

APPENDIX D – ENVIRONMENTAL RISK ASSESSMENT AND MITIGATION MEASURES BARKER COLLEGE SSD-31822612

The following section provides recommendation for mitigation measures in response to potential impacts identified in **Section 6** of the EIS. The structure of mitigation measures is based on the **DPE's** hierarchy of approaches for managing impacts identified in the *Draft Environmental Impact Assessment Guidance Series* released by **DPE** in June 2017, as:

- Performance based measure identify performance criteria that must be complied with to achieve an appropriate environmental outcome but do not specify how the outcome is to be achieved.
- **Prescriptive measure** require action to be taken or specify something that must not be done.
- Management based measure identify one or more management objectives that must be achieved through the implementation of a management plan.

Following the implementation of appropriate mitigation measures as recommended, it is determined that the proposal will not result in any significant adverse impacts on the surrounding environment. The following table illustrates how the matters raised within the SEARs will be addressed.

This analysis comprises a qualitative assessment consistent with AS/NZS ISO 31000:2009 *Risk Management–Principles and Guidelines* (Standards Australia 2009). The level of risk was assessed by considering the potential impacts of the proposed development prior to application of any mitigation or management measures. In accordance with the SEARs, the Environmental Risk Assessment (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.

Risk comprises the likelihood of an event occurring and the consequences of that event. For the proposal, the following descriptors were adopted for 'likelihood' and 'consequence'.

Likelihood			Consequence			
А	Almost certain	1	Widespread and/or irreversible impact			
В	Likely	2	Extensive but reversible (within 2 years) impact or irreversible local impact			
С	Possible	3	Local, acceptable or reversible impact			

Likelihood			Consequence			
D	Unlikely		Local, reversible, short term (<3 months) impact			
E	Rare	5	Local, reversible, short term (<1 month) impact			

The risk levels for likely and potential impacts were derived using the following risk matrix.

LIKELIHOOD

		Α	В	С	D	Е
	1	High	High	Medium	Low	Very low
Щ	2	High	High	Medium	Low	Very low
NENC	3	Medium	Medium	Medium	Low	Very low
ISEQ	4	Low	Low	Low	Low	Very low
CON	5	Very low				

The results of the environmental risk assessment for the proposed development are presented in the below table and are based upon the range of technical and specialist consultant reports appended to the EIS. The table has directly related mitigation measures responding to each impact also based upon the range of technical and specialist consultant reports appended to the EIS.

N.B. 'O' – Operational; 'C' – Construction

'Pe' – Performance based mitigation measure; 'Pr' – Prescriptive based mitigation measure 'Ma' – Management based mitigation measure

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Traffic and Transport	Impacts on road network from	C & O	D	4	Low	Implementation of a Green Travel Plan and Operational Transport and Access Management Plan prepared by TTPP	Ма	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
	construction and operational phase. Additional demand on car parking spaces.					Finalise and implementation Preliminary Construction Traffic Management Plan prepared by TTPP. The proposed development maintains the existing provision of parking on site.		
Noise and Vibration	Noise generation during the construction and on-going operation	C & O	D	3	Low	Implementation of the recommendations contained within the Acoustic Report prepared by Acoustic Logic.	PE and Ma	Low
Visual Impacts	Adverse visual impacts to surrounding developments	0	E	4	Very Iow	Detailed design and articulation to be considered as part of the future detailed design of concept envelopes.	Pe	Very low
Privacy	Adverse impact on visual privacy of surrounding residential properties	0	E	5	Very low	Maintain proposed building setback and landscaping along the street frontage side boundaries.	Pe	Very low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
Environmental Performance / ESD	Irreversible increase in energy usage.	C & O	E	5	Very Iow	Adhere to ESD measures within the ESD Report prepared by Steensen Varming.	Pe	Very low
Contamination	Exposure of contamination or hazardous materials during construction and operation.	C & O	D	4	Low	Adopt the recommendations of the Preliminary Site Investigation prepared by JKE including detailed investigations following demolition works on site.	Ма	low
Heritage	Advise impact to the heritage significance of Barker campus.	0	D	4	Low	No mitigation measures required	Ма	Low
Tree removal	Impact on retained trees	С	D	4	•	Adhered to the Arborist Report recommendations prepared by Civica,	Ma	Low
Aboriginal Heritage	Disturbance of previously unidentified items of aboriginal heritage	С	D	4	Low	No further archaeological assessment is required for the study area. Although general measures will need to be undertaken. If the changes are made to the proposed works and impacts occur beyond the defined assessment boundary further investigations will be required and an addendum ACHA undertaken.	Ма	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
						Aboriginal objects are protected under the NPW Act regardless of whether they are registered on AHIMS or not. If suspected Aboriginal objects, such as stone artefacts are located during future works, works must cease, and an archaeologist called in to assess the finds. If the finds are found to be Aboriginal objects, Heritage NSW must be potified		
						under section 89A of the NPW Act. Appropriate management and avoidance or approval must then be sought if Aboriginal objects are to be moved or harmed.		
						In the extremely unlikely event that human remains are found, works should immediately cease, and the NSW Police should be contacted. If the remains are suspected to be Aboriginal, the Heritage NSW may also be contacted at this time to assist in determining appropriate management		
Archaeological Heritage	Found or disturbance of previously unidentified earlier structures, or	С	E	5	Very Iow	No further archaeological assessment is required for the study area.	Ма	Very low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
	associated occupational deposits that are of Archaeological significance.							
Waste	Excessive waste generation.	C & O	E	5	Very Iow	Construction waste The successful construction contractor will be responsible for finalising the detailed construction Waste Management Plan (WMP). Operation waste Implementation of the Operational Waste Management Plan (WMP) prepared by MRA Consulting	Ма	Very low
Stormwater Adverse impact on the quality of stormwater runoff (Operation).	Stormwater Adverse impact on the quality of stormwater runoff (Operation).	С	D	4	Low	Implementation of the Civil Engineering Report prepared by TTW as part of the detailed design process	Pe	Low
Social Impact	General disruption to community associated	C & O	D	4	Low	 Implement the all the recommendations of the SIA Continue to communicate with stakeholders and the community about 	Ма	Low

SEARS	Potential Impact	Stage of Project	Likelihood	Consequence	Risk Level	Approach	Mitigation Measure (Pe/Pr/Ma)	Residual Impact
	with construction and operation					the implementation of measures to reduce the negative impacts of traffic and parking around the school.		
Construction	Construction Impacts associated with public safety, visual amenity, noise, waste and traffic management in the locality during construction	С	D	3	Low	Prepare a Construction Management Plan based on the recommendations of the Acoustic Report prepared by Acoustic Logic and the CTMP prepared by TTPP.	Ма	None
Soil and Water	Impact on water table	C & O	D	4	Low	No mitigation measures requires	Pe	Low
Infrastructure provision	Adequate connection to infrastructure and utilities and adequate infrastructure capacity.	0	Ε	5	Very Iow	If works impact a service providers infrastructure, stop works and contact immediately.	Pe	Very Low