Shore Physical Education Centre

Preliminary Environmental Risk Assessment

Revision: C

Revision Date: 8/06/16

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Project Revision History:

Date	Author	Rev. No.	Scope of Revision
26/05/16	JG	A	Draft for Internal Review
2/06/16	JG	B	Draft for Final Review
8/06/16	JG	C	Final for DA Submission

1. Introduction

1.1. Shore Physical Education Centre

1.1.1. Development Details

The Shore Physical Education Centre ('SPEC') is a development planned for the Sydney Church of England Grammar School at Blue St, North Sydney. The proposed development includes:

1. Demolition of the existing 1970s 25m swimming pool and associated structures, gymnasium, change rooms, weights room, two squash court etc. in the south-eastern corner of Shore Senior School and the residential flat buildings at 4 and 5 Hunter Crescent and 16 William Street
2. Construction of new buildings to be known as the SPEC and alterations/additions to existing buildings comprising:
   (a) Aquatic Centre accommodating a 50m indoor swimming pool (eight lanes)
   (b) Multipurpose Sporting Complex including three basketball courts with tiered seating, gymnasium, weights rooms and other training facilities, change rooms, reception area, staff facilities and amenities
   (c) 11 new classrooms, flexible learning spaces, seminar rooms, other teaching and staff spaces
   (d) Alterations to BH Travers Stage 1 including change room and other upgrades
   (e) A net increase of 38 car parking spaces
   (f) Loading facilities on the Ground Floor of the proposed SPEC
3. New open spaces/courtyards, tree removal/replacement and landscaping of the site including landscaped roof terraces
4. Use of the completed buildings as an *educational establishment* including extension of Shore onto 4 and 5 Hunter Crescent and 16 William Street
5. Building identification signage.

A development application is to be lodged in June 2016. Its location is shown in Figure 1.

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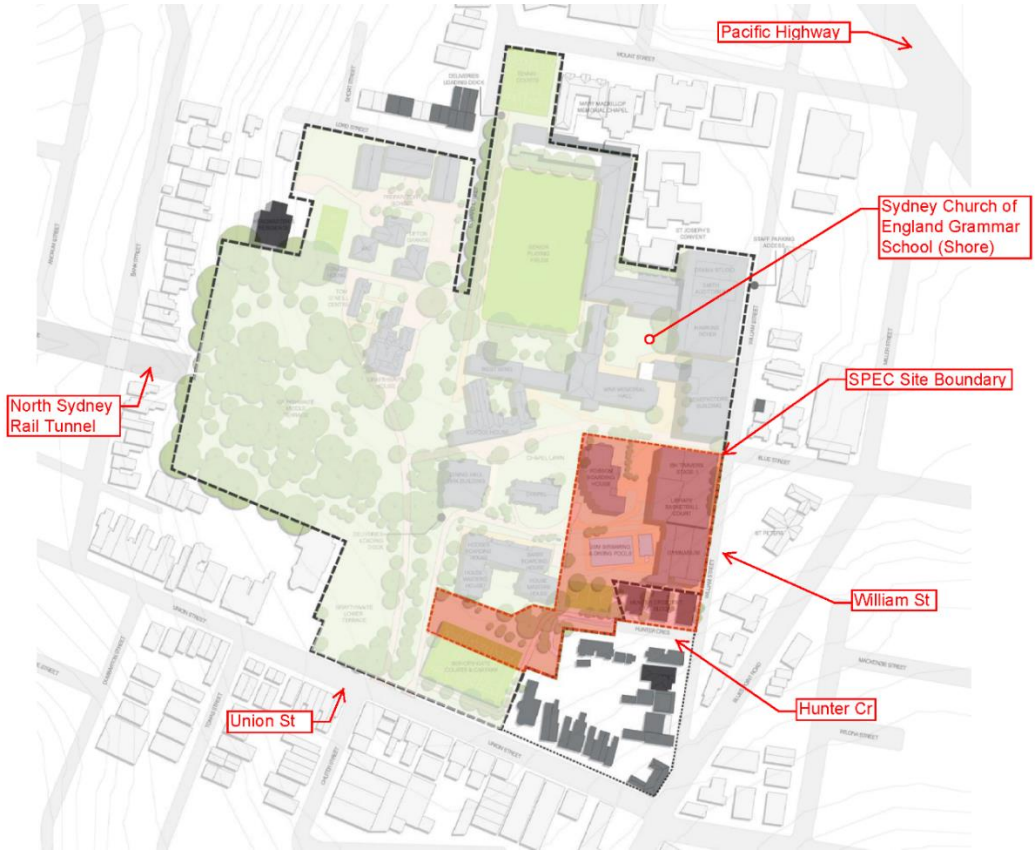

Figure 1 - Site Plan

1.1.2. State Significant Development Application

This report supports a Development Application for Shore Physical Education Centre to be submitted to the Department of Environment and Planning pursuant to Part 4 of the Environmental Planning and Assessment Act 1979 (EP&A Act)

1.1.3. Secretary's Environmental Assessment Requirements

Secretary's Environmental Assessment Requirements have been issued for this development. They cover environmental risk as follows:

> *Notwithstanding the key issues specified below, the EIS must include an environmental risk assessment to identify the potential environmental impacts associated with the development.*
>
> *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.*

This report responds directly to this requirement.

2. Risk Management Process

The term risk relates to an "effect of uncertainty on objectives" (Standards Australia, 2009, pg. 1). The risk management process, as defined in AS/NZS ISO 31000:2009 is a "systematic application of management policies, procedures and practices to the activities of communicating, consulting, establishing the context, and identifying, analysing, evaluating, treating, monitoring and reviewing risk".

Figure 2 provides a visual representation of the steps involved in the risk management process and the importance of communication, consultation and constant monitoring throughout all phases of this process.

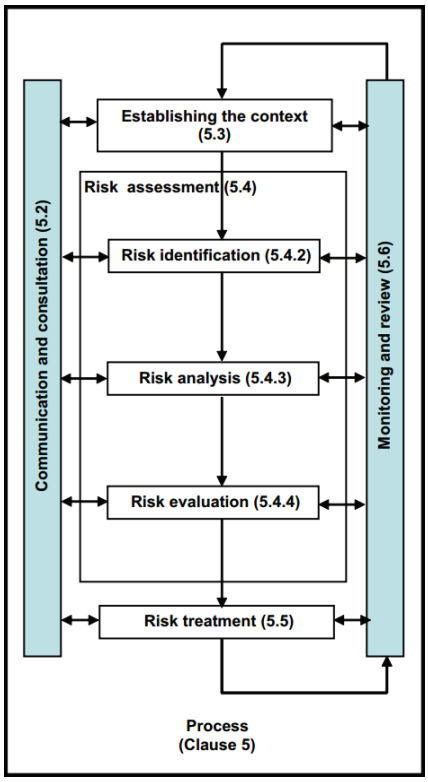

Figure 2 - Risk Management Process (Standards Australia, 2009)

2.1. Communication and Consultation

As Figure 2 illustrates, communication and consultation with relevant stakeholders of the project should be an ongoing event throughout the risk management process at a variety of different levels depending on the audience and at what stage of the project lifecycle the project is in.

"Effective external and internal communication and consultation should take place to ensure that those accountable for implementing the risk management process and stakeholders understand the basis on which decisions are made, and the reasons why particular actions are required" (Standards Australia, 2009, pg. 14).

2.1.1. Community Consultation

The Secretaries Environmental Assessment Requirements outlines the requirements for community consultation as follows:

During the preparation of the EIS, you must consult with the relevant local, State or Commonwealth Government authorities, service providers, community groups and affected landowners. In particular you must consult with:

- *North Sydney Council;*
- *Transport for NSW; and*
- *Roads and Maritime Services.*

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.

A Community Consultation Report (P07-TEM-010) has been prepared by EPM Projects, supporting the Development Application for the proposed development.

2.2. Establish the Context

2.2.1. Establishing the Context of the Risk management Process

"The objectives, strategies, scope and parameters of the activities of the organisation, or those parts of the organisation where the risk management process is being applied, should be established" (Standards Australia, 2009, pg. 16).

Shore has identified the following objectives for the proposal:

- Realisation of the follow aims of Shore:

  Shore's dynamic tradition is founded on authentic and transformative Christian faith, with emphases on engaged rigour in academic work, relational service of others, growth in character, personal best in games and co-curricular activities. With this as its foundation, and within the terms of its charter, Shore seeks to be the leading comprehensive School in Australia.

  Shore therefore fosters a learning community for its students and staff which:

  - Promotes a Christian understanding of the world and society in which we live
  - Pursues and celebrates academic performance in a culture of learning and thinking
  - Challenges all to be responsible citizens with an attitude of service to others
  - Welcomes new experience and learning at all stages of life
  - Lives according to the Christ-like virtues of humility, perseverance, courage and love of others
  - Develops individual gifts and talents and cultivates the habits of successful team membership
  - Develops the health, fitness and welfare of students.

Satisfaction of the physical education demands of the School community arising from the following:

- Increased enrolment (965 in 1991; 1470 in 2016) has placed a far greater demand on the North Sydney facilities for subject delivery and the co-curricular program.
- The School provides after hours recreational facilities for 207 boarders

- The introduction of PDHPE (Personal Development, Health and Physical Education) as a junior and HSC subject and its increasing popularity along with syllabus requirements in recent years has placed a need for additional and improved Physical Education facilities
- Shore's PE/PDHPE staff has increased in line with the growth of the subject, from two in 1998 to 10 in 2016 requiring a larger workspace and the provision for supervisory staff required in the gymnasium or weights training areas
- Smaller class sizes have led to more sets (classes) in each year group in a subject which places more demand on the number of available classrooms at any given time. Shore currently has a very high percentage of classroom use which allows for little flexibility in the teaching programme. In short, there are no spare classrooms and thus no ability to refurbish any area and improve the learning environment because every resource is constantly in use
- Basketball has increased in size and popularity over recent years, with 44 teams in 2016 compared to 24 teams in 1998. Shore is currently limited by the provision of only two indoor basketball courts. There is very little spectator seating for basketball games. The Mount Street basketball courts are substandard leaving the three outdoor Bishops Gate Courts as the main basketball facility which are unusable in inclement weather. The School also relies on off-site courts to fulfil demand. This involves the transportation of basketballers to and from training by bus rather than training being 'on-site'
- The outdoor swimming pool (built in the 1970s) is no longer adequate for the School's needs and is showing the natural signs of an aging facility. It was built as a recreation facility but now needs to meet the needs of the School's curriculum and co-curricular program. The existing pool cannot accommodate water polo or swim squad training and is precluding development of other water activities for students
- Since the construction of the current building and facilities (1970s), there has been a significant change in the nature of training for games involving a considerable amount of weight and circuit training across all age groups, ability levels and sports. Existing demand exceeds capacity of the indoor facility is poorly ventilated and the current layout inhibits good supervision
- Need to improve other associated facilities including change rooms, first aid, lost property, student lockers, function spaces and storage for PE and sporting equipment.
- Provision of additional on-site parking to accommodate the current demand for parking generated by weekend sport fixtures played at the School. This will relieve pressure on the surrounding streets.

2.3. Defining the Risk Criteria

This risk assessment aims to identify and assess the environmental risks associated with the proposed development during both construction and operation. The following key areas form the basis of this assessment:

- Noise and vibration
- Traffic and parking
- Heritage
- Visual and built form

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- Amenity of adjoining properties
- Air and water quality
- Rail Tunnel Below

A qualitative risk assessment has been prepared in accordance with AS/NZS ISO 31000:2009 *Risk management - Principles and guidelines*. The level of risk is assessed based on the likelihood of an event occurring and the consequence of that event. A treatment to mitigate the likelihood or consequence is proposed and the residual risk assessed. A description of the levels of 'likelihood' and 'consequence' is provided below.

Likelihood	Description
1. Rare	May occur only in exceptional circumstances
2. Unlikely	Could occur at some time
3. Possible	Should occur at some time
4. Likely	Will probably occur in most circumstances.
5. Certain	Expected to occur in most circumstances.

Consequence	Description
1. Insignificant	Short term negligible impact.
2. Minor	Short term reversible impact.
3. Moderate	Medium term reversible impact.
4. Major	Medium term potentially irreversible impact.
5. Critical	Long term irreversible impact.

Table 1 - Risk assessment 'likelihood' and 'consequence' description

		Consequence				
		1 Insignificant	2. Minor	3. Moderate	4. Major	5. Critical
Likelihood	1. Rare	**2** Low	**3** Low	**4** Moderate	**5** Moderate	**6** High
	2. Unlikely	**3** Low	**4** Moderate	**5** Moderate	**6** High	**7** High
	3. Possible	**4** Moderate	**5** Moderate	**6** High	**7** High	**8** Extreme
	4. Likely	**5** Moderate	**6** High	**7** High	**8** Extreme	**9** Extreme
	5. Certain	**6** High	**7** High	**8** Extreme	**9** Extreme	**10** Extreme

Table 2 - Risk matrix

2.4. Risk Analysis

The results of the environmental risk assessment are presented in Table 3. This provides a risk rating prior to any mitigation and the residual risk after mitigation.

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Table 3 - Environmental Risk Assessment

Item	Phase C=Construction O=Operation	Potential Impact	Unmitigated Risk L	C	R	Proposed Mitigation Measures	Residual Risk L	C	R
Noise & Vibration	C	▪ Increased noise and vibration during construction activities	4	3	7	▪ Implementation of Construction Noise and Vibration Measures which considers the construction methodology and details specific mitigation measures in accordance with the DECCW Interim Construction Noise Guideline.	4	2	6
	O	▪ Increase in noise levels due to operation of the facility	2	2	4	▪ The William & Hunter St facades will be acoustically treated to mitigate the noise and vibration spilling into public spaces. ▪ The facilities replace existing facilities of the same type used for the same purpose and noise emissions will be consistent with current operations. Noise from plant will be controlled by standard engineering noise controls.	2	1	3
Traffic & parking	C	▪ Increased construction traffic on surrounding local roads	5	3	8	▪ Prior to construction a construction traffic management plan will need to be prepared by the chosen builder. This will need to include access to the site for construction activities. It will also include access around the site for the public including pedestrians and cyclists. A preliminary construction traffic management plan is located in the Traffic Report.	4	3	7
	O	▪ Increase in traffic and parking on local roads during operation	2	2	4	▪ The new facility will not increase the number of staff or students attending the School ▪ Additional parking is proposed to address existing parking shortages which will help ease the strain on local roads.	1	1	2
Heritage	C	▪ Impact on heritage items	3	3	6	▪ The Heritage Assessment and Impact Statement (HAIS) prepared by GML Heritage describes the development has having a respectful relationship with the heritage significant buildings on the subject site and those in the vicinity.	3	2	5

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Item	Phase C=Construction O=Operation	Potential Impact	Unmitigated Risk L	Unmitigated Risk C	Unmitigated Risk R	Proposed Mitigation Measures	Residual Risk L	Residual Risk C	Residual Risk R
						▪ The HAIS makes a number of recommendations that will be implemented during demolition and construction of the SPEC and carpark extension.			
Amenity of Adjoining Properties	O	▪ Visual impact of the building when viewed from William St. ▪ Increased overshadowing of neighbouring residences. ▪ Reduced privacy of neighbouring properties	2	2	**4**	▪ The building massing is configured to step down the hill in response to natural landform and ensure compatibility with the scale of surrounding buildings. The main roof for the Courts Hall is stepped back from the William Street and Hunter Crescent frontages, with lower components running along these boundaries, to reduce the perception of height ▪ The SPEC has been designed to satisfy NSDCP 2012 solar access control. Cox Richardson has prepared detailed shadows diagrams (A.DA-8001 - A.DA-8013, Appendix F) ▪ that compare the impact of existing development on the site ▪ The SPEC façade has been design to limit privacy and overlooking of the adjoining properties. This is	1	1	**2**
Air & Water Quality	C	▪ Potential for reduced air and water quality during construction	3	3	**6**	▪ Prior to commencing on site, the Principal Contractor will be required to prepare a Construction management Plan which will address air & water quality control measures.	2	2	**4**
Rail Tunnel Below	C	▪ Potential for excavation and construction activities to impact on the North Sydney rail tunnel below	3	4	**7**	▪ JK Group have completed two-dimensional finite element analysis (27283SYrpt) to model the potential impact of the existing rail tunnels on the proposed development. The modelling has shown that the effect of the proposed development will induce cumulative movements of the tunnels to be not greater than 3mm	2	2	**4**