site is identified as having Class 5 Acid Sulfate Soils. No works are proposed within 500m of any Class 1, 2, 3, or 4 areas, and no works are proposed below 5 metres and by which the water table is likely to be lowered below 1 metre. Further, the Groundwater Report prepared by Arup (**Appendix T**) confirms that the site is not at risk of Acid Sulfate Soils, and that these soils are not in vicinity of the site.

Instrument/Strategy	Comments
Cl. 7.15 – Flood planning	Localised flooding occurs in each instance from a 2-year Average Recurrence Interval (ARI) up to a 100-year ARI event, with significantly deeper and more widespread flooding occurring during the Probable Maximum Flooding (PMF) event. This is discussed further in **Section 6.14** below and the Stormwater and Flooding Report prepared by Arup (**Appendix P**).
Cl. 7.20 – Development requiring or authorising the preparation of a development control plan	Section 4.23 of the EP&A Act outlines that a staged development application can take the place of a site specific DCP to satisfy this provision. Accordingly, this Concept Proposal has been prepared to fulfil Clause 7.20 of the Sydney LEP 2012.
Other City of Sydney Plans and Policies	
Sydney Development Control Plan 2012	The Sydney DCP 2012 is not applicable to SSD (in accordance with Clause 11 of the State and Regional Development SEPP). Due to the unique nature of the stadium, the majority of the DCP provisions are not of direct relevance to the proposal.
City of Sydney Development Contributions Plan 2015	The site is located within the East Precinct to which this Plan applies. The plan does not apply to the current application as the Concept Proposal and Stage 1 demolition works do not give rise to any additional infrastructure demand. Any requirement for the payment of development contributions will be determined as part of the Stage 2 Development Application.

Permissibility

The proposed stadium is classified as a recreation facility (major) and is defined under the Sydney LEP 2012 as:

> ***recreation facility (major)*** *means a building or place used for large-scale sporting or recreation activities that are attended by large numbers of people whether regularly or periodically, and includes theme parks, sports stadiums, showgrounds, racecourses and motor racing tracks.*

The development is permitted in the SP1 Special Activities zone that is designated for Recreation Facility (Major) under the Sydney LEP 2012. The future development of SFS is also expected to incorporate a range of ancillary uses such as food and drink premises, a function centre and kiosks which will operate during stadium operations with the potential for some facilities to operate independently during non-event periods. These uses are ancillary and subordinate to the primary use of the site as a stadium.

6.4 Built Form and Urban Design

6.4.1 Building Envelope, Built Form and Public Domain

Preparation of the Urban Design Guidelines (**Appendix C**) by SJB Urban Design has been informed by an appreciation of the site and surrounds, community and stakeholder feedback received during the pre-lodgement consultation, and understanding of the functional requirements of the future stadium and benchmarking of aspects of the stadium experience against best-practice examples of stadia in Australian and internationally. This approach has facilitated the development of principles for the future built form and public realm which will ensure that the stadium provides for an international-standard facility which is grounded in an understanding of the constraints and opportunities of the local place.

The Guidelines address and outline principles across the spectrum of design considerations, including; access and movement, building height and massing, public realm and open space, security and safety, activation, wayfinding/ signage/ interpretation, architectural expression, sustainability and cultural and heritage significance. These considerations will form the basis for the briefing and assessment of the design excellence process, outlined in **Section 4.1.3**.

The maximum building envelope has been established having regard to the functional requirements of the future stadium and guided by the preliminary reference design for the stadium which has been prepared by Cox Architecture for Infrastructure NSW. This process has involved the testing of a range of potential building footprints and orientations, with the final envelope reflecting the footprint which best achieves the design objectives and functional requirements for a Tier 1 stadium. Whilst predicated on this reference design, the envelope has been determined based on a 'loose-fit' approach to allow scope for further design development and to provide scope for innovation in the façade design as part of the competitive design process. It is not anticipated that the entire volume of the envelope will be required for the final detailed design, but rather the 'loose-fit' approach provides for a 'worst-

case' assessment of the built form having regard to key issues such as visual impact (**Section 6.5.1**) and overshadowing (**Section 6.5.2**). However, it is possible that architectural features that contribute to the design excellence of the future stadium may exceed the maximum building envelope. In the event that the competitive design process results in proposals that exceed the maximum building envelope, these would need to be justified on the basis of architectural merit and assessment of impact and detailed in the design report that will accompany the Stage 2 DA.

Within the public domain, the Guidelines contemplate a series of focal spaces around the stadium perimeter, comprising the Driver Avenue Terraces, Moore Park Road and Oatley Road Plazas, and the Bradman Noble Terrace. These spaces comprise the three main arrival points to the stadium, as well as the immediate interface between the new stadium and the SCG. The Guideline establishes design principles for each space which, operating together, seek to:

- Increase permeability around the stadium compared to the existing situation for both visitors to the stadium and the general public passing through the precinct.
- Create a connected, accessible concourse that relates to the levels of the surrounding public domain and seamlessly integrates to the internal stadium concourse levels;
- Support safe, convenient public circulation through the site which is integrated into the surrounding City of Sydney street network and Moore Park to connect to key attractors and transport around the stadium day-to-day;
- Maximise soft landscaping and planting to stitch the site into its surrounds and create shaded comfortable areas for the public while maintaining functionality of all public spaces, allowing clear access to and from stadium entries;
- Utilise landscaping and planting to manage level changes, soften interfaces and separate vehicle zones from the public;
- Promote pedestrian and active transport through the site and minimise vehicular movement within the public domain;
- Create visual links into and across the site to support wayfinding, activation and provide opportunities for passive surveillance; and
- Integrate wayfinding and signage to support an enhanced use of the SFS.

These sound public realm design principles, as well as the principles for specific focal points, will guide the landscape and public domain design and ensure that a high-quality outcome is achieved within the ground plane of the site. Importantly, the design approach to the public realm will be the subject of the design excellence process, which requires an integrated approach to the architecture and landscape architecture of the site as part of the competitive process.

Having regard to the above, it is considered that the Urban Design and Public Realm Guidelines establish an appropriate foundation for the detailed design of the future stadium, including the competitive design process, to ensure that a high-quality urban outcome is delivered on the site.

6.4.2 Landscaping and Tree Removal

As outlined in **Section 5.2.2**, the Stage 1 Demolition scope of works includes the demolition of 26 existing trees that are located within the footprint of the future stadium. Of these 26 trees, one is identified as a priority for retention, 14 were identified as being considered for retention, and 11 were assessed as being worthy of consideration for removal due to their poor physical condition or impact on existing infrastructure. This impact is unavoidable due to the constraints on the site in terms of the required separation to Moore Park Road and the functional requirements and footprint of the future stadium.

The proposed removal of 26 trees will be mitigated by the protection and retention of 100 existing trees within the site and immediate surrounds, which will be supplemented by significant additional landscaping and tree planting to be detailed in the Stage 2 Development Application. Importantly, Tree 125 (Moreton Bay Fig near Moore Park Road) which is identified on the City of Sydney's Register of Significant Trees, as well as six other trees identified as being of high priority for retention, will be retained and protected throughout the proposed development. This will

ensure that the public domain of the new stadium will benefit from the landscape character and values of a range of mature and high-value trees from the commencement of operations.

The Stage 2 Development Application will be accompanied by a Landscape and Public Domain Plan that identifies future landscaping including new tree planting within the site.

6.4.3 Design Excellence

As outlined in **Section 5.1.4**, in order to ensure that the future stadium achieves design excellence, this application seeks endorsement for an invited competitive design alternatives process that will apply to the detailed design that will be the subject of the Stage 2 DA. This process is outlined in the Design Excellence Strategy provided at **Appendix D**, which has been developed in consultation with, and to the satisfaction of, the NSW Government Architect and provides details of how design excellence will be addressed at each stage of the planning and development process to ensure a high quality architectural and public domain outcome.

The design excellence provisions of clause 6.21 of Sydney LEP 2012 apply to development involving the construction of a new building, as well as external alterations to an existing building, and seek to deliver the highest standard of architecture and urban design. The Concept Proposal and detailed Stage 1 demolition component do not seek development consent for the construction of a new building – these provisions will apply instead to the Stage 2 Development Application. Clause 6.21(5) requires a competitive design process to be held if the proposed development has a CIV over $100 million (amongst other triggers), and clause 6.21(4) outlines the factors that are required to be considered by the consent authority in determining whether a development achieves design excellence through the competitive design process.

In accordance with the provisions of LEP 2012, the application proposes to undertake a competitive design process. The City of Sydney Competitive Design Policy 2012 applies to land within the Sydney LGA and provides for the hosting of ‘architectural design competitions’ or ‘the preparation of design alternatives on a competitive basis’, and as such the proposed competitive process remains consistent with the Policy whilst still recognising the constraints on delivering infrastructure of this type and scale.

The design of a stadium is a highly specialised task that, by its nature, limits design variation and requires the development of bespoke solution for the detailed testing and delivery of a design (discussed further in **Section 6.5.3**). Namely, there are aspects of stadium design that provide limitations in the ability to develop unique design propositions including:

- the stadium bowl includes the field of play and the surrounding seating, and must be designed in accordance with strict dimensions to meet international sporting standards, ensure that the functional brief is achieved in terms of the number of seats required, and provide all seating with adequate views to the playing area in accordance with prescribed sightlines;
- circulation and access must be designed to meet standards for pedestrian comfort and the safe ingress/egress of patrons, which is essential to ensure the stadium can be evacuated in cases of emergency;
- the spatial and functional requirements for the servicing of stadia patrons, including match-day areas such as change rooms, food preparation areas, food and beverage sales points, toilet facilities and corporate and VIP spaces, as well as loading and servicing requirements; and
- the ability to develop multiple solutions for the functional design is compounded by the heavily constrained site, as the footprint of the future stadium is bounded by Moore Park Road in the north, Fox Studios in the east, Sydney Cricket Ground in the South and the Rugby League Central and ARDC buildings in the west.

A Reference Design is being prepared by Cox Architecture on behalf of Infrastructure NSW which will ensure that the functional requirements of the design brief for the new stadium are considered and adequately reflected in the stadium design and can be contained within the available site boundary. This reference design will form part of the brief to the design consortia participating in the Competitive Design Alternatives Process, reducing the need to expend resources on the core functional design process during the competitive process and permitting greater architectural focus to be placed on those aspects that contribute most to the architectural quality of the building and precinct within the functional constraints, including the stadium façade, materiality (internal and external) and the public domain.

The Stage 2 Development Application will be accompanied by a Competitive Design Alternatives Report that sets out the details of the competitive process, including details and assessment of each of the schemes and outlines the reasons for the selection of the successful scheme. The Stage 2 Development Application will also elaborate on measures outlined in **Section 5.1.4** to ensure that the design integrity of the successful scheme is maintained throughout the design development and construction process.

6.4.4 Public Art Strategy

The Urban Design Guidelines set out a Public Art Strategy which is based within the architectural and landscape context of the future site and which draws upon place-specific themes and principles to guide the delivery of public art as part of the project that will make a positive contribution to the quality of the place and the City's cultural landscape. Based upon the strategy, principles and objectives outlined in the Urban Design Guidelines, Infrastructure NSW will appoint an Advisory Committee and a public art curator/consultant to guide the artwork strategy, procurement process and selection of artists and artwork. This selection process will be undertaken utilising the development-specific criteria as well as those established under the City of Sydney Public Art Policy Criteria. Additional details regarding the development and progression of the public art strategy will be provided in the Stage 2 Development Application.

6.5 Environmental Amenity

6.5.1 Visual and View Impacts

Public views and vistas

A Visual Impact Assessment (VIA) has been prepared by Ethos Urban (**Appendix H**) to assess the visual impact of the Concept Proposal, in particular the maximum building envelope.

The VIA sets out a methodology for the assessment of visual impact, which includes:

- Identification of the visual character of the sites visual catchment
- Assessment of the visual effect of the proposal
- Assessment of the visual impact of the proposal
- Determination of the appropriateness of visual impact based on assessment against the planning framework
- Identification of any recommended mitigation measures required to ensure continued appropriate visual impact.

To support the visual analysis, 12 key public domain views from locations surrounding the site have been identified and photomontages prepared for these locations (refer **Figure 12**). These locations are

- Sydney Cricket Ground Gate A;
- Albert 'Tibby' Cotter Bridge;
- Anzac Parade Memorial;
- Intersection of Oatley Road and Renny Street, Paddington;
- Intersection of Moore Park Road and Poate Road, Paddington;
- Intersection of Land Road and Anzac Parade;
- Mount Steel lookout, Moore Park West;
- Duck Pond, Centennial Park (southern side);
- Intersection of Robertson Road and Oxley Lane;
- Loch Avenue, Centennial Park at the Parade Grounds;
- Intersection of Darley Road and Carrington Road, Queens Park; and
- Sydney Park lookout.

The photomontages have been prepared having regard to the NSW Land and Environment Court's Photomontage Policy to ensure that the imagery relied upon is accurate.

The photomontages provided represent the maximum building envelope as well as the profile of the reference design for the new stadium prepared by Cox Architecture. The intent of this is to provide an indication of the visual impact of the maximum envelope whilst also portraying the likely actual, lesser visual impacts of the final stadium design. The comparison between these two illustrates the nature of the maximum building envelope, as described in **Section 5.1.1**, as a 'loose-fit' envelope that provides capacity to accommodate a range of designs, but which is unlikely to be 'built out' to the full volume for which consent is sought. Accordingly, the visual impacts of the final detailed design are likely to be less than those assessed for the Concept Proposal.

The key findings of the VIA with respect to the potential visual impacts are summarised as follows:

- There will be some impact on close-range views obtained from the SCG due to the shifted and expanded stadium envelope, however these impacts are considered to be acceptable considering the intent of planning instruments, the role and continual evolution of the Moore Park sporting complex for large scale, organised sporting events and the presence of mediating elements between the viewer and the proposal ;
- There will be some impacts on medium-range views towards the site (e.g. Oatley Road) due to the higher maximum height of the building envelope, however these impacts are considered to be acceptable considering the intent of planning instruments, the role and continual evolution of the Moore Park sporting complex for large scale, organised sporting events and the presence of mediating elements between the viewer and the proposal;
- The proposal will not change the fundamental visual character of the visual catchment which is an urban landscape within a natural setting;
- The proposal will not affect or detract from views to or from Centennial Park; and
- Whilst the maximum building envelope will be more prominent within the broader visual catchment of the site compared to the existing SFS due to the larger maximum building envelope, the visual effect will be consistent with that of the existing SCG and SFS cluster which protrude above the tree line of Moore Park and acts as a landmark within the CBD periphery.

The Stage 2 Development Application will be accompanied by an updated Visual Impact Assessment which provides an assessment of the detailed stadium design.

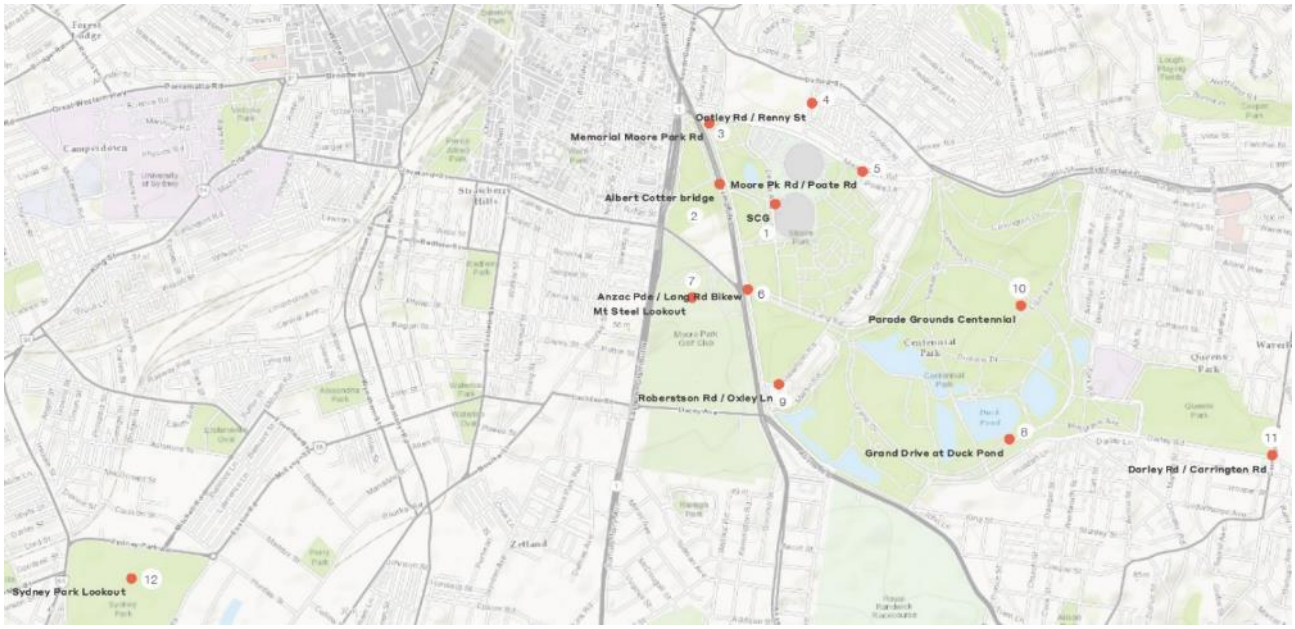

Figure 47 Viewpoints selection for visual impact analysis

Source: Ethos Urban

Private views

The existing stadium forms part of the cityscape of Sydney, being a prominent architectural building within the landscape that has a distinct cultural and entertainment purpose. Sitting together, the SCG and SFS are prominent in local and district views from most angles and approaches, subject to the fine-grain of local streets and urban development context. The stadia are most prominent in views from the south-east and east, where the lower topography and open parklands of Moore and Centennial Parks provide more open views to the stadia and the Sydney CBD beyond. The proposed redevelopment of the SFS has the potential to impact on private views in the following ways:

- demolition of the existing SFS will result in some potential short-term view gains where they are otherwise currently obstructed by the existing stadium structure;
- construction of the new stadium, which will be subject to a competitive design process to ensure architectural excellence and subject to further detail and assessment as the subject of a future Stage 2 Development Application, will be established as a new landmark within local and district views; and
- potential for some view gains and losses resulting from the shifting of the stadium footprint and increased height and scale of the new stadium, which will be the subject of a future Stage 2 Development Application.

The Concept Proposal seeks to establish a maximum building envelope that represents a 'loose-fit' envelope that provides flexibility for a range of design options that meet the functional and spatial requirements of a Tier 1 stadium. Accordingly, the maximum building envelope represents a worst-case scenario in terms of building massing that is unlikely to be realised in the actual stadium design. Accordingly, it is appropriate to undertake a qualitative assessment of the impact of the maximum building envelope at the Concept Proposal stage, which will be the subject of further detailed assessment and analysis at the Stage 2 Development Application phase once the stadium design has been determined.

In considering potential impacts on private views, the following steps are to be taken:

- Identification of the views to be affected, including the nature of the views (urban, district, water, iconic etc.) and the extent of the view available;
- Consideration of where the relevant views are obtained from within affected properties;
- Understanding the extent of potential impacts arising from development in qualitative manner; and
- Determining the reasonableness of the proposal which has given rise to any potential view impacts.

As illustrated in **Figure 48**, the main private residential views towards the site are those taken from:

- **Moore Park Road and Paddington**: Development along the immediate site frontage to Moore Park Road is generally low in scale (typically two to four storeys), with views to the site often fully or partially obstructed by existing vegetation, the ARDC building and other existing development within the locality. These views are generally limited to the exterior of the stadium façade and public domain, with little in the way of district views due to the low-rise nature of where the views are obtained from. Within the broader locality of Paddington to the north of Moore Park Road, which is low-scale in nature, the views to the site and beyond are generally obscured by other development and vegetation.
- **Precinct surrounding Cook Road, Centennial Park**: Cook Road is approximately 900 metres away from the site's eastern boundary, and sits higher in the local topography than the subject site. Buildings along Cook Road tend to be of a higher scale than other development within the vicinity of the site, comprising of mostly residential apartment buildings typically ranging in height between four and eight storeys. West facing apartments within these residential buildings benefit from views over the Fox Studios site toward the stadium, and in some instances to the Sydney CBD beyond.
- **District views – Waterloo, Bondi Junction, Queens Park and surrounds**: The existing stadium, together with the SCG, sits as a feature within existing district views obtained from higher perspectives in the broader district. These views are typically obtained from dwellings over one kilometre away from the site, with the SFS comprising just one aspect of broader district views.

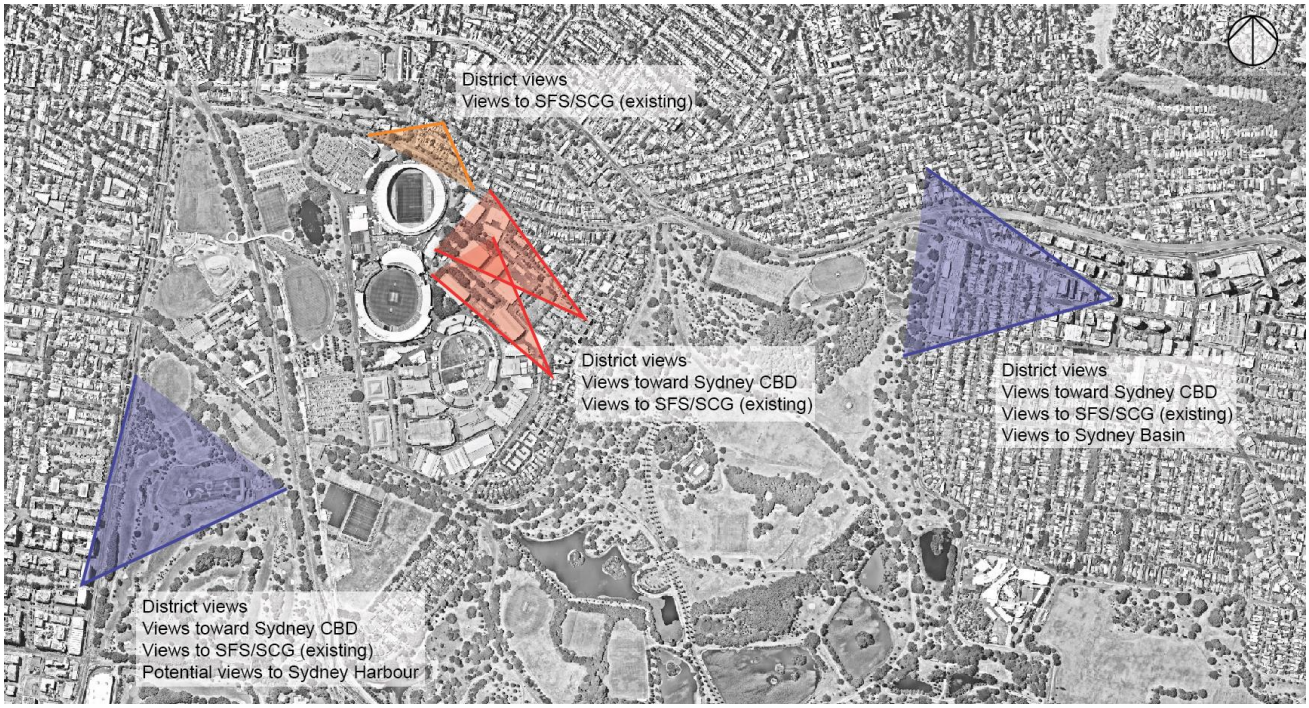

Figure 48 Identification of existing private views to the Sydney Football Stadium site and surrounds

The visual catchment of the site is broad, so it is reasonable to assume that views are taken from a wide variety of locations in private dwellings including bedrooms, living rooms, kitchens and balconies. In the immediate vicinity of the site, it appears that the majority of views from dwellings along Moore Park Road would be more likely to be from bedrooms or entrances rather than living rooms, given the southern orientation of these windows toward a main road.

The extent of the impact of the proposed development will be heavily influenced by the final stadium design, particularly in relation to the structural and architectural design of the final roof form. The maximum building envelope established under the Concept Proposal is considered to be a 'loose-fit' envelope which provides flexibility in this detailed design. The primary impacts on private views arising from the Concept Proposal are considered to be:

- Moore Park Road and Paddington:
  - Minor view impacts to private views associated with the increase in the maximum height and extent of the building envelope compared to the existing stadium, resulting in some reduction in the extent of sky views, noting that this will be subject to detailed design.
  - Improvements to private views compared to the existing stadium arising from the increased separation between the new stadium and Moore Park Road.
  - Improvements to private views compared to the existing stadium arising from significant enhancements to the architectural and design quality of the stadium's external façade as a result of the competitive design process to be followed in accordance with the Design Excellence Strategy.
- Cook Road precinct:
  - Minor/moderate impacts to private views arising from an increase in the size of the stadium, which will result in changes to a part of existing private views to the district and Sydney CBD skyline.
  - Improvements to private views arising from significant enhancements to the architectural and design quality of the stadium's external façade as a result of the competitive design process to be followed in accordance with the Design Excellence Strategy.
- District views:
  - Minor/moderate impacts to private views arising from an increase in the size of the stadium, which will result in changes to a part of existing private views to the district and Sydney CBD skyline.

- Improvements to private views arising from significant enhancements to the architectural and design quality of the stadium's external façade as a result of the competitive design process to be followed in accordance with the Design Excellence Strategy

As outlined in the Heritage Impact Statement prepared by Curio Projects (**Appendix L**) and discussed further at **Section 6.9**, the SCSGT precinct has a long history of use and infrastructure development and improvements to support the hosting and viewing of major sporting events. The development of a new stadium in the position of the existing SFS in order to meet the current and future sporting and event requirements of Sydney is consistent with the history and purpose of this precinct, and it is entirely reasonable to expect that over time the existing infrastructure will be improved and expanded to meet evolving requirements for sports events within a global city. The NSW Stadia Strategy identifies the redevelopment of the Sydney Football Stadium as a Tier 1 stadium as a key priority in ensuring that the State's sporting infrastructure continues to meet the needs of the community and is capable of attracting major national and international sporting events. The City of Sydney's LEP 2012 specifically zones the site as being for major recreational facilities, including sports stadiums, which are attended by large numbers of people, and does not prescribe any maximum building height control. The project is consistent with all applicable planning controls and standards. Having regard to this, it is considered that this Concept Proposal for the redevelopment of the SFS is entirely reasonable from a private view impact perspective.

Having regard to the above, it is considered that whilst the redevelopment of the SFS has the potential to result in some impacts on private views, these impacts would generally be only minor or moderate and are reasonable in the particular circumstances of the site noting that the Concept Proposal represents a maximum envelope, and not the actual impacts of the final stadium design. The Stage 2 Development Application will be accompanied by a further private view assessment based upon the actual stadium design.

6.5.2 Overshadowing

Figure 49 (detailed further at **Appendix C**) outlines the overshadowing arising from the maximum building envelope during the winter solstice. This scenario represents the worst case shadow impacts – the loose-fit, maximum envelope within which the future stadium building will fit, assessed at the time of the year when shadowing is greatest. This assessment demonstrates that even in the worst-case scenario, the impacts of overshadowing are relatively minor. No residential dwellings will be impacted by shadowing from the maximum envelope during the study period of 9am to 3pm. Overshadowing of public open space within Moore Park to the west is confined to a short period between 9am and 10am. After 10am the shadow cast from the maximum building envelope beyond the site boundary is contained to the roadway of Driver Avenue and eastern footpath only, and no shadows are cast on Moore Park.

The stadium envelope does not give rise to any additional overshadowing of the playing field within the SCG, with the envelope designed to ensure that new shadows sit within those already cast by the Bradman Noble Stand and other SCG stands. The proposed envelope will result in some additional overshadowing of the Fox Studios site between 1pm and 3pm, however, this is considered to be acceptable given that the shadows are generally confined to rooftops of buildings and roadways, and that the proposed shadows are generally consistent with those cast by the existing stadium in this location.

The shadow diagrams also demonstrate that the public domain areas to the north of the stadium will achieve a high level of sunlight throughout the day, benefitting from the northerly aspect along the Moore Park Road. Similarly, the Driver Avenue entrance plaza will benefit from a high level of sunlight and minimal overshadowing from midday onwards. This afternoon period aligns with the majority of major daytime sporting events, when this plaza will be most heavily used.

Having regard to the above, the proposed maximum envelope is not considered to give rise to any unacceptable overshadowing impacts on existing or future public domain areas or adjoining properties.

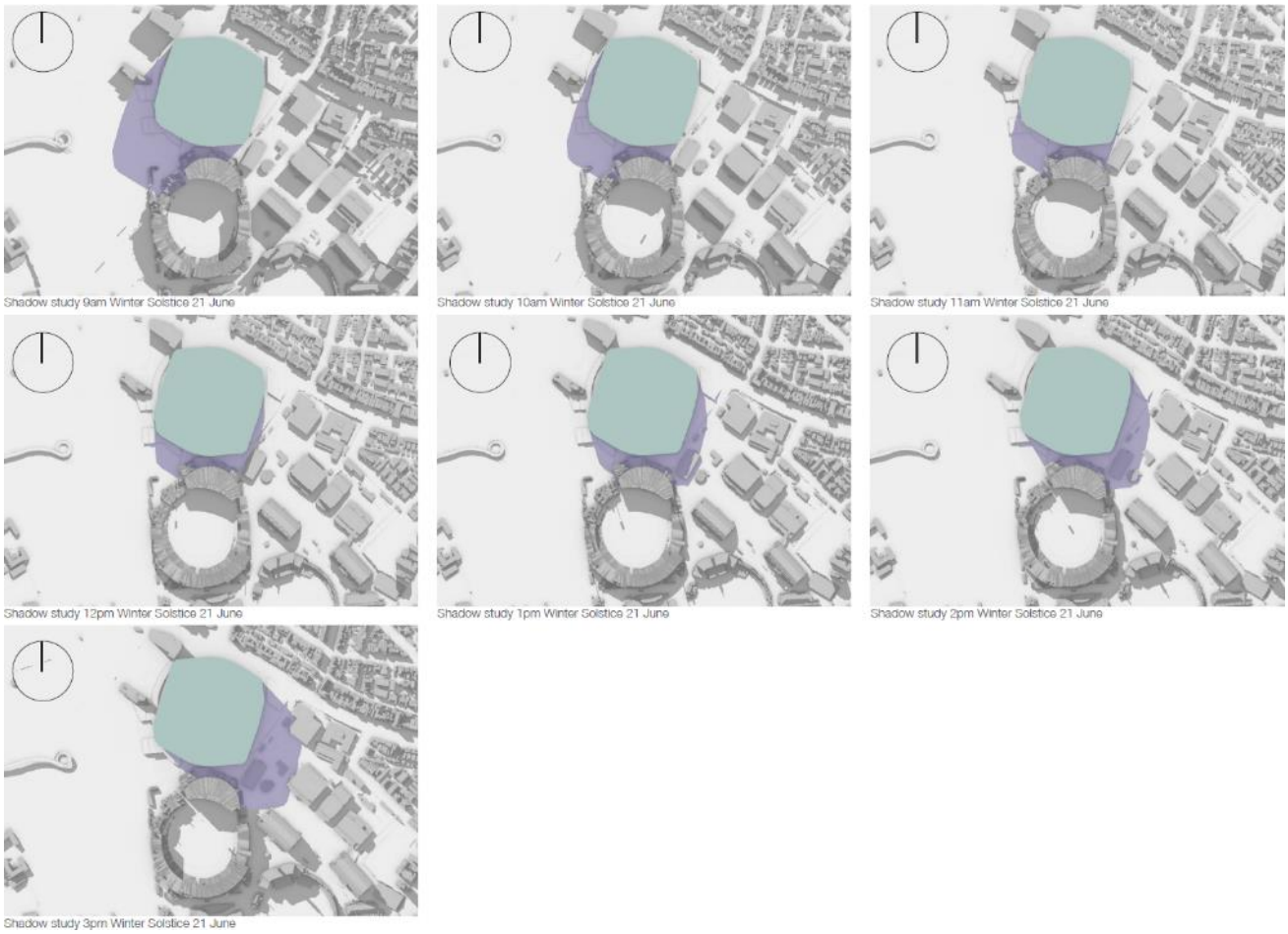

Figure 49 Overshadowing diagrams for winter solstice

Source: SJB Urban Design

6.5.3 Wind Strategy

A Wind Engineering Design Brief has been prepared by Arup (**Appendix I**) which sets out the design and engineering considerations to inform the detailed design of the future stadium in order to mitigate potential wind impacts on the pedestrian and patron environment.

The strategy sets out the details of the prevailing wind and rain environment within the Sydney climate drawing on available baseline data, details wind criteria for different pedestrian environments and functions, and outlines the different wind flow patterns that are expected to arise from the future stadium design. The generally rounded form of the future stadium will encourage wind flows to pass vertically and horizontally around the stadium structure, meaning that significant downwash is not anticipated within the public pedestrian environment of the stadium's immediate surrounds. Wind flows within the stadium will be highly dependent on the final stadium design, including the roof form and structure as well as any openings within the stadium bowl. The close proximity of the new stadium to the existing SCG is expected to cause wind interference effects, and the pedestrian wind environment within the ground plane at the nearest interface (in the vicinity of the Bradman Noble Stand) will require further consideration and potential mitigation for easterly and westerly winds once the detailed design is prepared.

The Wind Engineering Design Brief does not identify any significant concerns that would impact upon the Concept Proposal, and a detailed Pedestrian Wind Environment Study including wind tunnel modelling will be prepared and submitted within the Stage 2 Development Application based upon the detailed design. This is confirmed in the Mitigation Measures outlined in **Section 8.0**. The Study will establish appropriate criteria for wind comfort and provide an assessment of the stadium and site's predicted performance.

6.5.4 Lighting and Shading Measures

The Urban Design Guidelines prepared by SJB Urban Design (**Appendix C**) set out principles to ensure that the future detailed stadium and public domain design includes appropriate lighting for safe public access and local amenity and shading to provide relief for patrons during warmer periods and to reduce the urban heat island effect.

The provision of shading via new plantings has been considered in the guidelines for the public realm and landscaping, with the promotion of soft landscaping and tree planting, as well as the retention of significant existing shade trees such as Tree 125, playing a significant role in mitigating potential effects of heat. Section 7.9 of the Urban Design Guidelines states that the future detailed design should "*maximise elements that reduce the heat island effect. These include light coloured surface finishes, vegetation, shading, water bodies and open-grid paving systems*". These principles will inform the Design Excellence Process and final Landscape and Public Domain Plans which will accompany the Stage 2 Development Application.

The existing lighting within the precinct lacks consistency, and the Urban Design Guidelines seek to ensure that new lighting to be provided within the site supports clear and safe wayfinding during both event and non-event periods. Infrastructure NSW and SCSGT will also continue to collaborate with the Centennial and Moore Park Trust and the City of Sydney to ensure that new lighting provided as part of the new stadium facilitates better integration, wayfinding and safety within the surrounding precinct. Floodlighting for the future playing pitch will be integrated into the new roof structure, similar to the existing stadium design, reducing the potential for light spill and potential impacts on the amenity of the surrounding locality including Paddington and Moore Park. The Stage 2 Development Application will include a Lighting Plan that details the location and nature of lighting to be provided within the public domain of the future stadium, including an assessment of the potential for light spill and amenity impacts.

6.5.5 Visual privacy

The direct interface between the subject site, the existing SFS and the new stadium to residential dwellings is limited to those dwellings located along Moore Park Road to the north. These dwellings address Moore Park Road, which is a main vehicular and pedestrian thoroughfare connecting the eastern suburbs and southern CBD, and therefore generally incorporate measures to maintain visual privacy within their southern elevations. Dwellings further to the north, within the suburb of Paddington, are sufficiently distant from the site such that there would not be any direct visual interface that would give rise to privacy impacts (e.g. Leinster Street to the north is approximately 90 metres distant from the existing stadium). There are no residential dwellings to the west or south of the site, and the nearest dwellings to the east are located beyond the Fox Studios site, which is more than 200 metres.

The existing stadium has limited direct visual interface with dwellings to the north, with the stadium structure oriented inward to reflect the stadium's functional purpose of providing viewing spaces for the playing pitch. It is expected that the new stadium will be of a similar nature, with minimal opportunities for direct visual interfaces with nearby residential dwellings. Accordingly it is considered that the Concept Proposal does not give rise to any visual privacy issues, however, visual privacy will still be considered further as part of the Stage 2 Development Application upon resolution of the detailed stadium design.

6.6 Transport and Accessibility

A Transport Assessment Report has been prepared by Arup (**Appendix J**) to assess the potential impacts of the proposed development on the surrounding transport network, both as a result of the Stage 1 works and the expected future operation of the stadium. At a high level, it is emphasised that the project involves the replacement of an existing stadium with a new stadium with generally the same patron capacity, and that existing arrangements for major event transport will continue to operate to support anticipated levels of crowd attendance within an established event management and operational framework. Vehicular and pedestrian access arrangements will be maintained or improved by the new stadium.

6.6.1 Operation

The Transport Assessment Report considers the operational transport impacts and parameters of future development in accordance with the Concept Proposal, based on an assessment of the future stadium in a number of operating scenarios including for half-occupancy sporting events (22,500 seated plus staff), peak sporting events (45,000 seated plus staff) and concerts (55,000 plus staff).

Parking

As outlined in **Section 3.2.2**, the MP1 car park is the only parking provided within SCSGT land for use by patrons (members only) and provides approximately 600 spaces. These spaces will be reinstated upon the completion of demolition and construction activities to facilitate the operation of the future stadium. It is not proposed to increase parking provided for patrons within the site above the current level for the following reasons:

- Increasing the provision of car parking accessible for patron use is likely to induce additional usage of private vehicles for travel to the stadium during events, resulting in increased congestion within the local traffic network and environmental costs;
- The provision of additional car parking would be incompatible with existing City of Sydney policies to reduce private car usage within the Central Sydney area;
- Additional car parking would require the provision of multi-deck or below-ground car parking, which would result in significant additional costs to the delivery of the project;
- Existing public transport arrangements, supplemented by the future commencement of the CBD and South East Light Rail and emerging point-point transit systems, perform to a reasonable level of service during existing major events including double-headers; and
- The new stadium will provide improved facilities for active travel, particularly cycling, and will seek to better integrate with existing and future pedestrian linkages to encourage walking from surrounding areas including Central Station, Surry Hills and Paddington.

Approximately 40-50 spaces will be provided within the internal ring-road/basement area of the new stadium, providing parking for stadium staff and hirers (teams, medical staff, officials etc.) within a secure environment. These parking requirements are generally currently accommodated within the MP1 car park. Additional basement car parking for general use by patrons is not proposed for the reasons outlined above, as well as due to security requirements for the stadium and the potential for conflict between additional vehicular movements within the precinct and pedestrians during events.

In addition to the car parking currently provided within SCSGT lands, approximately 2,000 permanent (Entertainment Quarter) and 2,850 temporary (EP2 – Kippax, EP3 – Showground, Sydney Boys & Girls High School) car parking spaces are provided within the vicinity of the stadium to cater to events. These car parking facilities are not provided by or controlled by the SCSGT, but rather are operated by their respective owner/administrator in coordination with the event profile of the stadiums. No changes to this relationship are proposed. Whilst it is noted and acknowledged that the Moore Park Master Plan 2040 provides for the removal of on-grass car parking at EP2 and EP3, the Master Plan makes clear that this removal will be progressive, occur over the medium and long-term and will only occur where increased access via other transport modes and/or additional car parking is provided in alternative locations, to be explored further via a stakeholder working group. Infrastructure NSW and the SCSGT will continue to liaise with the Centennial and Moore Park Trust to ensure that suitable parking and transport arrangements are put in place to ensure that there are no adverse impacts on the functioning of the stadium precinct.

Travel Demand

Travel demand is a measure of the available capacities of various transport modes in the hour prior to the start of the event, noting that surveys of the existing demand for the site determined that 70% of people arrived at the stadium during this period. Travel demand is shaped by the type of event being held; typical event (half capacity stadium), peak event (full stadium), and a double header (two peak events occurring within the precinct). The impacts of the future stadium on the demand for different modes of transport during each of these scenarios is discussed in the following sections.

Pedestrians

A key outcome of the SFS redevelopment is to create a more permeable and accessible site. Whilst the full extent of public domain improvements and the final design of the stadium are the subject of a separate and future application, the overall accessibility of the site will be improved. The Urban Design Guidelines ensure that more space will be provided for pedestrian access/egress and circulation through the site.

External to the site, Arup noted that the revitalisation of Devonshire Street as part of the light rail development will enhance the key pedestrian route to/from the stadium including a widened footpath, enhanced wayfinding, and grade-separated crossings of South Dowling Street and Anzac Parade. This will reduce pedestrian demand along Foveaux Street and congestion at key 'pinch-points' at the intersections of Moore Park Road / Flinders Street / Anzac Parade.

Private Vehicles

The proposal does not seek to increase the capacity of the stadium, nor the capacity of existing patron car parking, and as such the redevelopment will not generate any additional traffic. Whilst there may be a small increase in staff numbers associated with the new stadium (subject to Stage 2 Development Application), due to staff travelling outside of the patron peak periods this is not expected to impact upon peak traffic levels. Arup further note that traffic in the road network is expected to reduce in the medium to long term, as:

- the light rail line under construction will offer a new, direct transport option and will create an improved transport and walking experience once it is operational;
- the stopping of dedicated bus routes at the commencement of the light rail line will reduce the number of vehicles on the road network surrounding the SFS, and improve the flow of traffic at surrounding intersections; and
- the greater promotion of sustainable transport modes in the detailed design and operation of the stadium will encourage their uptake.

Consistent with the existing operation of the stadium, it is recommended that Traffic Management Plans continue to be developed in consultation with key stakeholders like the NSW Police prior to special events occurring, to manage vehicle and pedestrian movements before, during and after events.

Cycling

As discussed in **Section 0**, the site is located at the junction of key local and regional cycle routes that offer safe and direct pathways in each direction to the site. Whilst cycling does not represent a significant proportion of the mode share attributed to the existing stadium, the redevelopment will seek to take advantage of existing cycle routes and promote the uptake of this mode of transport through increasing the number of parking spaces and end of trip facilities, improving wayfinding and investigating unique initiatives like valet bicycle parking. External improvements to cycle routes including a new separated bike path on Moore Park Road (subject to City of Sydney design, planning, approvals and delivery) and upgrades to facilities within Moore Park will also assist in meeting this goal.

Taxis and Rideshare

Taxi and rideshare services represented a significant proportion of people travelling to the SFS, and this mode-share has increased with the growth of new point-to-point rideshare services, and as such the redevelopment will need to accommodate for current and future demand. This can be achieved through:

- retaining existing drop off and pick up points and exploring opportunities to better integrate these facilities into the new stadium design and operational overlay;
- seeking to use the Anzac Parade kerbside and the Moore Park Road kerbside, outside of commuter peak hours, for use as a pick up/drop off zone subject to further trials and approvals in conjunction with RMS/TfNSW; and
- consulting with surrounding neighbours to provide potential supplementary pick up/drop off areas within the Entertainment Quarter and other car parking areas.

Public Transport

To determine the demand for public transport, and the potential impacts of the stadium, consideration has been given to the adequacy of public transport in the area and initiatives for the future stadium to integrate with public transport and encourage its use.

- **Light Rail** – the site will benefit from a new light rail stop on the eastern side of Anzac Parade, which will be accessible via a separated crossing. It forms a key connection between the heavy rail network (Central Station) and the stadium, can accommodate for up to 14,000 passengers per hour during special events. This capacity will be able to be supplemented by special event shuttle buses from Central Station and other locations to cater to the anticipated event size.

- **Bus** – operating direct and specific bus routes from Central Station to the site is expected to cease with the opening of the new light rail line for smaller events, unless TfNSW seek to supplement the light rail network during double headers or other major events with shuttle buses. It is noted that the bus loop will be retained for use by shuttles, and that the existing bus lane parallel to Anzac Parade will also be retained and used by regular bus services.

Access

As discussed in **Section 0** and above, the site and surrounding precinct is highly accessible through a range of transport modes that the future design and operation of the centre will seek to improve and capitalise on. Access to the site via vehicle bicycle, walking, public transport and taxi and rideshare will either be improved or maintained as result of the redevelopment.

Access arrangements for service and emergency vehicles will formalise the existing use of Paddington Lane to access the site during events. Management strategies are already in place to manage the interaction between pedestrians and vehicles on Paddington Lane, and these would remain in force in future.

6.6.2 Demolition Traffic, Access and Management

Arup have prepared a preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) (**Appendix J**) for the demolition works on site, to assess the proposed access and operation of construction vehicles and their potential impact on the surrounding area. The contractor, once appointed, will prepare a detailed CPTMP prior to the commencement of works.

Pedestrian Access

As the SCG will be used throughout the redevelopment, it is essential that access is maintained to this area while works are underway on the site. This will involve ceasing works on site during major events, enclose the construction area and identify all alternative pedestrian routes with signage, and manage access/egress locations with a qualified traffic controller to avoid conflicts with heavy vehicles and ensure pedestrian safety. No works zones are identified in the surrounding road network and as such all footpaths will be maintained.

Public Transport Services

Arup advise that public transport services will not be impacted by construction traffic as the work is confined to within the site, the traffic generated by the proposed works is minimal and manageable. The construction routes have also been developed to avoid key bus corridors wherever possible.

Parking

As outlined in **Section 5.2.3**, none or only minimal parking will be provided on site for workers during the demolition phase. Based on the maximum on-site workforce of 30 personnel during the Stage 1 Demolition period, it is expected that the impacts of construction workforce parking on the local street network will be minimal. Workers will be provided with information to maximum utilisation of public transport and active travel, encouraged to car-pool and park away from local residential streets. On-street parking along Driver Avenue and public car parking within the Entertainment Quarter are considered to have more than sufficient capacity to meet the requirements of the workforce.

The temporary closure and use of the MP1 car park is not expected to result in any significant impacts on local parking, as the majority of the utilisation of this car parking is by members visiting the Stadium Club and staff/visitors to the Sheridan Building, Roosters Building, Waratahs Building and Cricket NSW building, all of which will be demolished as part of the Stage 1 Demolition package of works. Parking is provided within the ARDC and Rugby League Central buildings. Any overflow parking demand for these two retained buildings can be accommodated along Driver Avenue and within the Entertainment Quarter without any significant impacts upon on-street parking within Paddington.

Traffic Generation

The initial stages of the development, involving readying the site and demolishing structures, are expected to generate in the order of 5 light vehicle movements a day and up to 40 heavy vehicle movements a day. This represents a traffic generation rate of less than 10 vehicles per hour, which Arup confirms is minimal in the context

of the established road network. The use of the MP1 car parking during the proposed Stage 1 works will also reduce the quantum of vehicles seeking to access the site, resulting in a potential net reduction in traffic.

Arup further note that the overlap of the proposed Stage 1 works with the construction of the light rail and cycle path on Moore Park Road will be minimal and will not result in significant cumulative impacts. The appointed contractor will be required to engage in ongoing consultation with Transport for NSW (Sydney Coordination Office) during the construction period.

Vehicular Access

The heavy vehicle access arrangements outlined in **Section 5.2** will ensure that access to and from the site occurs predominately using major, multi-lane roads and that heavy vehicles will not traverse through local streets in order to access the site. These routes will be communicated to all contractors and sub-contractors involved in the demolition phase in order to ensure that these protocols are adhered to.

6.7 Noise and Vibration

Arup have completed a Noise and Vibration Impact Assessment (**Appendix K**), to identify and provide a quantitative and qualitative assessment of the main noise and vibration generating sources produced during the demolition and operation of the stadium. As the final design and construction of the stadium is the subject of a separate and future Stage 2 Development Application, the assessment outlines mitigation and management strategies that will be used to shape the final design and operation of the stadium.

6.7.1 Noise Environment

The site is located on the periphery of the CBD and is surrounded by a mix of homes, businesses, open space, and various other educational and community uses. The density of these surrounding land uses and the scale of the site requires the surrounding environment to be classified into Noise Catchment Areas (NCAs) that accommodate groups of receivers with similar Rating Background Levels, as shown in **Figure 50** below. These NCAs were subject to both long-term and short-term noise monitoring (**Figure 51**) to understand the prevailing ambient environment at the nearest potentially affected receivers and to establish relevant noise criteria. Arup determined that the general noise environment is characterised by traffic from Moore Park Road and Anzac Parade, the ‘urban hum’ of the CBD, aircraft noise, and general activities from the use of existing facilities in the sporting and entertainment precinct.

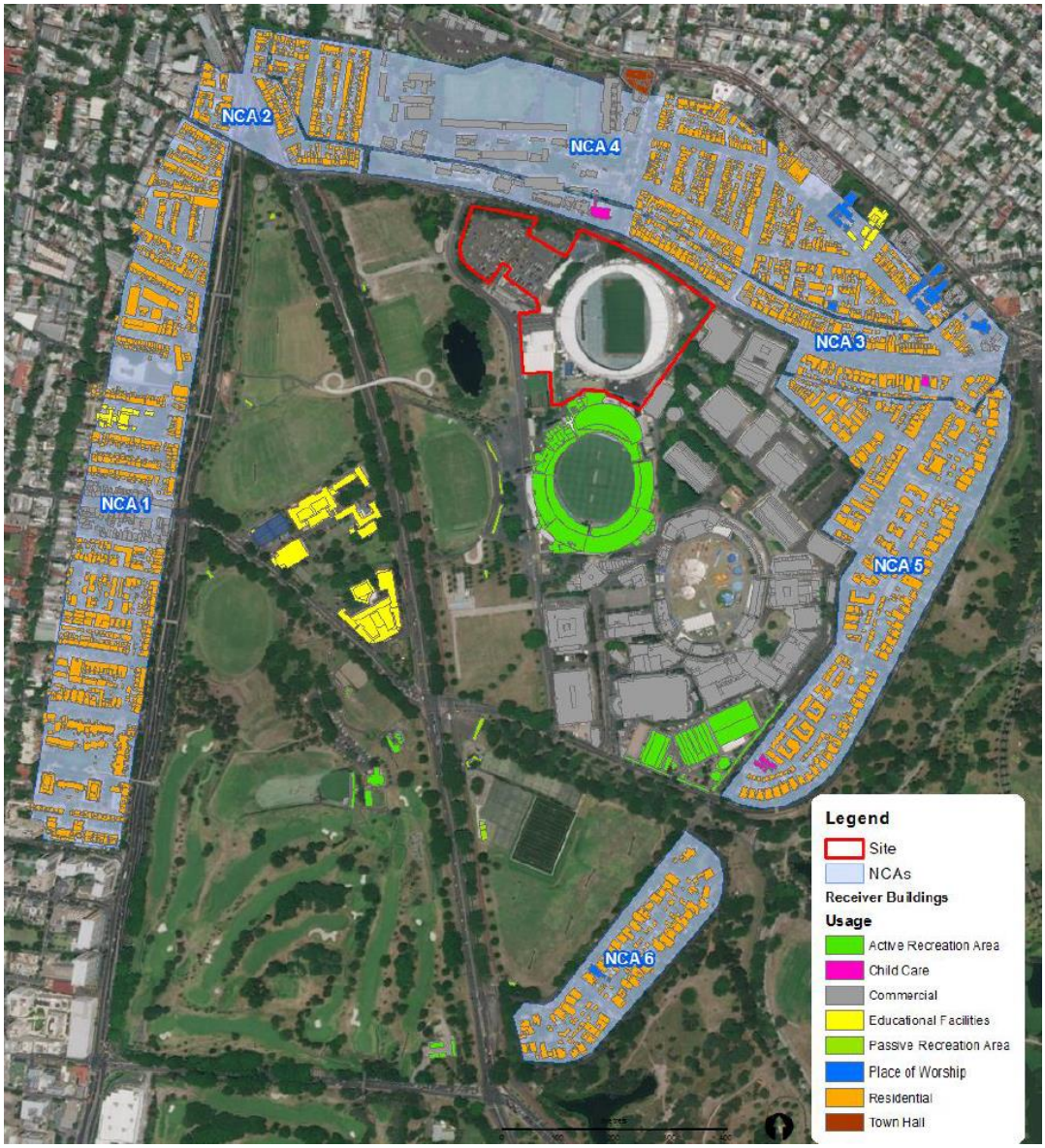

Figure 50 Noise catchment areas surrounding the stadium

Source: Arup

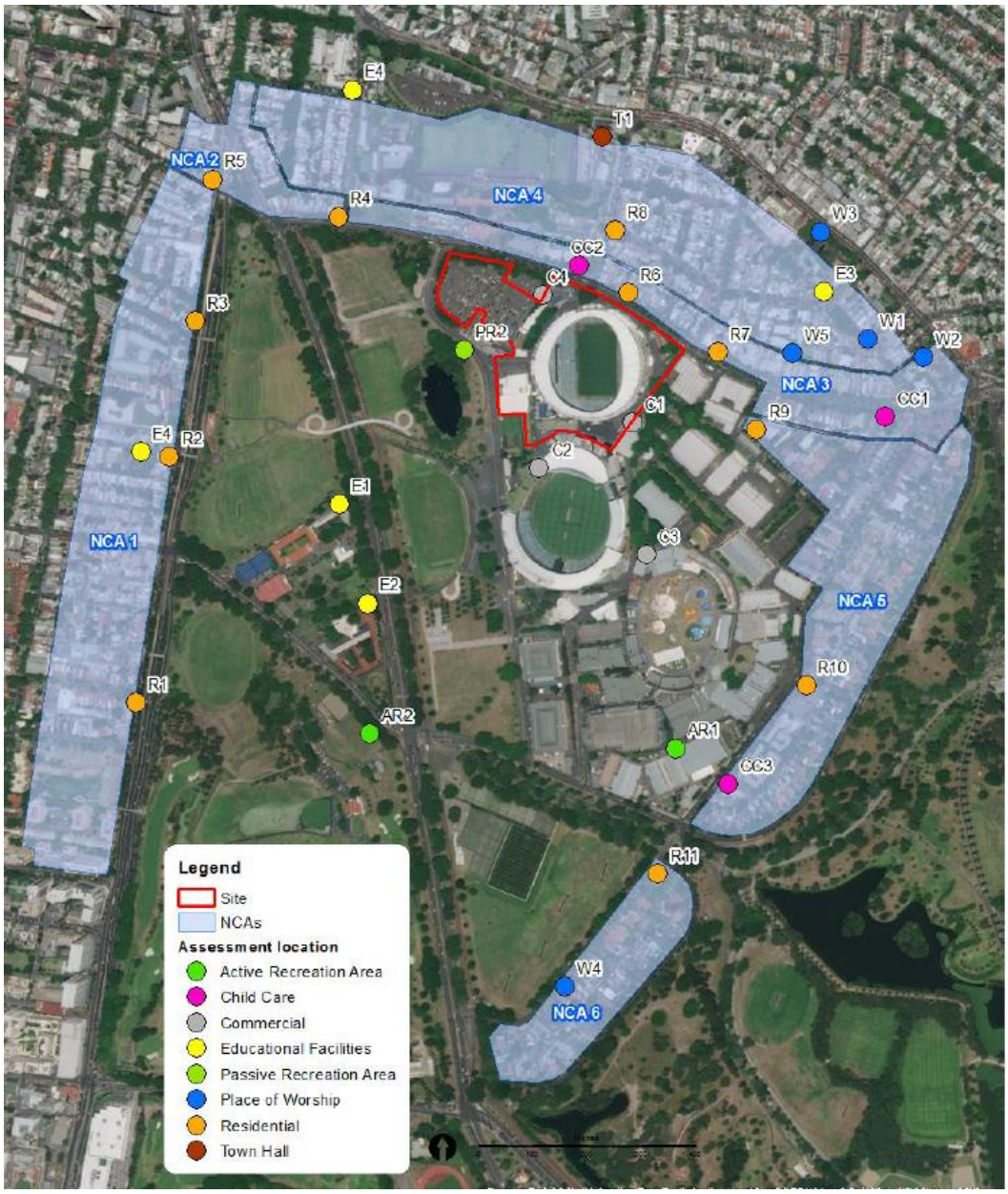

Figure 51 Noise monitoring locations

Source: Arup

6.7.2 Construction Noise

A noise emissions criteria has been established by Arup with consideration of the program of works for the site, the noise monitoring results captured for the NCAs, and with consideration of the relevant noise policies and guidelines. The predicted noise emissions were then modelled based on the criteria, to determine the potential impacts of construction and demolition activities occurring on the site.

The modelling confirms that the period with the highest potential to impact surrounding receivers and breach the noise criteria is the initial demolition phase, whereby noisy equipment such as excavators, rock breakers and concrete crushers will be used. In order to provide a conservative assessment, this modelling assumes that all machinery would be operating simultaneously, which is unlikely to occur in practice and would be considered to be the worst-case. In some instances during this period, noise emission will exceed the criteria by up to 9dBA in the worst affected areas along Moore Park Road and in Paddington. These exceedances are temporary and do not represent significant breaches of the criteria, meaning that no surrounding residences are classified as being highly affected. The longer-term construction of the future stadium on site is expected to meet the criteria in every location,

and no works are planned to occur between 7pm and 7am, ensuring that the proposal does not breach the sleep disturbance criteria for surrounding residences.

In order to mitigate and minimise the identified potential impacts on surrounding receivers, Arup have developed a series of recommendations that will be implemented when developing the detailed Demolition and Environmental Management Plan for the site and when completing works on the site. These have been considered in the Mitigation Measures outlined in **Section 8** of this report.

6.7.3 Construction Vibration

Vibration generated by construction and demolition works have the potential to impact the structure or appearance of surrounding buildings, including the SCG, ARDC building, Rugby League Central and Fox Studios. Accordingly, Arup have considered the works occurring on site against relevant international standards and guidelines, and have established minimum working distances between construction zones and surrounding receivers when undertaking high intensity works such as rock breaking. Rock breaking activities have the greatest potential to give rise to vibration impacts in terms of cosmetic damage and human response, and will be required to be managed within the site so as to minimise impacts on nearby sensitive receivers. In the event that works are required within the minimum working distances, vibration monitoring at the nearest affected building will be undertaken. Dilapidation surveys will also be undertaken for heritage items and buildings within the minimum working distances of identified activities so as to identify and rectify any vibration impacts. Potential vibration impacts on Busby's Bore are discussed at **Section 6.9**. A Construction Noise and Vibration Management Plan will be prepared prior to the commencement of works and form part of the Demolition and Environmental Management Plan, as outlined in the mitigation measures set out in **Section 8.0**.

6.7.4 Operational Noise During Events

At a broad level, the redevelopment of the existing SFS will result in the replacement of an existing stadium with a capacity of approximately 45,000 seats (55,000 patrons in concert mode) with a new stadium of similar capacity. The existing SFS is not limited in terms of the number of sporting events able to be held, except in respect of concerts where the existing limitation is proposed to be maintained. The existing saddle-shaped and open-sided roof of the stadium provides minimal noise containment, allowing for a high level of noise spillage from the stadium to surrounding noise receivers located outside of the site. Whilst the final design of the new stadium has not been resolved, and will be the subject of further detailed design and assessment as part of the Stage 2 Development Application, it is expected that the new stadium structure will provide a higher level of noise attenuation than the existing stadium by providing a greater level of physical enclosure through the northern and southern stands. Based upon a similar operating profile and an improvement in nose attenuation, it is expected that noise impacts arising from future stadium operations will be no worse than, and likely better than, the existing situation. Notwithstanding this, Arup have adopted conservative assumptions in order to account for a range of potential future stadium designs.

An assessment of the potential noise generated during events, including amplified music and announcements and crowd noises, has been conducted by Arup against project-specific noise criteria the existing noise policy for the stadium, being the *Sydney Cricket Ground and Allianz* [SFS] *Stadium Noise Management Plan* 2017. This Management Plan outlines the noise management measures, monitoring procedures, and processes for handling complaints, and applies to events and the set up and breakdown of events. It has been used as the baseline for assessing the modelled noise emissions to surrounding receivers during events.

Modelling of events in the stadium has been completed with the following assumptions:

- the roof is not included as a conservative assumption that this element is completely acoustically transparent and provides no shielding effect;
- the sound systems for concerts has been modelled using three different configurations, locating speakers on the north, centre, and south of the field;
- crowd noises have been modelled as originating from all tiers of the stadium; and
- there is no change to event operations, including the existing time limits for sporting, concert and other events as follows:
    - sporting events are not to occur before 8am and after 10:30pm;
    - concerts are not to occur before 10am and after 10:30pm, with a maximum duration of 5 hours;
    - sound tests and rehearsals are not to occur before 10am and after 7pm;

- other outdoor events preceding workdays are not to occur before 10am and after 8pm; and
- other outdoor events preceding weekends or public holidays are not to occur before 10am and after 10:30pm.

The modelling confirms that noise impacts are not expected to increase as a result of the redevelopment, and as such no significant acoustic impacts are expected. The noise emitted during sporting events is expected to be largely similar or less than the existing ambient noise levels. The noise emitted during concerts are generally within 5dB of ambient noise levels during the day from road traffic, and 10dB during the night. It is noted that the maximum noise emissions comply with the established noise criteria at every location during concert events, when speakers are facing south. Alternative speaker locations are therefore not recommended without prior noise monitoring and testing occurring at the nearest receivers on Moore Park Road.

6.7.5 Other Operational Noise

Potential noise generated by the stadium, notwithstanding events, would comprise mechanical plant and equipment, staff car parking activities, the operation of the loading dock on site, and the collection of waste and recycling. Because the detailed design of the stadium and associated services has not been determined at this Concept DA stage, Arup cannot accurately assess these components of the stadiums design and operation. It is recommended that the future Stage 2 Development Application examine these ancillary operational noise sources and detail associated mitigation and management strategies.

6.8 Construction Management

Aver have prepared a Construction (Demolition) Management Plan (**Appendix E**), which is supplemented by other technical studies noise and vibration, ESD, and traffic and parking discussed elsewhere in **Section 6**. The Construction (Demolition) Management Plan (CMP) relates to the Stage 1 works, with the future construction of the stadium to be assessed in a separate and future CMP accompanying the Stage 2 SSD DA.

The CMP details:

- the construction planning and staging for the demolition of structures on the site, including any road closures and crane locations;
- site hoarding locations and overall site establishment;
- the deliveries and materials handling strategies;
- the Environmental Health & Safety management approach to be adopted;
- waste management strategies to be adopted;
- stormwater and erosion control measures to be implemented;
- noise and vibration management (in accordance with the separate assessment by Arup);
- air and water quality management;
- traffic, parking and pedestrian management (in accordance with the separate assessment by Arup); and
- a complaints management process to be adopted during construction.

6.8.1 Demolition Waste Management

Refer to **Section 6.12**.

6.8.2 Construction Traffic and Parking

Construction traffic and parking for contractors and workers has been discussed in **Section 5.2.3** and **6.6**. The CMP formalises the recommendations of this assessment and further details how vehicles will be managed during this initial demolition process.

6.8.3 Air Quality and Dust Control

Whilst odour problems are not associated with this type of work and are expected to be negligible/minimal, dust emissions are expected to occur as a result of the proposed Stage 1 works with the main cause of this being

concrete crushing. The CMP accordingly nominates mitigation methods be implemented where practical to avoid dust generation, including both on-site practices such as limiting or ceasing crushing activities or enacting other dust suppression measures when there are high winds (>30 km/h). That and physical measures such as erecting screens and barriers around dusty activities. It is anticipated that with the application of the mitigation measures, sensitive receptors in the vicinity of the development will not experience significant air quality impacts as a result of the proposed works.

6.8.4 Noise and Vibration

The potential for noise and vibration generated by the proposed works, and specific mitigation measures to manage any resultant impact, has been discussed in **Section 6.7**. The CMP formalises the recommendations of the Noise and Vibration Impact Assessment prepared by Arup (**Appendix K**) to ensure that works proceed in-line with these recommendations.

6.8.5 Erosion and Sediment Control

An Erosion and Sediment Control Plan has been prepared by Arup and is included in the Construction (Demolition) Management Plan provided at **Appendix P**. This plan has been prepared in accordance with the applicable policies, including the *Landcom Managing Urban Stormwater – Soils & Construction Volume 1 2004* guideline, to ensure that the proposed development does not result in any adverse impacts on water quality and discharge from the site during the demolition process. This plan will be required to be updated as part of the Stage 2 planning application to ensure that appropriate erosion and sediment control measures

6.9 Non-Indigenous Heritage

Curio Projects have prepared a Heritage Impact Assessment (HIS) (**Appendix L**) which considers the potential impacts of the development of the heritage values of the site and surrounds, with a primary focus on those heritage items identified under the Sydney LEP 2012, the *Heritage Act 1977* and other statutory registers.

The Sydney Sports Ground has over a century of direct cultural association with sporting and recreational events and facilities through the operation and use of the Sydney Cricket Ground and later the Sydney Sports Ground and Oval No.2. Over time, the nature of facilities has changed, adapted and expanded to meet the modern functional requirements of the day to meet the needs of the community, including the development of significant new stands at the SCG, the expansion of the Sydney Sports Ground, followed by its demolition and replacement with the SFS in the 1980s. Despite this physical change, however, the purpose of the precinct in catering to major sporting events has continued. Whilst the SFS has contributed to this purpose and character, hosting a number of significant sporting events including the Rugby World Cup, football games associated with the Sydney Olympics as well as numerous international and national matches, the stadium is no longer fit to meet the current and future community requirements of a major sporting venue. The redevelopment of the SFS represents the next phase in this history of the precinct, ensuring that the site remains at the heart of the Eastern City's major sporting events for the next 50 years and that the history of the site and precinct is carried on.

The HIS generally categorised the impacts of the proposal into the following:

- Physical impacts:
  - Directly resulting from the Stage 1 Demolition works
  - Likely to occur as a result of the future development contemplated by the Concept Proposal (e.g. development of the new stadium)
- Visual impacts:
  - Directly resulting from the Stage 1 Demolition works
  - Likely to occur as a result of the future development contemplated by the Concept Proposal (e.g. development of the new stadium)
- Archaeological impacts:
  - Directly resulting from the Stage 1 Demolition works
  - Likely to occur as a result of the future development contemplated by the Concept Proposal (e.g. development of the new stadium)

Physical Impacts

The demolition of the existing SFS and the ancillary buildings will result in the removal of modern, non-heritage fabric only and is not expected to result in any direct impacts upon heritage-listed items such as the Sydney Cricket Ground Members Stand. Whilst the SFS is not identified as a heritage item on any statutory register, it is listed by the National Trust for social and architectural values. As a result, and even though this is not required by any statutory planning or heritage requirement, the existing SFS will be subject to archival recording to assist in the future understanding of the place. The detailed Demolition and Environmental Management Plan will identify exclusion zones to the existing SCG Members and Ladies Stands for the operation of demolition plant and equipment to ensure that demolition activities avoid any potential physical impacts on this heritage item. This should include the erection of site hoarding between the SFS and SCG to ensure that demolition activities are contained away from the heritage structures associated with the SCG. A mitigation measure to this effect is included at **Section 8.0**.

The Noise and Vibration Impact Assessment prepared by Arup (**Appendix K**) outlines vibration management measures to avoid cosmetic impacts on nearby buildings, including heritage-listed buildings. A detailed Construction Noise and Vibration Management Plan will be prepared prior to the commencement of works to ensure that potential vibration-generating activities are managed in accordance with measures outlined in the Noise and Vibration Impact Assessment

It is also not envisaged that future development in accordance with the Concept Proposal will give rise to any physical impacts on existing heritage items, and the HIS outlines mitigation measures to ensure that demolition activities do not impact on Busby's Bore (refer to archaeological impacts). The construction of the new stadium will occur on the site of the former SFS and other secondary modern buildings which are not identified heritage items.

Visual Impacts

Stage 1 Demolition involves the demolition of the existing, modern Sydney Football Stadium, which has no historical visual relationship with any of the heritage items or heritage conservation areas within the vicinity of the site. Accordingly, the proposed demolition is not expected to give rise to any heritage impacts.

Whilst the Concept Proposal provides for an increase in the bulk and scale of the SFS, this scale is considered to be consistent with the character of the precinct as one of significant large-scale sporting venues which are distinctive within the site and their landscape. The HIS finds that the proposed building envelope will not result in any significant adverse impacts on views and vistas to nearby heritage items, including the SFS, Moore Park Road and Paddington South Heritage Conservation Area, as the views to the site will continue to be to a sporting stadium of significant scale in keeping with the historical and intended future character of this precinct. The HIS makes recommendations relating to the future detailed design to promote a stadium design that demonstrates a visual relationship with the SCG. The detailed design of the SFS in accordance with the Urban Design and Public Realm Guidelines will ensure that the development retains a landscaped and leafy character that is compatible with the visual character of the Moore Park parklands. Overall, the HIS concludes that whilst the stadium will be visually prominent within the landscape, this will not result in any significant impacts on heritage values, particularly in the context of the site's historical role within the locality and regional sporting context.

Opportunities existing within the detailed stadium and public realm design to enhance the relationship of the stadium with surrounding heritage items and conservation areas, and incorporate measures that reflect and enhance the historical values of the site including through design and interpretation. The Stage 2 Development Application should be accompanied by an updated HIS which considers the detailed design of the stadium, as well as by a Heritage Interpretation Plan or Strategy outline measures to convey the historical significance of the stadium and other heritage items in the immediate vicinity of the site. Mitigation measures to reflect the recommendations of the HIS in this regard are included at **Section 8.0**.

Archaeological Impacts

The primary known archaeological resource within the site is Busby's Bore, which is understood to traverse the northern portion of the site in the vicinity of Moore Park Road. Two access shafts for the bore are located within the site immediately adjacent to the SFS, with covered access pits installed as part of the original SFS construction. Due to the nature of construction activities and surveying when the Bore was constructed, the exact location of the bore is difficult to establish despite several attempts as part of previous developments and archaeological investigations. Notwithstanding this, further efforts to identify the current location and condition of the Bore have

been undertaken with only limited success in the preparation of this Development Applications and further efforts will continue to be made prior to and following the commencement of works on site.

The Stage 1 Demolition works involve the demolition of the existing stadium down to existing slab level only, and does not involve any direct disturbance of sub-surface areas, and accordingly will not result in any direct impacts on Busby's Bore. Care will be required to be taken during the demolition phase to avoid impacts from heavy equipment and plant. The Noise and Vibration Assessment prepared by Arup (**Appendix K**) has identified the potential for demolition vibration to impact upon identified heritage items, including Busby's Bore, and includes measures to manage vibration intensive works within proximity to the known or predicted location of these items including the preparation of dilapidation surveys for nearby structures and the implementation of vibration monitoring where works have the potential to exceed established vibration criteria. The final Construction Noise and Vibration Management Plan will be required to be developed with input from a qualified archaeologist to ensure that vibration management measures reflect the best available information regarding the location and structural condition of Busy's Bore. During the demolition phase there is also opportunity for further archaeological investigation to attempt to better locate the Bore within the site and locate the position of two access shafts for which the position has not been identified, which will allow for demolition and future construction activities to better identify and avoid potential impacts.

Detailed design of the new stadium within the Concept Proposal parameters will be required to avoid the known shafts of Busby's Bore and to mitigate potential impacts in the location where the Bore is understood to run within the sub-surface area. The current footprint and maximum envelope has been designed to enable the stadium to be designed in a manner to achieve this outcome. An updated Archaeological Assessment will be required to accompany the Stage 2 Development Application. Mitigation measures to reflect the recommendations of the HIS in this regard are included at **Section 8.0**.

Heritage Interpretation

The HIS recommends that the detailed design of the new stadium and public realm incorporate heritage interpretation to convey the history of the precinct, former sporting infrastructure within the site and specific elements of heritage fabric such as Busby's Bore. The Urban Design and Public Realm Guidelines, as well as the Public Art Strategy contained within that document, identify preliminary opportunities for the integration of interpretation into the building, landscape and public art design, and it is expected that these opportunities will be pursued and developed further as part of the Stage 2 Development Application. A mitigation measure requiring the submission of an Interpretation Strategy with the Stage 2 Development Application is included at **Section 8.0**.

6.10 Aboriginal Cultural Heritage and Archaeology

Curio Projects have prepared an Archaeological Assessment (AA), incorporating an Aboriginal Heritage Due Diligence Assessment Report, that accompanies this report at **Appendix M** which considers the archaeological potential and significance of the site and its surrounds, and determines whether Aboriginal objects are likely to be present at a site, and if so, if they are likely to be harmed through the proposed redevelopment. This assessment has been completed in accordance with the relevant guidelines and policies including the NSW Office of Environment and Heritage's *Due Diligence Code of Practice for the Protection of Aboriginal Objects in NSW*.

The Moore Park area of Sydney is part of the traditional lands of the Gadigal people, which stretches along the southern side of Sydney Harbour from South Head, west to approximately Darling Harbour, and south towards Botany Bay. Whilst there is only limited records of the Moore Park areas being used by Aboriginal people upon the arrival of colonists in the late-1700s, the AA states that the area would have provided local Aboriginal people with a rich and diverse resource zone.

A search of the Aboriginal Heritage Information Management System database confirms that there are no known artefacts or potential archaeological deposits identified within the site, or within close proximity of the site (see **Figure 52**). The closest AHIMS sites to the subject site are located within Moore Park and Centennial Park to the south of Lang Road. The search identified sites in the surrounding area are reflective of recorded archaeological work, usually triggered by development in this urban context. The preparation of the AA has also considered the findings of archaeological investigations for other projects within the vicinity of the site, including the Moore Park Tennis Courts and the CBD and South East Light Rail. A review of the previous archaeological works confirms that there is the potential for Aboriginal artefacts and sites to be present, regardless of levels of historical disturbance, due to the deep nature of soil profiles with potential for intact deposits existing beneath historical fill and disturbance.

This Stage 1 Demolition scope of works which are the subject of this application proposes to demolish structures to the existing slab level only and does not incorporate any site excavation or earthworks, and as such will not directly result in any impacts on archaeology which warrant further detailed investigations. With respect to the future stage of development envisaged by the Concept Proposal, Curio Projects note that there is the potential for the construction of the new stadium to impact Aboriginal archaeology during excavation, piling and other ground-intrusive works which will be subject to detailed design and further assessment as part of the Stage 2 Development Application. These have been considered in the mitigation measures outline **Section 8.0**, and include Aboriginal community consultation (in accordance with OEH guidelines), the preparation of an Aboriginal Cultural Heritage Assessment Report (ACHAR) and Aboriginal Archaeological Technical Report (ATR), and the development of a future program of Aboriginal archaeological test excavation.

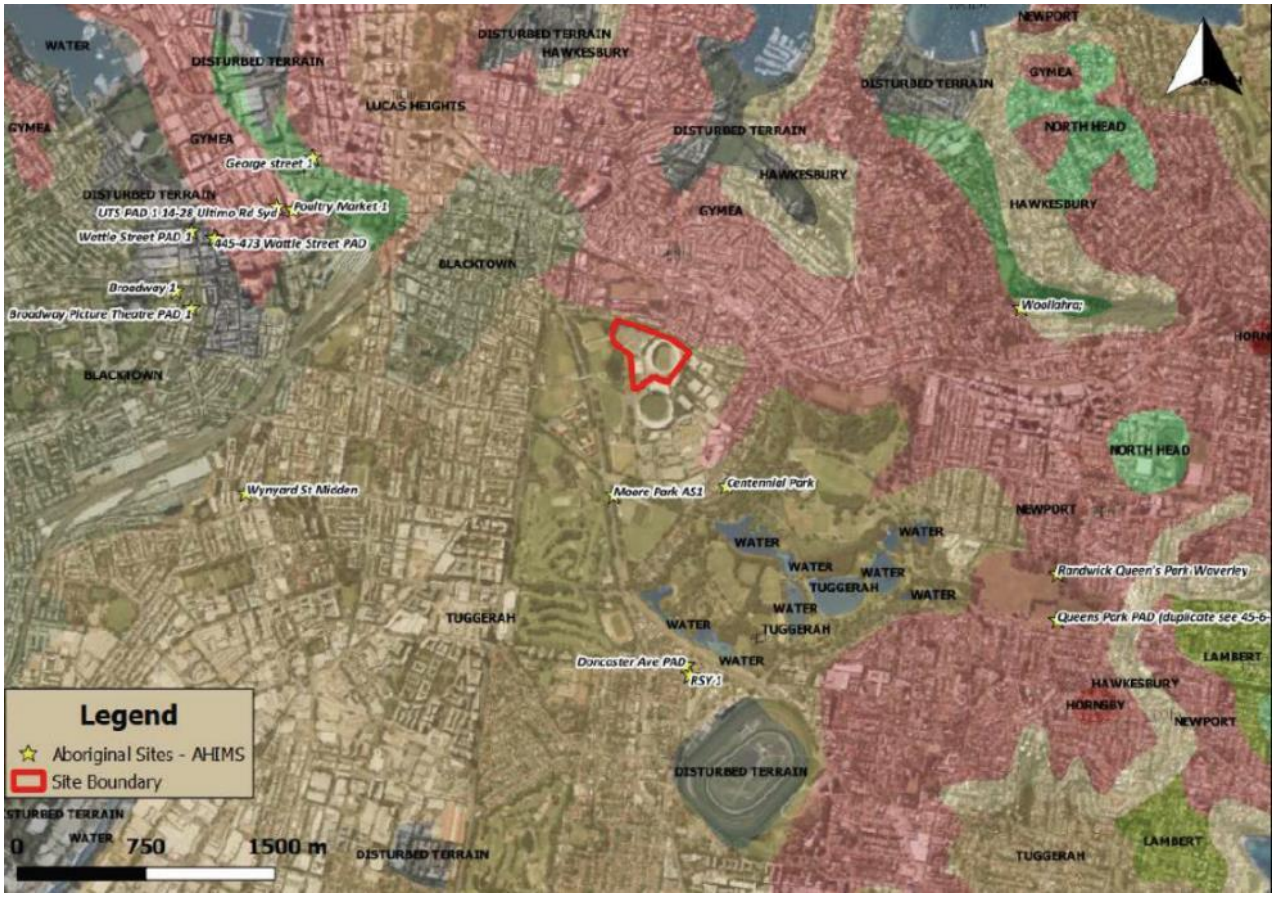

Figure 52 Registered Aboriginal sites and soil landscapes within site and surrounds

Source: Curio Projects

6.11 Ecologically Sustainable Development

Construction and Operation

The Environmentally Sustainable Design Strategy at **Appendix N** has been prepared by Aurecon to explore a range of sustainability strategies, and outline examples of best practice sustainable building principles that can be implemented in the delivery of the project. The report draws on both national and international examples to develop the overarching strategy, and will ensure the finished stadium minimises its consumption of natural resources and achieves the targeted sustainability certification. Other initiatives relating to transport, water, and waste materials are also discussed elsewhere in **Section 6**.

The future stadium is targeted to achieve a LEED (Leadership in Energy and Environmental Design) Gold rating. The LEED certification process is the most widely used green building rating system in the world and has been utilised by other local and overseas stadia development to ensure minimum levels of performance are met across the full spectrum of sustainability initiatives. This rating represents the minimum standard, with further initiatives being identified and explored as part of the detailed design process.

Further sustainability initiatives that go beyond the targeted LEED Gold certification are detailed in the Strategy and include, but are not limited to:

- salvaging 90% of construction and demolition waste for reuse or recycling;
- exceeding the overall energy efficiency benchmark by 20% through a combination of LED lighting, smart envelope design, and the inclusion of an energy generation system on site such as solar panels on the roof;
- exceeding the overall water efficiency benchmark by 20% through efficient fittings and fixtures, minimising landscape irrigation needs, rainwater collection and reuse, and expanding bore water facilities at the SCG;
- prioritising pedestrian circulation and permeability in the future design, providing bicycle parking for staff and visitors including exploring 'valet bike parking' to assist in game-day peak periods, and other measures to encourage the uptake of sustainable modes of transport;
- installing electric vehicle charging points, and prioritising parking for green vehicles;
- enhancing planting on site with 95% of the new vegetation to be Australian native species; and
- installing digital monitoring systems to manage and reduce energy demands real-time.

Figure 53 Examples of photovoltaic cells being installed on the roof of stadia for on-site power generation

Source: Aurecon

Figure 54 Examples of informal bike valet parking during events

Source: Aurecon

In addition to the above environmental sustainability initiatives, the proposal also considers social sustainability. A key outcome of the proposal will be to drastically improve the usability and equity of stadium facilities, and design the site to encourage social interaction and inclusion. This could include removing boundary fencing that prevents the community from accessing the site, balancing the current deficit in female, disabled, and unisex facilities, and providing prayer rooms.

As part of the detailed design and delivery of future development on the site, Infrastructure NSW is also committed to providing a Green Travel Plan that will consider site-specific measures implemented to promote and maximise the use of more sustainable modes of travel, and a life cycle assessment to investigate the total environmental impact of the project's life. The detailed design of the future stadium on the site will also be required to demonstrate that it has considered the initiatives in the Strategy, and demonstrate that it is capable of achieving the relevant LEED certification.

Stage 1 Demolition Works

Aurecon have prepared a separate statement (**Appendix N**) outlining the sustainability initiatives that will be implemented during the demolition of the stadium that will support the LEED Gold rating targeted for the stadium. The primary concern will be waste avoidance and minimisation, and include the following key initiatives:

- divert 90% of waste from landfill through the re-use of materials on-site and separation of waste streams to allow for off-site recycling and resource recovery, and development of on-site waste recording for all waste streams and volumes;
- reuse materials such as the digital scoreboards or materials like concrete on the site;
- separate materials to ensure purity of the different recycling streams, including steel and green waste; and
- investigate the use of high performance site sheds.

6.12 Waste Management

6.12.1 Stage 1 – Demolition Waste

The Construction (Demolition) Management Plan (**Appendix E**) details the likely waste streams generated by the demolition of the stadium, quantifies anticipated waste volumes and proposed disposal methods. Waste will be segregated into individual stockpiles within the MP1 boundaries to ensure integrity of the different recycling streams. Throughout the demolition phase opportunities for re-use on site will be investigated as the first option. This will include the processing and crushing of concrete waste in order to allow for the re-use of aggregate material for site level balancing. In the event that materials cannot be reused or recycled on site, they will be disposed of by an accredited contractor with regard to the classification of materials under the EPA's Waste Classification Guidelines. All dockets for the external recycling or disposal of materials will be retained for confirmation by the demolition contractor.

6.12.2 Operational Waste

An Operational Waste Management Plan will be prepared for the new stadium and submitted with the Stage 2 Development Application. The redevelopment of the existing stadium provides significant opportunities to ensure that purpose-built waste management and storage facilities are properly designed and sited so as to maximise opportunities for waste avoidance, recycling and re-use within the site and to ensure that all waste is stored and disposed of so as to minimise environmental impacts. In particular, the new stadium will benefit from internal loading facilities within the new basement ring-road, which represents a significant improvement upon the existing waste storage and disposal arrangements for the site.

6.13 Social and Economic Impact

A Social and Economic Impact Assessment has been prepared by Ethos Urban and accompanies this assessment at **Appendix O**. The Assessment considers and analyses the potential social and economic impacts of the proposal and is based on a desktop review of publicly available information in regard to the redevelopment and with guidance and reference to relevant guidelines. It considers both qualitative and quantitative indicators associated with the project and uses these as a means to measure and understand the potential for both positive and negative impacts of the project.

It confirms that the proposal has the potential result in both positive and negative impacts. The negative impacts are primarily short term and occur during the construction period, which have shaped a range of mitigation measures discussed in **Section 8.0**. These impacts include:

- the temporary occupation of SCG Members' and precinct car parking for use as the construction compound;
- potential amenity impacts in terms of noise, vibration, construction traffic and visual amenity during construction;
- temporary changes to or restriction of access through and around the site during construction;
- inconvenience for members and fans of SFS home teams that are required to temporarily relocate to other venues during construction; and
- the risk of impact on items of heritage value during excavation, in particular Busby's Bore.

In spite of these, the redevelopment of the SFS is also expected to provide a range of social and economic benefits to the community at a local, metropolitan and state level, including:

- an increase to 2.46 million patrons a year spread over an increase number and range of events, as well as expected improvements in reliability of patronage and average attendance;
- improved competitiveness, at State, national and international level, to host major sporting and non-sporting events that are an important offer for NSW's tourism industry, which is worth $33.2 billion per year to the NSW economy and supports 160,000 jobs;
- additional demand for up to 40,000 hotel room nights per year and support for an additional 108 FTE jobs in hotel and accommodation services;
- significantly improved customer facilities and associated visitor experience in and around the new stadium precinct;
- full-roof coverage of all seated areas, representing a significant improvement in weather protection that is expected to support growth in both numbers and reliability of patronage at major events;
- increased spending of up to $6 million in hospitality, accommodation and entertainment within the immediate local area as a result of increased reliability and total levels of patronage;
- consequent increases in local employment in these industries, expected to be up to an additional 180,000 hours per year or an equivalent of 346 part-time jobs as well as
- creation of up to 600 FTE new jobs during the construction phase and an additional 300 jobs (1,500 total operational) within the new completed Stadium (subject to Stage 2 Development Application).
- improved accessibility to, through and within the Stadium including significant enhancements to access for disabled people in line with modern design standards.
- enhanced connectivity and accessibility through and around the precinct for pedestrians and cyclists;
- greater equity of access for a wider range of socio-economic groups across Sydney as a result of improved weather protection and sight lines to the full range of seating available;
- alignment with and efficient leverage of existing transport infrastructure investment in the form of the CBD and South East Light Rail and the Albert 'Tibby' Cotter Bridge; and
- Improved safety, natural surveillance and lighting throughout the precinct.

6.14 Flooding and Stormwater Management

Arup have prepared a Stormwater Management and Flooding Report (**Appendix P)**, the findings of which are discussed in the following sections.

6.14.1 Water Quantity

The existing stormwater network will require adjustment or replacement to accommodate the new stadium, with consideration of the existing SCG infrastructure and drainage from MP1. It is expected that the new network will mirror the existing, and will discharge into the Sydney Water system via a relocated main and drains along Moore Park Road and Drive Avenue. This will be confirmed in the future application for the detailed design of the stadium, as the system is required to respond to design of the new stadium as well as the extents, levels and grades of public domain areas

There is an existing 730m^3 on site detention tank in the SCG that captures drainage from the SFS forecourt, roof, and pitch/stand areas. Arup confirm that additional underground storage will be needed to slow the release of water to the trapped low point on Driver Avenue and the Sydney Water network at this location. Preliminary calculations for the site based on the existing site characteristics and indicative scheme confirms that a tank with a volume of 1,320m^2 will meet Sydney Water's requirements for on site detention. The final size and location of the tank(s) will be confirmed as part of the Stage 2 SSD DA.

6.14.2 Water Quality

Water quality will be a central consideration of the design of all new stormwater systems, in order to ensure that stormwater discharge from the site complies with relevant Sydney Water and City of Sydney standards for pollutant reduction and in order to support the attainment of the targeted LEED Gold sustainability rating. Water sensitive urban design (WSUD) measures will be employed within the public realm and landscaping in order to improve water quality. The Urban Design Guidelines include a series of principles for sustainability, which include guideline specifically in relation to stormwater discharge and quality including a guideline to the "*engage water sensitive design principles to manage stormwater and overland flow through the site* [and] *explore opportunities to harvest and treat water on-site for reuse or release*". WSUD measures will be supplemented as required by other water

quality measures in order to achieve the relevant water quality targets. An assessment of the water quality impacts of the proposed stadium construction and operations, as well as details of any WSUD measures within the landscaping and public realm design, will be provided with the Stage 2 Development Application.

6.14.3 Flooding

As discussed in **Section 3**, the site is within the Centennial Park catchment area and is identified in the *City of Sydney Council Centennial Park Flood Study, April 2016* as being subject to flooding in each instance from a 2-year Average Recurrence Interval (ARI) up to a 100-year ARI event with significantly deeper and more widespread flooding occurring during the Probable Maximum Flooding (PMF) event. The redevelopment of the site, therefore, has the potential to alter the risk and extent of flooding.

An analysis of the Centennial Park TUFLOW model, with modification to include contemporary development in the area, confirms that the movement of water in the area is highly sensitive to changes in ground levels along the northern edge of the site where it connects to Moore Park Road and where there is an existing overland flow path. It typically collects in a trapped low point on Driver Avenue.

A comparison of the existing and indicative scheme in respect of flood hazard confirms that there are no high hazard areas within the site, and that there is no real change in flood hazard between the two scenarios. An area of high flood hazard is present to the south of the site, relating to the SCG, which corresponds to the trapped low point in the existing site topography.

Arup confirms that with the provision of on-site stormwater detention and/or above ground measures such as surface grading can attenuate peak flows and resultant flooding.

Climate Change

The OEH has released a Floodplain Risk Management Guideline, *including Practical Consideration of Climate Change*. Given the use and location of the site, and the existing flooding conditions, Arup confirm that climate change is not a significant issue for the future of the site as:

- new floodways are unlikely to result from climate change;
- flood hazard is external to the site, and in an unoccupied area;
- inundation does not affect the viability of the site, and can be managed; and
- the proposed development will not increase the potential for damage.

Sea level has no effect due to the height of the Precinct compared to sea level.

6.15 Biodiversity

A Biodiversity Assessment Report (BDAR) has been prepared by Jacobs (**Appendix Q**), which documents the results of the biodiversity assessment undertaken for the project in line with the relevant State and Commonwealth environmental and threatened species legislation and policy. The BDAR addresses Stage 1 and Stage 2 of the Biodiversity Assessment Method. Stage 3 'Improving Biodiversity Values' is only for the purposes of an application for a biodiversity stewardship agreement and as such is not covered in the BDAR as it is not applicable to this project.

In determining the biodiversity values of the site, and the potential impacts on the site, Jacobs have completed:

- a review of existing information regarding threatened species, populations and communities within a 10km radius of the site; and
- a field survey to review the findings of the background research, including vegetation surveys and a habitat assessment on the identified list of threatened flora and fauna species know or predicted to occur in the subregion.

The findings of the BDAR confirm that the site has been heavily modified from its original state and as such there is little natural terrestrial vegetation in the locality. Some planted native vegetation is present within the development site, but because it is not naturally occurring it cannot be allocated to a Plant Community Type (PCT) and as such it

is not possible to assess the integrity of the vegetation or to generate any ecosystem credit requirements to offset any vegetation removed on the site[3]. The site has potential to be traversed by a number of bat species, however, in a bioregional context the subject site is not an important habitat or a known roosting location.

In view of this, it has been confirmed that there are no threatened ecological communities located in or directly adjacent to the development site, and that the vegetation on site is not a suitable habitat for any threatened or migratory species. The proposal will not require the preparation of an offset strategy for the purchase and retirement of biodiversity credits. Apart from general recommendations in relation to site management to minimise potential impacts on trees to be retained and water quality, the BDAR report makes recommendations in relation to the potential to re-establish vegetation within the site which is suitable for foraging by the Grey-headed Flying-fox and consideration to the installation of an artificial microbat roost structure within the future landscape design. These measures will be considered in the final landscape design which is the subject of the Stage 2 Development Application.

6.16 Environmental Risks

6.16.1 Resilience to climate change

The Climate Change Policy Framework for NSW (2016) outlines a need to implement climate change adaptation strategies "*to reduce costs to public and private assets, reduce impacts on health and wellbeing, manage impacts on natural resources, ecosystems and communities, and take advantage of opportunities to grow adaptation services*". The potential effects of climate change for demolition, future development and operation of a new stadium have been considered in this project, including through the preparation of the Urban Design Guidelines (**Appendix C**) and ESD Strategy (**Appendix N**). In particular:

- Section 8.9 of the Urban Design Guidelines sets out principles and more detailed guidance regarding detailed design to improve sustainability, including maximising landscape elements to reduce urban heat island effects to respond to an increase in warmer and extreme heat days, maximising biodiversity on the site, minimising greenhouse gas emissions and minimising consumption of natural resources;
- Section 4.7 of the ESD Strategy sets out principles for the project to directly respond to the potential impacts of climate change, including increases in extreme heat days, increases in average temperature, increases in storm events and rainfall and sea level rise.

The Urban Design Guidelines and ESD Strategy provide a sound framework to inform the detailed stadium design and design excellence process. The Stage 2 Development Application will include further details of detailed design and operational measures which will be implemented to address resilience to climate change.

6.16.2 Security

Preliminary consideration has been afforded to security risks and has informed a series of principles that will shape the future detailed design and operation of the stadium as set out in the (see **Appendix R**). The principles describe potential physical security treatment measures that are to be 'designed in' to the SFS architecture to treat security risks and support the achievement of security objectives and minimise security expenditure. The key initiatives include:

- establishing an effective barrier to unauthorised or uncontrolled entry to the secure line of the building, and pedestrian and vehicle access points;
- establishing front and back of house areas, to segregate and protect restricted spaces from the public including critical infrastructure;
- implementing expandable, temporary fencing to prevent leakage around screening points;
- minimising vehicle access points;
- completing a detailed analysis of the vulnerability of the stadium to vehicle ramming, noting that the intention to raise the concourse level to be above the road level reduces the exposure of pedestrians to vehicles;
- completing a detailed assessment against the principles of *Crime Prevention Through Environmental Design* to reduce the opportunities for crime; and
- completing a risk-based blast analysis that nominates proportionate treatments targeted in the right areas and locations that reflect the credible assessed risk.

[3] It is noted that the proposed development only seeks to remove 26 trees on the site, and will retain 100 existing trees, including the significant Moreton Bay Fig (Tree 125).

These initiatives have informed the mitigation measures in **Section 8.0** of this report.

6.17 Ground Contamination

A Preliminary Site Investigation report has been prepared by Douglas Partners (**Appendix S**) which comprises a desktop assessment of the potential for ground contamination within the site of the proposed stadium prepared in accordance with the requirements of State Environmental Planning Policy No.55 – Remediation of Land. The assessment draws upon previous contamination information gathered within the SCSGT precinct, including from soil testing obtained from the construction of the Sheridan Building, Bradman Noble Stand and ARDC building. As outlined in **Section 3.2.5**, there is the potential for some contamination beneath the site associated with previous filling and demolition of prior structures on the site prior to the construction of the current SFS in the 1980s. Based upon analysis of the nearby sites for which detailed investigation has been undertaken, key potential contaminants include polycyclic aromatic hydrocarbons (PAHs) which is likely to be due to the presence of cinder, ash and slag as well as concentrations of heavy metals such as lead, mercury and zinc. In addition, there are two underground storage tanks (USTs) which are located along the eastern site boundary used for petrol and diesel storage for on-site maintenance vehicles and equipment, and pool chemicals are also stored on-site for maintenance of the member's swimming pool.

The land use on the site will not change as a result of the Concept Proposal, with the continuation of the stadium use. The Preliminary Site Investigation report has adopted standards for contamination in accordance with the 'National Environment Protection (Assessment of Site Contamination) Measure, Schedule B1 – Guideline on Investigation Levels for Soil and Groundwater' (NEPC, 2013) which provides assessment levels for various soil, groundwater and vapour contaminants and as detailed further at **Appendix S**.

The Stage 1 Demolition scope for which development consent is sought as part of this application involves the demolition of the existing slab down to slab level only. Accordingly, no soil will be disturbed and accordingly no contamination impacts are expected to arise as a result of those detailed works for which consent is sought.

A Detailed Site Investigation (Phase 2) will be undertaken and submitted with the Stage 2 Development Application, and a Remedial Action Plan (RAP) will be developed as required in order to confirm the nature and extent of contamination present within the site and to establish protocols for the classification and management of any contamination which may be present. This requirement is outlined in the Mitigation Measures included at **Section 8.0**. In light of the above. Subject to undertaking these further investigations, Douglas Partners conclude that the site either is, or can be made, suitable for the future proposed use of the site.

6.18 Groundwater

A Groundwater Assessment Report has been prepared by Arup (**Appendix T**) which identifies the existing groundwater conditions within the site and locality, and considers the impacts and potential impacts of the Concept Proposal and Stage 1 Demolition on groundwater conditions. Stage 1 Demolition is proposed to occur down to existing slab/ground level only and will not involve any soil disturbance or other actions which may impact upon groundwater. Potential impacts of the development include potential impacts on groundwater levels and flows, groundwater chemistry and impacts on other groundwater users (ecological and human). The extent of any impacts is highly dependent on the detailed design of the new stadium, however, the report does not identify any significant or major issues arising from the Concept Proposal and outlines matters that will be subject to further assessment as part of the Stage 2 Development Application and post-approval conditions.

Prior to the commencement of works for the construction of the stadium, which will be subject of further detailed design and assessment as part of the Stage 2 Development Application, a Groundwater Management Plan will be developed and implemented to minimise the impact of the project's construction and operation on groundwater. This will include the installation of wells to monitor the existing groundwater regime at the site and to monitor any impacts throughout the construction period.

6.19 Airspace Protection

The proposed building envelope outlined in **Section 5.1.1** would have a maximum height of RL 85.00 AHD, which is below the applicable operations surfaces which relate to Sydney Airport as published on the Sydney Airport Corporation Limited (SACL) website. In particular, at the site the Obstacle Limitation Surface (OLS) is mapped at RL 156 AHD, whilst the PANS-OPS surface is mapped at RL 335.2 AHD. Infrastructure NSW has consulted with SACL during the preparation of the EIS, who have provided an approval under section 138 of the *Airports Act 1996* (Cth)

on the basis of the maximum envelope height of RL 85 AHD is beneath the Outer Horizontal Surface of RL 156 AHD. SACL will have the opportunity to review the envelope plans further during the public exhibition period.

6.20 Utilities infrastructure

The Infrastructure Management Plan prepared by Aurecon at **Appendix U**, assesses the availability and location of infrastructure and services and determines the capacity of the future development to be serviced. Consideration has been given to the full range of services likely to be required, including electrical, telecommunications, potable water, sewage and gas.

Based upon the analysis of existing services and consultation with the relevant infrastructure providers, Aurecon have development a strategy for how the site can be serviced, subject to the infrastructure upgrades outlined in the Management Plan that ensures that the Stage 1 Demolition and Concept Proposal do not result in any adverse impacts on existing utility infrastructure.

6.21 Ecologically Sustainable Development

The EP&A Regulation lists four principles of ecologically sustainable development to be considered in assessing a project. They are:

- The precautionary principle;
- Intergenerational equity;
- Conservation of biological diversity and ecological integrity; and
- Improved valuation and pricing of environmental resources.

An analysis of these principles follows.

Precautionary Principle

The precautionary principle is utilised when uncertainty exists about potential environmental impacts. It provides that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The precautionary principle requires careful evaluation of potential environmental impacts in order to avoid, wherever practicable, serious or irreversible damage to the environment.

This EIS has not identified any serious threat of irreversible damage to the environment and therefore the precautionary principle is not relevant to the proposal.

Intergenerational Equity

Inter-generational equity is concerned with ensuring that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations. The proposal has been designed to benefit both the existing and future generations by:

- maintaining heritage listed items for future generations to appreciate and enjoy;
- implementing safeguards and management measures to protect environmental values.
- facilitating job creation and the provision of housing in close proximity to public transport; and
- Improving the public domain and amenity in Moore Park locality.

The proposal has integrated short and long-term social, financial and environmental considerations so that any foreseeable impacts are not left to be addressed by future generations. Issues with potential long-term implications such as waste disposal would be avoided and/or minimised through construction planning and the application of safeguards and management measures described in this EIS and the appended technical reports.

Conservation of biological diversity and ecological integrity

The principle of biological diversity upholds that the conservation of biological diversity and ecological integrity should be a fundamental consideration. The proposal would not have any significant effect on the biological

diversity and ecological integrity of the study area, subject to implementation of Mitigation Measures set out in **Section 8.0** which have been informed by the BDAR prepared by Jacobs (**Appendix Q**).

Improved valuation, pricing and incentive mechanisms

The principles of improved valuation and pricing of environmental resources requires consideration of all environmental resources which may be affected by a proposal, including air, water, land and living things. Mitigation measures for avoiding, reusing, recycling and managing waste during construction and operation would be implemented to ensure resources are used responsibly in the first instance.

Additional measures will be implemented to ensure no environmental resources in the locality are adversely impacted during the construction or operational phases.

6.22 Site Suitability

The site is suitable for the proposed development because it is:

- Crown Land designated under the *Sydney Cricket and Sports Ground Act 1978* to be used and developed for the purpose of, and in connection, with sporting events;
- already developed and used as the Sydney Football Stadium, being a rectangular playing field with a stadium capacity of approximately 45,000 persons;
- located on land and within a precinct which has a significant historical and cultural association with the playing and viewing of major sporting events;
- comprises part of the Eastern City's premiere sporting venues precinct which hosts significant sporting matches and other entertainment in a location at the periphery of the Sydney CBD;
- directly adjacent to the Sydney Cricket Ground, providing synergies and efficiencies in the hosting of significant sporting matches, maintenance of facilities and training by local sporting teams;
- immediately next to the Rugby League Central and Australian Rugby Development Centre buildings, which host national-level sporting administration facilities for the codes which are the major users of rectangular stadia,
- immediately next to the educational training and research facilities of the University Technology Sydney, which are located in the ARDC building, which have the potential to provide synergies between these activities and the new stadium;
- is well-serviced by existing and planned future major event and day-to-day transport arrangements, including public and event buses, trains, car parking, pedestrian footpaths and cycle routes; and
- has existing utility infrastructure connections which have capacity, or which can be readily augmented to provide capacity for, the servicing requirements of a modern stadium.

6.23 Public Interest

The Concept Proposal and Stage 1 Demolition works to facilitate redevelopment of the Sydney Football Stadium are considered to be in the public interest because they will:

- support the delivery of a modern stadium that achieves the Tier 1 standards in accordance with NSW Stadia Strategy 2012, is compliant with modern standards for accessibility, safety and security, and which delivers a high level of amenity in order to provide a venue capable of hosting national and international-scale events;
- establish a framework, via the Urban Design Guidelines, to ensure that the detailed design of the future stadium that improves the amenity and functionality of the stadium during both event and non-event periods and delivers significant new benefits in terms of an improved public domain to Moore Park Road and Driver Avenue;
- require that a competitive design process be undertaken in accordance with a Design Excellence Strategy that has been endorsed by the NSW Government Architect, ensuring that the future stadium building and public domain will achieve a high standard of architecture and landscape architecture;
- achieve a high level of environmental performance by targeting a LEED Gold rating in accordance with an ESD Strategy, including setting strong targets for the recycling and re-use of existing building materials during the demolition of the existing SFS;

- increase activation at the key street interfaces to Moore Park Road and Driver Avenue during event and non-event periods, providing an improved level of public amenity and game-day experience for the general public and stadium patrons alike;
- deliver a new, more direct and higher quality pedestrian connection between Paddington and Moore Park, improving accessibility to Moore Park, the Entertainment Quarter and the future Moore Park Light Rail Station;
- facilitate increased visitation by non-car travel modes, including by public transport, point-to-point services, cycling and walking through the provision, through improved wayfinding and signage, new dedicated facilities, improved coordination with new and existing infrastructure outside of the site, and preparation of a Transport Access Guide and Green Travel Plan as part of the future Stage 2 Development Application;
- provide for increased efficiency in stadium operations by providing a purpose-built facility that is fit for modern requirements and adaptable to accommodate future requirements, reducing energy consumption and operational costs to Government;
- deliver significant social, cultural and economic benefits to the local, Sydney and NSW community by providing a venue that will provide a high-quality venue for viewing sport, which provides capacity to increase patronage and the attraction of national and international events resulting in direct and indirect benefits in terms of employment and expenditure within the NSW economy; and
- not result in any significant environmental impacts that cannot be managed through adherence to the Mitigation Measures outlined in **Section 8.0**, standard conditions of development consent and any further mitigation measures and conditions identified during the preparation and assessment of the Stage 2 Development Application.

7.0 Environmental Risk Assessment

7.1 Risk Assessment Framework

The Environmental Risk Assessment (ERA) establishes a residual risk by reviewing the significance of environmental impacts and the ability to manage those impacts. The ERA for the Sydney Football Stadium Concept Proposal and Stage 1 Development Application has been adapted from Australian Standard AS4369.1999 Risk Management and Environmental Risk Tools.

In accordance with the SEARs, the ERA addresses the following significant risk issues:

- the adequacy of baseline data;
- the potential cumulative impacts arising from other developments in the vicinity of the Site; and
- measures to avoid, minimise, offset the predicted impacts where necessary involving the preparation of detailed contingency plans for managing any significant risk to the environment.

Figure 55 indicates the significance of environmental impacts and assigns a value between 1 and 10 based on:

- the receiving environment;
- the level of understanding of the type and extent of impacts; and
- the likely community response to the environmental consequence of the project;

The manageability of environmental impact is assigned a value between 1 and 5 based on:

- the complexity of mitigation measures;
- the known level of performance of the safeguards proposed; and
- the opportunity for adaptive management.

The sum of the values assigned provides an indicative ranking of potential residual impacts after the mitigation measures are implemented.

Significance of impact	Manageability of impact				
	5 Complex	4 Substantial	3 Elementary	2 Standard	1 Simple
1 – Low	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)	2 (Low)
2 – Minor	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)	3 (Low)
3 – Moderate	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)	4 (Low/Medium)
4 – High	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)	5 (Low/Medium)
5 – Extreme	10 (High)	9 (High)	8 (High/Medium)	7 (High/Medium)	6 (Medium)

Figure 55 Risk Assessment Matrix

7.2 Environmental Risk Assessment

Identification of Risks and Proposed Mitigation				Risk Assessment		
Item	**Phase**[4]	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Transport and Accessibility	C / D	• Demolition/ construction traffic on local roads. • Congestion associated with stadium operation.	• A Construction Traffic, Transport and Pedestrian Management Plan has been prepared to ensure that demolition activities do not adversely impact upon the amenity or safety of the locality. • Infrastructure NSW will continue to liaise with the Sydney Coordination Office to manage potential cumulative impacts. • The new stadium will have the same number of seats (capacity) as the existing stadium, which already has established arrangements to manage event transport.	3	3	6 Medium
Non-Indigenous Heritage	C / D	• Impacts on heritage items. • Impacts on heritage conservation areas.	• The Heritage Impact Statement concludes that the proposed development will not result in any adverse heritage impacts on identified heritage items or heritage conservation areas. • The detailed design of the stadium will avoid direct impacts upon Busby's Bore based on current knowledge and understandings of the location of this item. • Further investigative works will be undertaken to better determine the location of Busby's Bore to inform the Stage 2 Development Application, as well as during subsequent earthworks to support stadium construction. • An updated Heritage Impact Statement will be prepared for and accompany the Stage 2 Development Application.	3	3	6 Medium
Indigenous Heritage	C / D	• Impact on archaeology. • Impact on cultural values.	• No sub-surface works are included in the Stage 1 Demolition that would impact on archaeology. Further investigations will be undertaken prior to and during the construction of the stadium, including as part of any excavation which may be required. • An Aboriginal Cultural Heritage Assessment Report will be submitted with the Stage 2 Development Application.	2	3	5 Low/Medium
Noise and Vibration	C / D	• Demolition noise. • Construction noise. • Operational noise.	• A Noise and Vibration Assessment has been prepared by Arup which considers potential demolition noise and vibration impacts on nearby receivers and sets out mitigation measures to reduce impacts during the demolition phase. • The Noise and Vibration Assessment also includes a conservative assessment of the noise and vibration impacts associated with the future operation of the stadium, involving across a range of operating scenarios including small and larger sporting events and concerts.	3	2	5 Low/Medium

[4] C = Concept ; D = Demolition

Identification of Risks and Proposed Mitigation				Risk Assessment		
Item	**Phase**[4]	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Visual and Views	C	• Impact on public views. • Impact on private views.	• The Stage 1 Demolition involves the removal of an existing building. • The Visual Impact Assessment considers public views to the site and the maximum building envelope and considers the visual impacts to be acceptable, subject to detailed design and incorporation of recommendations. Similarly, the private view assessment contained within the EIS concludes that the impacts of the proposed envelope will be acceptable. • A Visual and View Impact Assessment will be required to be prepared for and accompany the Stage 2 Development Application.	2	3	5 Low/Medium
Biodiversity	C / D	• Impacts on flora and fauna.	• BDAR has not identified any significant native flora or fauna within the subject site. • BDAR makes recommendations for detailed design to improve biodiversity values of the site. • Tree 125 is to be protected and retained throughout demolition and construction, along with a number of less-significant trees.	1	2	3 Low
Stormwater and Flooding	C / D	• Flooding • Water reuse • Water quality	• The site is located within existing overland flow paths and there is some potential for flooding within low points in the immediate vicinity of the site. These will be managed through the detailed stadium and public domain design, including OSD as required to reduce downstream flooding impacts. • The ESD strategy establishes targets for rainwater re-use to minimise demand for potable water. • An Erosion and Sediment Control Plan has been prepared. Water quality assessment and modelling will be undertaken and submitted with the Stage 2 Development Application.	2	3	5 Low/Medium
Contamination and Geotechnical	C / D	• Ground contamination • Impact on existing buildings and structures.	• The Stage 1 Demolition component does not involve any soil disturbance. • A Phase 1 Contamination Assessment has identified the potential for some limited soil contamination due to previous site filling prior to the construction of the current SFS and also due to the presence of USTs and other cleaning/maintenance chemicals stored within the site. • A Detailed Site Contamination Investigation (Phase 2) is being prepared and will inform and accompany the Stage 2 Development Application. A Remedial Action Plan (RAP) will also be prepared and submitted if recommended by the Phase 2 investigation. • A Geotechnical Statement will accompany the Stage 2 Development Application to consider potential impacts of any excavation on existing buildings and structures.	2	3	5 Low/Medium

Identification of Risks and Proposed Mitigation				Risk Assessment		
Item	**Phase**[4]	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Utilities and Infrastructure	C / D	• Impact on utilities infrastructure during demolition. • Capacity to service new stadium.	• An Infrastructure Management Plan has been prepared by Aurecon that identifies potential impacts on utilities infrastructure during demolition, and outlines strategies to manage the decommissioning of existing stadium services so as to avoid impacts on surrounding services and servicing of buildings within the precinct. Relevant utilities providers have been consulted in the preparation of this Plan. • Consultation has confirmed there is capacity within existing utility infrastructure, or though standard augmentation to existing infrastructure, to meet the requirements of the new stadium. The Stage 2 Development Application will be accompanied by a revised Infrastructure Management Plan prepared in consultation with the relevant utility providers.	2	2	4 Low/Medium
Waste Management	C / D	• Demolition waste. • Construction waste. • Operational waster.	• The Construction (Demolition) Management Plan prepared by Aver Consulting identifies and quantifies likely waste streams and, in conjunction with the ESD Statement for Demolition, outlines measures to maximise recycling and re-use of materials from the existing stadium. • The Construction Management Plan for the Stage 2 Development Application will set out measures to minimise waste during construction. • A Waste Management Plan for operation of the future stadium will accompany the Stage 2 Development Application	2	2	4 Low/Medium
Wind Impacts	C / D	• Wind speeds which exceed applicable pedestrian comfort criteria as a result of new building. • Noise arising from wind flows over new building.	• Pedestrian Wind Environment Study, including wind tunnel testing, to be undertaken based upon detailed stadium design and submitted with Stage 2 Development Application. • Acoustic and wind assessment to address potential for wind noise generation based upon the detailed design of the stadium as part of Stage 2 Development Application.	3	2	5 Low/Medium
Air Quality	D	• Dust impacts on local air quality during demolition and construction.	• Construction (Demolition) Management Plan prepared by Aver Consulting sets out principles and strategies to manage dust generation during demolition phase. Detailed Demolition and Environmental Management Plan to be prepared by appointed demolition contractor prior to the commencement of works including further detail of dust management. • A Construction Management Plan will be submitted with the Stage 2 Development Application which details measures to manage dust during the construction phase	3	2	5 Low/Medium

Identification of Risks and Proposed Mitigation				Risk Assessment		
Item	**Phase**[4]	**Potential Environmental Impact**	**Proposed Mitigation Measures and / or Comment**	**Significance of Impact**	**Manageability of Impact**	**Residual Impact**
Communications and Community	C / D	• Information about Concept Proposal and Stage 1 works. • Demolition impacts. • Construction impacts. • Input and information about future design and operations.	• Infrastructure NSW has undertaken extensive engagement and communication activities to date – refer Section 4.0. • This EIS will be publicly exhibited by the NSW Department of Planning and Environment. Infrastructure NSW will also undertake further public engagement during this period. • Subject to planning approval, regular communications will be provided to local residents throughout the demolition phase to advise of the progress of works, likely impacts and special activities. • Regular communications will be maintained throughout the construction phase of the project. • Further consultation and engagement work will be undertaken prior to lodgement of the Stage 2 Development Application, during exhibition, during construction and following the commencement of operations. Protocols for ongoing consultation following commencement of operations will be determined through the Stage 2 Development Application.	3	2	5 Low/Medium
Safety and Security	C / D	• Potential for crime (unauthorised access, theft) during construction and demolition works. • Potential security threats to future stadium and stadium users. • Potential for crime and perception of crime within future public domain areas surrounding stadium	• The contractor will be responsible for ensuring the security of the site during working and non-working hours, including the provision of on-site security staff and/or regular patrols outside of working hours to reduce the risk of unauthorised access to the site. • A Security Principles Report has been prepared which identifies the key security threats and identifies measures which have been adopted in the Concept Proposal and/or will be reflected in the final detailed stadium design in order to reduce risks associated with the stadium. • Infrastructure NSW will work with the relevant NSW Government agencies to ensure that the stadium is designed and operated in accordance with best-practice security and public safety protocols. • A Crime Prevention Through Environmental Design assessment report will be prepared for and accompany the Stage 2 Development Application.	3	3	6 Medium
Overshadowing	C	• Shadowing of public places. • Shadowing of SCG pitch.	• Shadow diagrams have been prepared to model the worst-case scenario based on the maximum building envelope. Shadows cast do not result in any significant adverse shadowing impacts on Moore Park or the SCG pitch. • Updated shadow diagrams will be prepared for the Stage 2 Development Application based upon the detailed design.	2	1	2 Low

8.0 Mitigation Measures

The collective measures required to mitigate the impacts associated with the Concept Proposal are detailed in **Table 8**, whilst those measures required to mitigate the impacts associated with the Stage 1 Demolition works are detailed in **Table 9**. These measures have been derived from the previous assessment in **Section 6.0** and those adopted from the appended consultants' reports, and represent the final and full series of mitigation measures proposed for the project pursuant to clause 7(d)(iv) of Schedule 2 of the Environmental Planning and Assessment Regulation 2000.

Table 8 Mitigation Measures – Concept Proposal

Mitigation Measures
Built Form and Urban Design • The Urban Design Guidelines prepared by SJB Urban Design (June 2018) are to be adopted for the project and inform the Design Excellence Process and Stage 2 Development Application. • Detailed design of the stadium should occur in accordance with the processes outlined in the Design Excellence Strategy (2018) prepared by Infrastructure NSW and endorsed by the NSW Government Architect. • The detailed design of the new stadium should have regard to the recommendations of the Visual Impact Assessment prepared by Ethos Urban. • The Visual and View Impact Assessment is to be prepared to reflect the detailed design and submitted with the Stage 2 Development Application. • Shadow diagrams are to be included in the Stage 2 Development Application showing the actual shadow impacts of the detailed stadium in comparison to the maximum building envelope.
Transport and Accessibility • The Traffic and Transport Assessment (Arup 2018) is to be revised and resubmitted with the Stage 2 Development Application, outlining any changes to the traffic and transport management approach. The revised report is to detail any further information regarding integrated ticketing as a result of Infrastructure NSW's commitment to develop a plan with Transport for NSW. Details of the final parking provision within the reinstated MP1 car park are also to be included. • The Stage 2 Development Application should include details of a signage and wayfinding strategy that has been prepared in consultation with the City of Sydney, Transport for NSW and the Centennial and Moore Park Trust. • Details of operational vehicular servicing and loading activities are to be included in the Stage 2 Development Application. • A Transport Access Guide is to be prepared prior to the commencement of operations for the new stadium to provide enhance information to visitors and patrons of the new stadium in relation to the range of travel modes and facilities provided at the stadium, with an emphasis on encouraging non-car travel modes. • Infrastructure NSW is to consult with the Sydney Coordination Office during the preparation of the Construction Management Plan and Transport Assessment for the Stage 2 Development Application so as to manage and mitigate potential cumulative impacts associated with other development and infrastructure projects.
Heritage • A revised Heritage Impact Statement is to be submitted with the Stage 2 Development Application which assesses the detailed stadium design in relation to the potential for unforeseen impacts on those heritage items and heritage conservation areas assessed in the Heritage Impact Statement (Curio 2018) submitted with the current Development Application. • Further investigative works should be undertaken to better determine the location of Busby's Bore in order to inform the Stage 2 Development Application, and a methodology should be outlined for further investigations and protection of the Bore during stadium construction and any excavation. • A Heritage Interpretation Strategy is to be prepared by a qualified person(s) for submission with the Stage 2 Development Application. • An Aboriginal Cultural Heritage Assessment Report is to be prepared in consultation with local Aboriginal stakeholders and be submitted with the Stage 2 Development Application.
Noise and Vibration • A Noise and Vibration Assessment is to be prepared and submitted with the Stage 2 Development Application to assess the potential construction and operation noise and vibration impacts of the new stadium, having regard to the noise assessment framework and criteria outlined in the Noise and Vibration Assessment (Arup 2018) that accompanies this application. • The Stage 2 Development Application is to identify a framework and methodology for the ongoing monitoring of noise from the stadium.

Mitigation Measures

Biodiversity

- An updated Arboricultural Impact Assessment is to be submitted with the Stage 2 Development Application confirming that the detailed design of the stadium, public realm and new landscaping is compatible with the retention of those trees identified in the Arboricultural Impact Assessment (TreeIQ 2018) that accompanies this application as being for retention.
- The Public Domain and Landscape Plan is to identify new tree planting and consider the implementation of the recommendations of the Biodiversity Development Assessment Report (Jacobs 2018).

Stormwater and Flooding

- A detailed Stormwater and Flooding Assessment is to be prepared and submitted with the Stage 2 Development Application taking into account the detailed design to the stadium and public domain, and outlining measures for rainwater capture and reuse within the site, piped and overland flow, on-site stormwater detention, water sensitive urban design, and include modelling of water quality and quantity for discharges from the site. Details of impacts upon local stormwater infrastructure and local flood conditions is to be included in the assessment.
- The Stage 2 Development Application is to contain details of water quality assessment and modelling undertaken to demonstrate that pollutant reduction targets are achieved.
- Targets for rainwater capture and re-use identified in the ESD Strategy prepared by Aurecon (May 2018) are to be adopted for the detailed design and identified in the Stage 2 Development Application.

Contamination and Geotechnical

- A Detailed Site Contamination Investigation (Phase 2) is to be prepared submitted with the Stage 2 Development Application, detailing identified and potential contamination. If recommended by the Phase 2 assessment, a Remedial Action Plan (RAP) must also be prepared and submitted with the Stage 2 Development Application.
- A Geotechnical Statement is to be prepared and submitted with the Stage 2 Development Application assessing the potential impacts of piling, excavation and construction on existing buildings and structures within the immediate vicinity of the site.

Utilities and Infrastructure

- An Infrastructure Servicing Strategy is to be prepared and submitted with the Stage 2 Development Application. Preparation of the strategy is to include consultation with all relevant utility authorities, including but not limited to those in respect of potable water, stormwater, sewage, electricity, gas, telecommunications

Waste Management

- The Construction Management Plan accompanying the Stage 2 Development Application should outline measures to avoid, minimise, reuse and recycle waste generated during the construction of the new stadium.
- An Operational Waste Management Plan is to be prepared and be submitted with the Stage 2 Development Application.

Wind Impacts

- A Pedestrian Wind Environment Study, including wind tunnel testing, is to be prepared based upon detailed stadium design and submitted with Stage 2 Development Application.
- The Noise and Vibration Assessment submitted with the Stage 2 Development Application is to include an assessment of the potential for the detailed stadium design to generate wind noise and any consequent impacts upon nearby sensitive noise receivers.

Construction Management

- A Construction Management Plan is to be prepared and submitted with the Stage 2 Development Application outlining the practices and strategies to be implemented during the construction phase in order to avoid, reduce and mitigate the environmental impacts of construction activities.

Communications, Community and Stakeholder Engagement

- Further community consultation is to be undertaken in relation to the detailed design, construction and operation of the new stadium prior to the lodgement of the Stage 2 Development Application and outlined in a Consultation Outcomes Report.
- The Stage 2 Development Application is to outline measures to provide for ongoing community consultation and engagement following the commencement of operations for the new stadium.
- Infrastructure NSW will liaise with the Centennial and Moore Park Trust, City of Sydney Council and Transport for NSW to promote awareness of and integration of the new Sydney Football Stadium with surrounding areas and key projects.

Safety and Security

- A Crime Prevention Through Environmental Assessment Report is to be prepared by a qualified crime risk assessor based upon the detailed stadium, public domain and landscaping design and is to be submitted with the Stage 2 Development Application.
- Security of the stadium during event and non-event periods is to be considered during the detailed design of the stadium in accordance with the Security Principles Report prepared by Intelligent Risks (May 2018).

Mitigation Measures
Groundwater • An updated Groundwater Assessment Report is to be prepared and submitted with the Stage 2 Development Application. A Groundwater Management Plan is to be prepared prior to the commencement of construction works pursuant to any future Stage 2 Development Application.
ESD • Detailed design of the new stadium is to target a minimum of a LEED Gold rating, or an equivalent rating under another recognised standard such as Green Star. • Prepare a Green Travel Plan for the stadium, highlighting public transport and active transport options for staff and visitors to the new stadium.

Table 9 Mitigation Measures – Stage 1 Demolition

Mitigation Measures
Construction Management • A detailed Demolition and Environmental Management Plan is to be prepared prior to the commencement of works in accordance with the principles set out in, and addressing all issues covered by, the Construction Management Plan prepared by Aver Consulting (June 2018). • The Demolition and Environmental Management Plan is to include detailed measures to ensure that the 90% of demolition waste by weight will be diverted from landfill. • The Demolition and Environmental Management Plan is to include details of measures to control and prevent adverse effects associated with dust during the demolition phase.
Noise and Vibration • All work on site will only occur between the following hours: – 7am and 6pm Monday to Friday; – 8am and 1pm Saturday; – No works on Sundays or public holidays; or – unless otherwise approved in writing by the NSW Department of Planning and Environment due to extenuating circumstances. • The demolition contractor is to implement all mitigation measures and comply with all recommendations of the Noise and Vibration Assessment Report (Arup 2018) that relate to the Stage 1 Demolition works. • The Demolition and Environmental Management Plan is to include a detailed Construction Noise and Vibration Management Plan to ensure that potential noise and vibration activities are managed in accordance with the Noise and Vibration Impact Assessment (Arup 2018).
Transport and Accessibility • A detailed Construction (Demolition) Traffic, Transport and Pedestrian Management Plan is to be prepared prior to the commencement of works which includes details of routes for heavy vehicle demolition traffic to avoid the use of local roads, instructions to be provided to staff and visitors in order to minimise on-street parking in local residential areas, pedestrian egress and protection in association with the ongoing use of the Sydney Cricket Ground, and the protection of pedestrians and cyclists along Moore Park Road and Driver Avenue. • Infrastructure NSW is to ensure regular consultation between the demolition contractor and the Sydney Coordination Office so as to manage and mitigate potential cumulative impacts associated with other development and infrastructure projects.
Heritage • A qualified heritage specialist is to be appointed to provide advice regarding any special protection measures which are to be implemented during the demolition phase to avoid impacts to Busby's Bore. If necessary, an appropriately qualified heritage advisor should supervise sensitive demolition activities in close proximity to the known locations of the Busby Bore shafts within the site. • The Demolition and Environmental Management Plan is to include details of site protection fencing/hoarding and any exclusions zones established in consultation with a qualified heritage consultant that are required to ensure that demolition equipment, plant and activities do not give rise to any physical impacts on the SCG Members and Ladies Stands. • The final Construction Noise and Vibration Management Plan is to be prepared with input from a qualified archaeologist to ensure that appropriate vibration management measures are implemented to avoid impacts on Busby's Bore and ensure that the best available information regarding the location and structural condition of Busby's Bore is considered in the Plan.
Biodiversity • Tree retention and protection is to occur in accordance with the Arboricultural Impact Assessment prepared by TreeIQ (May 2018).
Stormwater and Flooding • The measures outlined in the Erosion and Sediment Control Plan (Arup 2018) are to be implemented during the Stage 1 Demolition phase.

Mitigation Measures

Communications, Community and Stakeholder Engagement

- Infrastructure NSW is to provide regular updates via the project website and other means in order to inform the local community of key events during the demolition phase, including
- A dedicated phone number and email address is to be established and communicated to local residents and businesses as a point of information and contact throughout the demolition process. These contact details are to be displayed clearly at the site and made available via other communications channels including the project website.

Safety and Security

- The contractor is to make arrangements for regular security patrols and installation of site security monitoring equipment from the commencement of site establishment works in order to discourage crime and unauthorised site access.

9.0 Conclusion and Justification of the Proposal

This EIS has been prepared to assess the environmental, social and economic impacts of the SSD Concept Proposal and Stage 1 Demolition works for the redevelopment of the Sydney Football Stadium. The EIS has addressed the issues outlined in the SEARs (**Appendix A**) and Schedule 2 of the Environmental Planning and Assessment Regulation 2000, to consider the relevant environmental planning instruments, built form, and social and environmental impacts resulting from the proposed development. Appropriate mitigation measures have been identified to manage the impacts of the development and inform the detailed design process and the assessment of the Stage 2 Development Application.

The redevelopment of the Sydney Football Stadium aligns with the objectives of the NSW Stadia Strategy 2012 to prioritise investment to achieve the optimal mix of venues to meet community needs and to ensure a vibrant sports and event environment in NSW that delivers social, cultural and economic benefits to the state. The Concept Proposal sets out the broad parameters for the delivery of the new stadium, and seeks approval to commence demolition so as to support the timely delivery of the new facility whilst minimising disruption to the operations of the SCG and the amenity of the surrounding locality. The Urban Design Guidelines and Design Excellence Strategy provide a positive framework to guide the detailed design of the new stadium to ensure that the functional stadium requirements are achieved and that a high standard of architectural and landscape design excellence is achieved.

Having regard to biophysical, economic and social considerations, including the principles of ecologically sustainable development, the carrying out of the project is justified for the following reasons:

- the Concept Proposal is permissible with consent and meets the requirements of the relevant statutory planning controls;
- the area and shape of the site allows for the provision of the Concept Proposal whilst not resulting in any unacceptable adverse impacts on surrounding buildings and uses;
- the redevelopment of the Sydney Football Stadium will provide for a number of significant social, cultural and economic benefits and will deliver a world-class stadium commensurate with Sydney's role as Australia's leading destination for tourism and events;
- the Concept Proposal is capable of achieving design excellence in accordance with the requirements of SLEP 2012, which is assured through a Design Excellence Strategy that has been developed in collaboration with, and to the approval of, the NSW Government Architect;
- the land is well served by existing and future public infrastructure, particularly public transport infrastructure with the future commencement of the CBD and South East Light Rail, and other utilities and public infrastructure are readily available given the current operating nature of the precinct as a major stadium, and services can be augmented to meet the future needs of the new, modern stadium;
- the Concept Proposal provides for the proper protection, conservation and protection of statutory local and State heritage items and heritage conservation areas that affect the site or which are location in the locality, and includes measures to ensure that further cultural and physical heritage investigation informs future development proposals;
- the project has been informed by extensive pre-lodgement community consultation, with feedback from this consultation shaping the end outcome of the Concept Proposal; and
- the proposal is consistent with the principles of ecological sustainable development as defined by Schedule 2(7)(4) of the Environmental Planning and Assessment Regulation 2000, and will support a more ecologically sustainable stadium targeting a minimum standard of a LEED Gold rating; and
- the Concept Proposal seeks to significant enhance the quality of Sydney's major sporting infrastructure, enabling Sydney to prosper as Australia' leading tourism and events destination.

Given the planning merits described above, and the significant benefits associated with the proposed development, it is recommended that the application be approved.