Final Business Case Summary
Stadium Australia

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Infrastructure
New South Wales

About this report

This document summarises the Final Business Case (Business Case) for the redevelopment of Stadium Australia. The stadium, located within Sydney Olympic Park, has 83,600 seats and was constructed as the main venue for the 2000 Sydney Olympic Games. The intent of the project is to redevelop the existing stadium into a permanent rectangular venue with 70,000 seats. This reconfiguration will move seats closer to the field of play and update the stadium to contemporary standards.

The Business Case for the redevelopment of Stadium Australia was developed between September 2018 and March 2019, and was considered by the NSW Government in August 2019 following Gateway reviews and a peer review by the Centre for International Economics.

Strategic context

Stadium Australia is culturally and economically important

Stadium Australia was the focus of the 2000 Sydney Olympics and is culturally important to the residents of Sydney and to Australians more broadly. The Stadium is also economically important and plays a significant role in NSW's major event strategy. It hosts key national sporting events and attracts blockbuster international sport and entertainment.

Events hosted at Stadium Australia create economic activity through ticket sales, television and broadcast rights, advertising, sponsorship and the sale of merchandise. This boosts the economy by contributing directly to output, to Gross Domestic Product and by providing employment opportunities for the local community.

Sporting and entertainment events, particularly major events, also increase intrastate, interstate and international tourism. Events can attract visitors to NSW, and this promotes activity in tourism-related industries such as accommodation, cafes and restaurants, retail and transport. The benefits of the visitor economy are significant[1] and all states compete strongly to attract and retain major events.

The Greater Parramatta to Olympic Peninsula (GPOP) is transforming

Major infrastructure such as stadia can also deliver less tangible benefits by improving the liveability of a city/region/state and in turn, improving its ability to attract and retain businesses, industries and people. There is evidence that social infrastructure such as stadia can increase people's pride in their community and generate wider benefits such as improved social cohesion and inclusion.[2]

Sydney Olympic Park is part of the Central River City and within the Greater Parramatta to Olympic Park (GPOP) growth corridor. GPOP is at the centre of Sydney and the Greater Sydney Commission sees GPOP as "Greater Sydney's true centre – its connected, unifying heart"[3].

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[1] See for example: PricewaterhouseCoopers (June 2015), *Economic impact and benefits analysis of ICC World Cup 2015*.

[2] See for example: Richard Schwester (August 2007) *An examination of the public good externalities of professional athletic venues,* Public Budgeting and Finance, Vol. 27, No. 3, pp. 89-109, Fall 2007. and Bk Johnson, John Whitehead (2000) *Value of public goods from sports stadiums: a CVM approach,* Contemporary economic Policy, vol. 18, issue 1, pp. 48-58.

[3] Greater Sydney Commission (October 2016) *Greater Parramatta and the Olympic Peninsula Vision*.

Growth forecasts are ambitious, and GPOP's development is being supported by infrastructure investment, including the Parramatta Light Rail and Sydney Metro West.

The Sydney Olympic Park Master Plan 2030[4] reflects the GPOP vision and includes targets to double the number of residents and triple the retail space as part of the overall vision for the Park to become a Lifestyle Super Precinct. The redevelopment of Stadium Australia is an important part of this vision.

NSW Government is implementing its plan to invest in sporting infrastructure

In March 2018, the NSW Government announced its intention, subject to a final Business Case, to redevelop Stadium Australia into a 70,000-seat rectangular stadium at a cost of $810 million. This decision is part of the NSW Government's plan to rebuild the major stadia network in Sydney. The *Rebuilding the Major Stadia (2015)* programme[5] outlines the first major investment in sports infrastructure since the 2000 Olympics.

The first project, a new Western Sydney Stadium at Parramatta, is complete and operational. The second project, a new stadium to replace the Sydney Football Stadium has commenced. The redevelopment of Stadium Australia is the third project in the NSW Government's long-term plan.

Project need

Improving the fan experience at Stadium Australia

The fan experience is a key driver of the economic and financial performance of major venues and events. While there are many ways in which people experience a venue, stakeholders at Stadium Australia comment particularly on the viewing distance to the field of play and the impact this has on their match day experience and the general atmosphere within the venue.[6]

Stadium Australia was designed to be used in multiple configurations during the 2000 Olympics. The event calendar at the stadium now revolves around sports played on a rectangular field and major entertainment events. The current configuration does not provide a quality experience for the fans and audience because of the distance from the field of play.

In addition to poor view lines and distances, other aspects of the Stadium that are rated poorly by fans include food and beverage and technology.

The stadium investment helps secure events for the future

The NSW Government's commitment to rebuild its major stadia network recognises that the State needs to act to remain in the event marketplace. The recent development of Adelaide Oval and Perth Stadium has increased the competitiveness of interstate venues. In 2018 Victoria released its Major Stadia Strategy, identifying actions over the next 30 years to maintain its position in the sport and major events market.

Stadium Australia is NSW's largest venue and hosts the events that are of the highest economic value to the State. Without redevelopment, Stadium Australia is likely to become less attractive to hirers. Any loss of major events will have a material impact on the Stadium's revenue, will reduce the economic benefit that flows from visitors to the State and impact Sydney's brand as a major events destination.

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[4] Sydney Olympic Park Authority (2018) *Sydney Olympic Park Masterplan 2030 (2018 Review)*.

[5] Rebuilding the Major Stadia Network, NSW Government announcement, 2015.

[6] Surveys conducted by hirers and the operator of the Stadium provide consistent feedback on the shortcomings of the venue.

Project description

The overarching objectives of the Stadium Australia project are to:

- Enhance NSW's position as a global and sporting destination.
- Retain and increase key national and international events.
- Provide spectators with a world-class experience.
- Accommodate NSW national sporting franchises and national and international events.
- Support transformational change in the GPOP growth corridor.

The objectives are reflected in a detailed project brief. The options that were considered are described in the next section. However, the overarching feature of the project is to secure the Stadium's future as a generator of economic activity by reconfiguring the venue for rectangular sports. This will reduce the viewing distance to the field of play, thereby addressing one of the Stadium's main shortcomings.

Options identification and assessment

Strategic Business Case

A Strategic Business Case to redevelop Stadium Australia was considered by the NSW Government in March 2018. It analysed three options: to remodel and improve the Stadium to deliver approximately 70,000 seats, with seating in the lower tiers closer to the field of play; to demolish and rebuild the Stadium with approximately 70,000 seats; and to demolish and rebuild the Stadium with approximately 75,000 seats. The cost of the options ranged from $810 million to $1.33 billion.

Analysis showed that the economic performance of the three options was within a relatively narrow range, with Benefit Costs Ratios (BCRs) between 0.87 to 0.91. The NSW Government decided that the additional cost and disruption of demolishing and rebuilding the stadium was not justified given the relatively similar economic performance of the options. The NSW Government supported remodelling the existing Stadium with a budget of $810 million and asked that this option be more fully examined, and a Final Business Case prepared.

Final Business Case

During the last 12 months, the design solution has been progressively refined and significantly improved[7]. The resulting design delivers a contemporary Stadium and improves the fan experience by:

- Moving the majority of seats closer to the field of play with steeper rakes, improving the view.
- Providing more food and beverage Points of Sale throughout the stadium and new facilities that will expand the products offered.
- Improving corporate and member facilities, including renewed and relocated corporate suites.

The Business Case makes assumptions about the impact of the proposed improvements to the Stadium. These include the number and type of events that would be held at the Stadium and the likely attendances for each.

[7] This work was led by Cox Architects for Infrastructure NSW, in collaboration with the venue owner and operator.

Base Case

The Base Case is the status quo. The Stadium would continue to operate and would be maintained for the next 30 years but would be otherwise unchanged. The Base case is based on the premise that a lack of investment in the Stadium will see other jurisdictions successfully bid for major events such as State of Origin and the NRL Grand Final and that these events will be held at the Stadium only every second year. This is the benchmark against which the other options have been evaluated.

Option 1

Stadium Australia is reconfigured for rectangular sports with a total capacity of 70,000 with the following changes to improve the fan experience:

- Around 46,000 of these seats are closer to the field and have improved sightlines. The lower and middle seating bowls are relocated to move the front rows as close as possible to the east & west sidelines and the north & south dead-ball lines, and the rake of the lower bowl is increased.
- Food and beverage outlets are refurbished on all levels with new outlets on level 1.
- Corporate suites move from level 3 to level 2, again bringing them closer to the field of play. Member facilities are reconfigured and improved.
- ICT is improved, a new media facility is provided and changerooms are upgraded.
- The roof is extended to provide 100% coverage to the dripline of the north and south stands[8].

Some of these features can be seen in the illustration below.

Artist's impression from Cox Architecture

Option 1A

This Option is the same as Option 1, with the addition of an operable roof. The idea was that a roof would enable the Stadium to be completely enclosed, making it attractive for a range of events not currently held in NSW. The operable roof would extend from the northern and southern ends of the Stadium and close in the middle.

Including a roof in the design is not within the committed budget for the project but was tested to establish if it would produce benefits greater than the additional cost. The subsequent analysis

[8] In the final design, 100% dripline will also be extended to the eastern and western stands.

demonstrated that this case did not perform as well as Option 1 and, in comparing the two options, Option 1 provided greater economic benefit than Option 1A.

Overview of the key design features, costs and demand assumptions

Table 1: Options analysis summary

Options analysis summary			
$FY19	**Base Case**	**Option 1**	**Option 1A**
Design elements			
Total capacity[9]	83,602	70,180	70,180
Roof coverage	88%	100%	100%
Operable roof	×	×	✓
Remaining useful life	30	40	40
Project costs ($m)			
Capital expenditure (P90, incl. escalation)	-	$819.5m[10]	$975.0m
Life Cycle Costs (P90, total over evaluation period)	$352.3m	$414.4m	$446.9m
Opening date	-	Q1 2023	Q3 2023
Demand			
Total annual attendance (average year)	663,000	1,471,500	1,908,500
Annual event calendar	22 - 25	42 - 46	49 - 54

Economic evaluation

A full economic cost-benefit analysis was undertaken of the two options described above in accordance with NSW Treasury guidelines. A standard discount rate of 7%[11] was used to express all costs and benefits in 2019 values.

Costs

The costs of the project are the capital cost and the lifecycle costs of each option, as well as the costs of attracting major events to the venue.

Capital costs[12] include fees and preliminaries, contingencies and escalation over the project construction period. Costs have been estimated at a P90 level of confidence.[13] The Base Case requires no capital cost. The capital cost of Option 1 for purpose of the business case analysis was adjusted to $819.52 million to allow for further escalation (NPV $642.18 million) and the cost of Option 1A is $975.02 million (NPV $748.09 million). However, the budget for Option 1 remains

[9] The target capacity is approximately 70,000 seats.

[10] Additional escalation costs were added to the project in March 2019 to reflect a revised timeframe. However, there are offsetting savings in project contingency which will allow the initial project budget of $810m to be maintained,

[11] With sensitivity testing at 3% and 10%, consistent with NSW Treasury guidelines.

[12] Developed with advice from specialist cost planners, WT Partnership.

[13] Determined by probabilistic analysis, P90 values provide a 90 percent level of confidence that the estimated costs will not be exceeded at project completion.

$810 million. Given that there is now the opportunity to achieve a higher level of design resolution prior to calling for construction tenders it was determined that the contingency sum could be reduced by $9 million to retain a budget of $810 million.

Life cycle costs include all recurring and one-off major maintenance costs and capital replacement costs during the 30 years over which the project has been analysed. Lifecycle costs are required to ensure that the building is functional throughout its full economic life. The life cycle costs of the Base Case are $352.3 million. The life cycle costs of the redevelopment options are expressed as the cost required in addition to those required in the Base Case. The incremental life cycle costs for Option 1 are -$56.77 million (NPV) and for Option 1A -$50.24 million (NPV).[14]

Event attraction costs reflect the fact that the process of securing major events may include the payment of a fee to attract the event to NSW. The Business Case assumes that a fee will be paid for some of the events in the schedule. This is a cost of the project and is included in the Business Case.

Benefits

The project is expected to deliver a range of benefits, not all of which can be reliably quantified. The Business Case considers the social impact of the project, but only the benefits that can be quantified are included in the Cost Benefit Analysis.

The benefits that have been included and quantified in the Business Case are:

- The benefits to consumers: including the direct benefits to people using the stadium and the indirect benefits to the broader population of Sydney.
- The benefits from new and retained economic activity: this includes benefits to businesses and employees from economic activity created by additional visitors to NSW and from activity retained by the State as a result of the redevelopment;
- The value of the stadium at the end of the period being analysed: the Business Case evaluates the project over 30 years. A redeveloped Stadium Australia is estimated to have an economic life of 40 years. The value of the venue during the last ten years of its life is quantified and described as the project's terminal value.

The outcomes of the analysis

The outputs of the final cost-benefit analysis are detailed in the Table below. This incorporates adjustments following the Gateway Review. In this analysis, Option 1 generates a positive net benefit and a Benefit Cost Ratio (BCR) slightly greater than 1. That is, the quantified economic benefits are greater than the associated quantified economic costs.

[14] While the project options each require life cycle costs higher than the Base Case, the NPVs of these expenditures are negative because the Base Case has large life cycle costs early in the evaluation period.

Table 2: Cost benefit analysis of options (incremental to the Base Case)

Cost Benefit Analysis - Present Value - 7% Discount Rate - ($FY19, $m)		
	Option 1	**Option 1A**
Costs		
Project capital expenditure	642.18	748.09
Life cycle costs	(56.77)	(50.24)
Event attraction funding	(0.02)	10.97
Total costs	**585.39**	**708.83**
Benefits		
Consumer surplus - Use and non-use value	411.92	490.19
Producer and labour surplus	144.20	166.19
Terminal value	35.15	40.92
Total benefits	**591.27**	**697.29**
Outputs		
Net benefit	5.88	(11.53)
Benefit cost ratio	**1.01**	**0.98**

Option 1A includes an operable roof. It was included in the Business Case to examine if the benefits that would flow from having a fully enclosed stadium would be greater than the additional costs of adding a roof. This case did not perform as well as Option 1 and, in comparing the two options, Option 1 provided greater economic benefit than Option 1A.

Deliverability

The Stadium Australia project will be delivered by Infrastructure NSW. The venue will be reconfigured within the existing footprint of the stadium and the original structural skeleton of the building will be retained. Given this context, the range of design solutions is constrained, but any design will need to understand and address structural issues that were determined when the stadium was first built.

Procurement

It is Infrastructure NSW's view that the functional and structural challenges of reconfiguring the stadium need to be addressed before the project is offered to the market. A Reference Design that responds to the project objectives is being developed. During the design process, engineering and functionality issues have been addressed, including through consultation with advisors responsible for the initial design and construction of the Stadium.

Producing a Reference Design reduces the design risk and cost risks to the project. The Reference Design will be offered to the market as part of a *DD&C* tender. Expressions of interest will be sought as the basis to establish a short list of proponents who will be invited to tender for the project.

Timeframe

The planning application commenced in mid-2019 with procurement to commence in Q4 2019. An indicative project development program[15] assumes that the Stadium will be off-line from the second half of 2020, and following a construction period, the Stadium is expected to reopen early in 2023 (Option 1).

Key risks and mitigations

The Business Case includes a comprehensive assessment of the risks associated with the project and the way in which each risk is being managed. Reconfiguring the Stadium within its current footprint using a reference design limits the risks associated with planning, design and cost.

Key areas of risk include disruption to stadium users during construction and the capacity of the market to respond during a time of heightened infrastructure activity in NSW. Mitigation measures are in place to address identified project risks.

External review

Consistent with the NSW Government's Infrastructure Investor Assurance Framework[16], Infrastructure NSW routinely assesses business cases and provides advice to Government on the efficacy of their findings. In the case of Stadium Australia, Infrastructure NSW was tasked by Government with overseeing the development of the Business Case. Given these circumstances, the external review of the Business Case was undertaken by NSW Treasury.

Three independent experts in stadium design, construction and operation conducted a Gateway Review[17] in April 2019 of the project's readiness for an investment decision. As a result of the review, event assumptions were further adjusted, together with costs related to attracting major events.

The review concluded that the project was ready to proceed to an investment decision noting that: it is consistent with Government policy; that the delivery schedule of the project had been updated since the Strategic Business Case and that communication with key stakeholders and readiness to negotiate new hire agreements should be prioritised; that mobilisation of resources and governance was now required in preparation for the next phase of the project. All of those matters have since been addressed.

In addition to the Gateway Review, an additional peer review was commissioned from the Centre of International Economics (CIE). The CIE Review examined assumptions associated with the base case and redevelopment options in relation to the event calendar and attendance. Their assessment was that base case was pessimistic, that the major event calendar commitments are short term, and that the future event calendar (over 30 years) is uncertain. CIE also queried the value placed on the fan experience and the inclusion of non-use benefits. CIE noted that changes in those areas would reduce the BCR.

On the other hand, the CIE Review noted that the inclusion of the improvement in Stadium Australia's operating performance in the CBA would add additional benefits, but that any additional benefits are likely offset by the reductions outlined above. Overall, CIE concluded the net impact may see the BCR fall below 1.

[15] Developed with advice from specialist programmers, TBH

[16] Infrastructure NSW (updated October 2018), *Infrastructure Investor Assurance Framework December 2016.*

[17] Consistent with NSW Treasury (February 2017) *NSW Gateway Policy*, tpp 17-01.

The Infrastructure NSW view

The *State Infrastructure Strategy 2018-2038* noted that the NSW Government is investing in its stadia network with the aim of attracting high value national and international events to NSW[18]. Stadium Australia is a high priority project in *the Rebuilding the Major Stadia Network* program and the State Infrastructure Strategy recommended that a Business Case for the redevelopment of Stadium Australia be developed during 2018[19].

Building on a Strategic Business Case that was considered by the NSW Government in March 2018, this Final Business Case examines two options to reconfigure Stadium Australia. The difference between the two Options is the inclusion of an operable roof that would allow the Stadium to be a fully enclosed venue. The economic analysis indicates that Option 1 (with no operable roof) delivers net benefits with a BCR 1.01. The CIE peer review suggests that the BCR may fall below 1. This was also the case for the BCR estimated in the Strategic Business Case (0.87), which was known in March 2018 when the scheme was announced.

Option 1A which includes an operable roof is **not** supported by the final business case. The cost of including an operable roof is outside the project's budget envelope of $810 million and offers a lower BCR of 0.98.

The redevelopment of Stadium Australia was foreshadowed initially in the NSW Stadia Strategy in 2012 and identified as a priority project in *Rebuilding the Major Stadium Network* (2015). The project has a long development history and many potential solutions have been considered. Since the Government's commitment in March 2018 to reconfigure rather than rebuild the Stadium, the design to achieve this has been improved functionally and these improvements are reflected in the expected economic performance of a redeveloped Stadium.

[18] Infrastructure NSW (February 2018), *State Infrastructure Strategy 2018-2038,* pp 209.

[19] Ibid, page 212.