Sandrick PROJECT DIRECTIONS

Env. Risk Assessment

SCECGS REDLANDS, CREMRONE
272 Military Road, Cremorne

Concept Proposal and Stage 1 Development Application
Preliminary Environmental Risk Assessment

REDLANDS
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1. INTRODUCTION

1.1 Project Overview

This Environmental Risk Assessment **(ERA)** has been prepared on behalf of SCECGS Redlands Ltd **(the Proponent)**. It accompanies an environmental impact statement **(EIS)** prepared in support of State Significant Development Application (SSD 6454) for the staged development of the SCECGS Redlands School Senior Campus **(Redlands)**.

This Development Application **(DA)** seeks a staged development approval comprising a concept proposal for the school over five stages and consent for a detailed proposal for the first stage development referred to as "Stage 1". Details of the project are described below:

Concept Proposal: A Concept Proposal has been prepared for the site to guide its future redevelopment and is intended to provide a statutory framework for the long term planning of the site.

The Concept Proposal will be delivered in five stages and will generally involve the following buildings and works:

Stage 1 – New Learning Hub:

- Demolition of existing buildings and structures.
- Construction of a new multi-purpose education building with basement car park and associated vehicular entry off Gerard St.
- Temporary fitout of a portion of the basement car park shell for music and general education uses.
- Construction of landscaped podium over new basement car park and music facilities.
- Creation of a new internal vehicular link between Waters Rd and Military Rd.

Stage 2 - Sports and Performing Arts Centre:

- Demolition of existing buildings and structures.
- Construction of a new sports and performing arts centre.

Stage 3 - Redlands Hall, Roseby Building and Liggins Building Refurbishment:

- Internal alterations and additions of existing buildings.

Stage 4 - Humphery Learning Hub and Resource Centre:

- Construction of a new multi-purpose education building with swimming pool and associated facilities at roof top level.
- Decanting of temporary music facilities upon completion of the new Humphery Learning Hub providing additional car parking.

Stage 5 - Adams Centre Extension:

- Alterations and additions to the Adams Centre at 219 Military Road.

Detailed Proposal for "Stage 1" development – New Learning Hub:

- Demolition of existing buildings and structures (Mowll Building, 1, 3, 7, 9 and 11 Gerard Street, 7 and 8 Monford Place, staff offices, multi-purpose building and Design and Technology buildings on the western boundary).
- Fit-out of 7 and 8 Monford Pl for temporary use as an educational facility.
- Construction of a new purpose built education building generally comprising a four storey building with basement car park and outdoor learning area at roof level.
- Temporary fitout of a portion of the basement car park shell for music and general education uses.
- Construction of landscaped podium over new basement car park and music facilities.
- Creation of new vehicular access road off Gerard Street for the new basement car park.
- Creation of new internal vehicular access link facilitating ingress from Waters Rd and egress onto Military Rd.
- Associated landscaping improvements.
- New services infrastructure.
- New servicing area including loading dock and waste enclosure.
- Erection of temporary demountable classrooms.

1.2 The Site

The Senior Campus, registered address 272 Military Road, Cremorne, is primarily located on the northern side of Military Rd and covers an area of approximately 14,930m^2. The site is bounded by Military Road and Monford Place to its south, Winnie Street to its east and Gerard Street and Waters Road to its north.

The site extends to the southern side of Military Road, registered address 213 Military Road, Cremorne, which covers an additional area of approximately 590m^2. This site, known as the Adams Centre, is bounded by Military Road to its north and Hampden Avenue to its west.

Figure 1 – SCECGS Redlands, Senior Campus Building Identification Plan

In conjunction with Table 1, Figure 1 illustrates the existing building referencing terminology employed by Redlands. The key areas impacted upon by the detailed proposal for Stage 1 (i.e. the Learning Hub) are reference items 2, 5, 8, 9, 12, 14, 15, and 18 to 22.

Ref	Building Details
1	Adams Centre
2	Staff offices
3	Main reception and administration (2 Monford Place)
4	Hattersley Sports Courts
5	Multi-purpose building accommodating medical room, meeting rooms, staff rooms and classroom
6	Liggins Building
7	Roseby Building (drama studio and science)
8	Residential flat building (8 Monford Place)
9	Residential flat building (7 Monford Place)
10	Residential flat building (5 Monford Place)
11	Dwelling house (6 Winnie Street)
12	Design and technology
13	Canteen & assembly hall
14	Mowll Building
15	Design and technology (21 Waters Road)
16	Humphery Building (Humanities / library)(23 Waters Road)
17	Lang Gymnasium (25-27 Waters Road)

18	Facilities/ICT (1 Gerard Street)
19	Music tuition (3 Gerard Street)
20	Performing arts (7 Gerard Street)
21	Music (9 Gerard Street)
22	Visual arts (11 Gerard Street)

Table 1 – Schedule of Buildings Comprising the Senior Campus

1.3 Scope and Boundaries

This ERA has been prepared generally in accordance with AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines and ISO/IEC 31010:2009 Risk Management – Risk Assessment Techniques to identify the potential environmental impacts associated with the development as required of the Secretary General's Environmental Assessment Requirements **(SEARS)**, formerly known as the Director General's Environmental Assessment Requirements **(DGRs)**, issued 23 April 2014.

This ERA has been prepared to address environmental risks associated with the proposed Stage 1 development only. As this project is it still in an early phase of the project lifecycle, it is expected that further risks will be identified in future phases; the risk assessment matrix contained in Appendix A shall be refreshed accordingly with coordinated advice from the lead and secondary consultant team.

Given the constrained nature of the site as well as the comprehensive delivery sequence for the Stage 1 development, it is anticipated that the mitigation measures detailed within this ERA may establish a framework for managing comparable risks identified in future stages of the Senior Campus Master Plan **(Master Plan)**.

This ERA identifies and prioritises perceivable risks as well as recommends appropriate mitigation strategies for consideration. Elimination of these risks is the primary objective however where this is not feasible, control measures have been recommended for implementation and ongoing monitoring as appropriate.

2. RISK MANAGEMENT PROCESS

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

Figure 2 below 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.

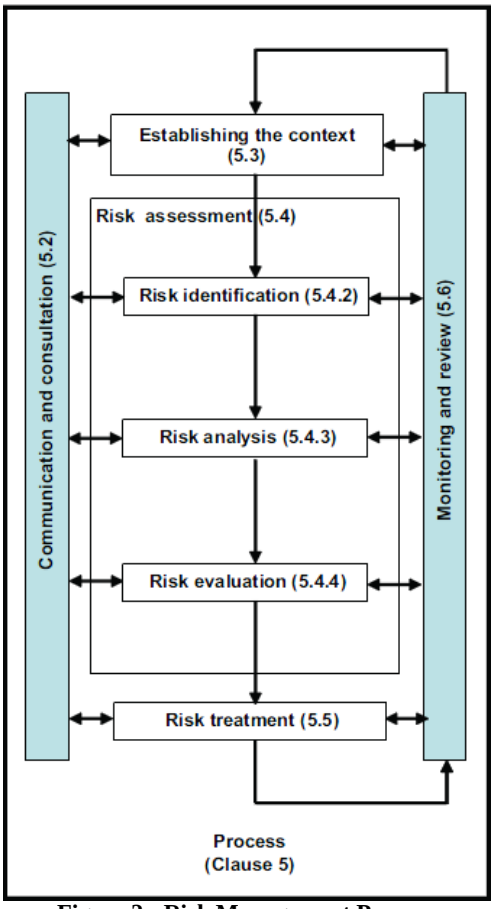

Figure 2 - Risk Management Process

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).

Internal Communication

In addition to regular face-to-face meetings, Project Control Group **(PCG)** meetings and design workshops, online project documentation management and communication portals such as Aconex and Microsoft SharePoint are an effective platform to ensure the immediate project team, and all relevant internal stakeholders as invited, remain up to date with the latest project information.

Relevant project information may include, but not be limited to, development approvals, authority correspondence, project programmes as adjusted from time to time (e.g. design, procurement, construction etc.), specialist consultant plans and documentation and relevant certifications.

The aforementioned examples also provide a universal platform for online correspondence with all members of the project team ensuring all members of the team are aware of the key issues associated with the project and are accountable for the delivery of their works.

Other relatively inexpensive methods of online project collaboration include cloud storage of project documentation using a platform such as Dropbox or equivalent, and for smaller files and tracking correspondence, Microsoft Outlook or other equivalent email clients.

The project team currently utilise a combination of Dropbox and Microsoft Outlook to manage project documentation and communication; the benefits of adopting a portal such as Aconex and/or Microsoft SharePoint during future phases of the project, including construction, shall be considered in due course.

Community Consultation

In projects of this scale, community consultation is a key component in maintaining transparency throughout the development process with the immediate and wider community. Each consultation session serves as a platform for external stakeholders to raise key issues to the project team for consideration.

Equally, and in respect to the current phase of this project, these sessions can also be used as an informative platform for the project team to provide key information on:

- Intricacies of the development including the project's need, objectives, design concept, constraints and opportunities.
- Perceived impacts the development may have on external stakeholders such as businesses, home owners and tenants.
- The status of the development in relation to key project milestones such as timing of future consultations, anticipated timing of authority approvals, target construction commencement and duration etc.
- Amendments to the design and/or DA generally in response to community feedback from earlier consultations.
- Details regarding the delivery sequence for the project including perceived impacts on adjoining residences and the public domain during construction.
- Changes to pedestrian and/or vehicular movements during construction and/or operation of the new facilities.
- Key points of contact to submit ongoing enquiries about the project to the nominated person on the project team.

Redlands has been diligent with their communication strategy during the preparation of the DA, meeting on numerous occasions with the following stakeholders:

- North Sydney Council **(Council)**.
- Roads and Maritime Services **(RMS)**.
- The immediately adjoining Bougainvillea apartments.
- The wider North Sydney community generally.

A communication link has also been established by Redlands' consultation team, Elton Consulting, to encourage ongoing community feedback generally.

A construction specific communication strategy may be developed by the project team at the appropriate time to ensure the immediate community are informed of:

- Construction status updates generally.
- Anticipated timing and nature of noise generating works.
- Impacts on traffic, parking and/or pedestrian pathways as a result of construction works.
- Proposed changes to construction hours to facilitate key works.
- General construction housekeeping strategies.

Similar to the current communication link established by Elton Consulting on behalf of Redlands, a point of contact may be nominated by the project team during the construction phase of Stage 1 to ensure the community have a platform to submit enquiries to and/or register a complaint.

2.2 Establishing 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).

The primary objectives of the Master Plan are to:

- Enable an excellent Academic Program.
- Support a fulfilling and diverse extra-curricular experience.
- Create an inclusive, supportive and secure pastoral environment.
- Attract and retain exceptional staff.
- Achieve productive industry, community and parental partnerships.
- Maintain a robust and flexible operational infrastructure.
- Develop efficient, effective, expressive and environmentally sustainable facilities.
- Embody an inclusive, transparent and strong governance model.

The scope of works to which the ERA applies is consistent with the proposed Stage 1 development comprising of the following sub-stages:

- Stage 1A:
    - Internal fit-out and refurbishment of 7 and 8 Monford Place for use as temporary learning areas for Visual Arts and Music, including amendments to achieve compliance with the National Construction Code (**NCC**) (inclusive of the relevant accessibility provisions) and the Disability Discrimination Act (**DDA**).
    - Construction of temporary landscape in the Military Road car park.
    - Reconfiguration of remaining area within Military Road car park to achieve an efficient layout for deliveries and visitor parking (including necessary turning circles).
    - Demolition of existing landscape in the open space north of the existing Mowll Building and erection of 7x temporary demountables.
    - Decant learning areas within Gerard Street cottages (i.e. 3, 7, 9 and 11 Gerard Street) into 7 and 8 Monford Place as well as temporary demountables.
    - Demolition of 1, 3, 7, 9 and 11 Gerard Street.
- Stage 1B:
    - Relocation and augmentation of existing electrical substation located on Waters Road frontage.
    - Relocation of existing Gerard Street light pole in-front of 9 Gerard Street.
    - Excavation, retention and structure of basement car park shell.
    - Internal fit-out of interim Music Faculty.
    - Infrastructure works including new sprinkler pump room and mechanical plant room.
    - Decant temporary learning areas for Music (i.e. Monford Place flats and temporary demountables) into new Music Faculty.
- Stage 1C:
    - Relocation of 7x temporary demountables erected in Stage 1C onto suspended slab above new Music Faculty.
    - Erection of additional 7x temporary demountables.
    - Decant temporary learning areas within Monford Place flats into temporary demountables.
    - Decant learning areas within the existing Mowll Building into temporary demountables.
    - Demolition of 7 and 8 Monford Place.
    - Demolition of Mowll Building.
    - Construction of new Learning Hub including fit-out.
    - Key services diversions:
        - Relocate Sydney Water sewer main towards the eastern boundary of the site and discharge into Gerard Street infrastructure

    - Relocate North Sydney Council stormwater main towards the western side of the new Learning Hub, through the Liggins Courtyard and through the pedestrian entry towards the Gerard Street/Waters Road intersection.
    - Construct new overland flow path to accommodate the new path for the stormwater main.
- Stage 1D:
    - Decant learning areas within temporary demountables into the new Learning Hub.
    - Decant Design and Technology, staff offices and Pastoral Care into new Stage 1 facilities.
    - Removal of 14x temporary demountables.
    - Construction of driveway entry to basement car park from Gerard Street.
    - Construction of ramp to facilitate maintenance vehicular access via Winnie Street laneway.
    - Landscaping of new open space above basement car park.
- Stage 1E:
    - Demolition of 3x vacant cottages and 1x demountable on western boundary of the site.
    - Excavation and construction of new internal vehicular link between Waters Road and Military Road.
    - Construction of new waste storage area.
    - Erection of site fencing on Waters Road and Military Road for site security.
    - Construction of new principal pedestrian entry

It is envisaged that the revised Stage 1 delivery scheme will be constructed primarily using Gerard Street for ingress and egress for Stages 1A to 1D inclusive, and Waters Road for Stage 1E.

2.2.2 Defining the Risk Criteria

This report seeks to identify and assess the environmental risks associated with the proposed Stage 1 development during both construction and operation. The following key areas form the basis of this assessment:

- Transport and accessibility;
- Noise and vibration;
- Heritage;
- Stormwater management and dust controls;
- Air quality;
- Biodiversity;
- Waste; and
- Crime.

Using Table 2 and Table 3, the likelihood and consequence of each identified risk is assessed numerically against the pre-defined criteria. The risk's likelihood and consequence rating is then used to objectively extrapolate a risk rating using the Risk Assessment Matrix illustrated in Table 4.

The numeric value generated from this process is then reviewed against Table 5 in order to classify the risk and subsequently inform the appropriate strategy to either mitigate or eliminate the risk.

Level	Likelihood	Definition	Probability (%)
1.	Very Unlikely	The event may occur in exceptional circumstances only.	<5
2.	Unlikely	The event is unlikely to occur during the normal course of construction and/or operation.	5-25
3.	Possible	The event may occur during the normal course of construction and/or operation.	26-50
4.	Likely	There is a good chance the event will occur during the normal course of construction and/or operation.	51-90
5.	Almost Certain	The event is almost certain to occur during the course of construction and/or operation.	>90

Table 2 - Risk Analysis Likelihood Definitions

Level	Consequence Level	Definition
1.	Insignificant	The event will resolve in short term negligible impacts.
2.	Minor	The event will resolve in short term minor/reversible impacts.
3.	Moderate	The event will resolve in medium term moderate/reversible impacts.
4.	Major	The event will resolve in medium term major/potentially irreversible impacts.
5.	Catastrophic	The event will resolve in long term irreversible impacts.

Table 3 - Risk Analysis Consequence Definitions

	Likelihood				
Consequence	1. Very Unlikely	2. Unlikely	3. Possible	4. Likely	5. Almost Certain
1. Insignificant	2 – Low	3 – Low	4- Moderate	5- Moderate	6 – High
2. Minor	3 – Low	4 - Moderate	5 – Moderate	6 – High	7 - High
3. Moderate	4 - Moderate	5 – Moderate	6 - High	7 - High	8 – Very High
4. Major	5 – Moderate	6 – High	7 - High	8 – Very High	9 - Very High
5. Catastrophic	6 – High	7 - High	8 – Very High	9 - Very High	10- Very High

Table 4 - Risk Assessment Matrix

Range	Risk Rating	Comments
1 – 3	Low	Mitigated through standard control measures (i.e. detailed design, quality assurance, safety controls etc.).
4 – 5	Moderate	Mitigated by implementing relatively standard environmental measures.
6 – 7	High	Requires in depth assessment and planning to mitigate where possible.
8 – 10	Very High	Requires in depth assessment and planning to eliminate where practicable.

Table 5 – Risk Classification

2.3 Risk Assessment

A consequence/probability matrix was used to assess the identified risks in accordance with AS/NZ ISO 30000:2009 and ISO/IEC 31010:2009. The Risk Register has been included in Appendix A identifying the results of the risk assessment using the pre-established risk criteria detailed in Section 2.2.2.

It is recommended that the risk assessment be undertaken with input from a specialist multi-disciplinary team with a comprehensive understanding of the project's context. The assessment process should initially occur at project inception and then at regular intervals in accordance with the various phases of the project's lifecycle.

2.3.1 Risk Identification

The following areas were considered when identifying risks associated with the construction and operation of the Stage 1 development:

- Sources of risk;
- Areas of impact; and
- Potential consequences.

It is important to note that risks can be both positive and negative and the risks associated with not pursuing opportunities should also be considered.

2.3.2 Risk Analysis

The risk analysis is used to develop an understanding of the key risk items associated with the project and provide input to the risk evaluation stage. In accordance with AS/NZ ISO 30000:2009 this stage of the assessment considers the "causes and sources of risk, their positive and negative consequences, and the likelihood that those consequences can occur".

2.3.3 Risk Evaluation

The risk evaluation stage involves comparing the level of risk against the pre-established risk criteria. This purpose of this stage is to assist management in making decisions about which risks require treatment, prioritisation of treatment methods and the extent to which this treatment will occur.

2.4 Risk Treatment

"Risk treatment involves selecting one or more options for modifying risks, and implementing those options. Once implemented, treatments provide or modify the controls" (Standards Australia, 2009, pg. 18).

The Risk Register in Appendix A illustrates a cyclical process of evaluating each risk, implementing treatment measures and re-evaluating the risk to determine the revised impact severity or likelihood. In the event that the risk is still not tolerable, a new risk treatment

method is implemented and the effectiveness of that treatment is then evaluated. This process continues until the risk has either been eliminated or reduced to a tolerable state.

Risk tolerability was assessed using the As Low As Reasonably Practicable **(ALARP)** principle. Illustrated as a carrot diagram in Figure 3, the essence of this principle is to reduce the magnitude of a risk to a point where the cost of further mitigating the risk is grossly disproportionate to the benefit of the outcome, thus achieving a state that is reasonably practicable.

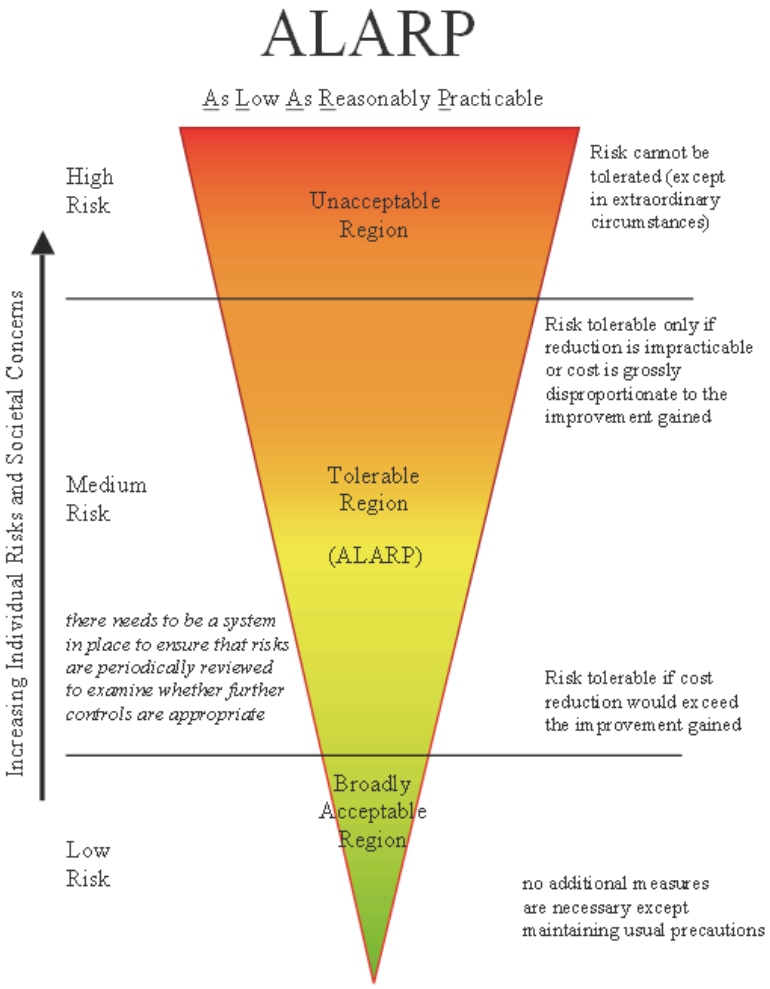

Figure 3 – As Low As Reasonably Practicable Carrot Diagram

2.5 Monitor and Review

To maintain the validity of a risk management assessment, it is critical for management to review risk treatment plans on a regular basis to ensure preliminary assumptions and risk priorities are still appropriate, and to assess the actual results of mitigation strategies against initial expectations.

Stakeholders that can assist with the ongoing process include, but are not limited to, the Client and the Client's representative Project Manager, the Project Architect, the consultant team including engineers of all disciplines and the appointed head Contractor.

Various methods that may be used to proactively identify and manage risks throughout the development process include, but are not limited to:

- Regular meetings with the Client;
- Regular design coordination and/or construction meetings;
- Regular meetings with key stakeholders including the community and relevant authorities and government agencies;
- Regular inspections by the specialist consultant team throughout construction;
- Enforcement of stringent Work Health and Safety **(WHS)** policies including daily review of Safe Work Method Statements **(SWMS)** during construction;
- Regular Safety Toolbox Talks during construction; and
- Independent audits from external Work Health and Safety consultants during construction.

3. DISCUSSION

Generally, the key risk items identified in Appendix A that have a residual risk rating of High in accordance with Table 5 are risks associated with the construction of the proposed development only (i.e. not operation).

Given the nature of the development and the general density of the suburb of Cremorne, the risks classified as High (primarily transport related) are believed to be consistent with the majority of construction activities undertaken in the inner-city suburbs of Sydney, and shall be managed appropriately.

It is important to note that the consequence of certain key risk items such as contamination through spills of fuels and chemicals may remain constant despite the control measures implemented. In these situations, the project team shall exercise diligence in implementing the necessary control measures to minimise the likelihood of the risk occurring to a level that is As Low As Reasonable Practicable.

In accordance with the Risk Management Process, the control measures prescribed in Appendix A shall be implemented and monitored on a regular basis as required. To ensure the validity of the ERA it is imperative that the ERA is reviewed at regular intervals throughout the development process, inclusive of construction.

If, throughout the development process, the prescribed control measures are identified to be ineffective or the risk requires additional control measures, further measures shall be agreed with the Client and project team and implemented as required.

4. REFERENCES

Standards Australia 2009, *AS/NZS ISO 31000:2009 Risk Management – Principles and Guidelines,* Standards Australia, Sydney.

International Organisation for Standardisation 2009, *ISO/IEC 31010:2009 Risk Management – Risk Assessment Techniques,* International Organisation for Standardisation, Geneva.

Figure 3 - As Low As Reasonably Practicable Carrot Diagram, viewed 16 February 2015, <http://www.onsafelines.com/alarp.html>

APPENDIX A – RISK REGISTER

Description of Risk	Impacts	Phase Construction = C Operation = O	Likelihood	Consequence Rating	Initial Risk Assessment Matrix Score	Management Controls	Residual Likelihood	Residual Consequence Rating	Residual Risk Assessment Matrix Score
Transport and Accessibility	Disruption to street parking	C	5	2	7	- Site specific Construction Traffic Management Plan to be prepared and implemented by the head Contractor throughout the construction period and adjusted accordingly as required - Recommendations contained within the Traffic Impact Assessment for Stage 1 prepared by Traffix to be implemented - Significant increase in on-site parking proposed within basement level of development	4	2	6
		O	1	1	2		1	1	2
	Increased traffic congestion	C	5	2	7	- Construction vehicles to enter and exit the site via Gerard St (for Stages 1A to 1D inclusive) and Waters Rd (for 1E) in a forward direction at all times. - Where practical, materials and equipment to be delivered and off-loaded within site boundary to avoid disruption to public roadways. - Heavy vehicle movements in and out of the construction zone to be minimised where practical during AM and PM peak periods. - No impact on current out-of-hours operations of facilities on account of Stage 1. - Allocation of dedicated car spaces for staff to be considered during preparation of an Operational Management Plan.	4	2	6
		O	2	1	3		1	1	2

	Disruption to foot traffic and cyclists	C	4	2	6	- Traffic management controllers to be available as required. - Pedestrian traffic to take priority over construction vehicles. - Increased bicycle storage and end-of-trip facilities for both students and staff. - Allocation of dedicated car spaces for staff to be considered during preparation of an Operational Management Plan.	3	2	5
		O	3	1	4		2	1	3
Noise and Vibration	Noise generation	C	5	2	7	- Construction noise levels generally to achieve site specific targets established by the appointed acoustician. - Use of large noise emitting machinery to be prioritised during standard construction hours where practical. - Scheduled construction activities expected to generate excessive noise to be communicated with impacted residents. - Noise levels to be closely monitored from nearby receivers. - Minimise need for reversing of construction vehicles by implementing sufficient signage and appropriate site safety strategies. - Noise emitting plant and equipment to be acoustically treated in order to achieve site specific noise criteria as established by the appointed acoustician. - Site specific noise criteria to be achieved by implementing advice provided by acoustician in design stage.	4	2	6
		O	2	1	3		1	1	2

	Damage to buildings and property from vibrations	C	3	3	6	- Undertake pre and post construction dilapidation reports. - If required, isolate equipment such as pumps, compressors, generators etc. from ground level via spring mounts, rubber mounts, floating plinths etc. as prescribed by acoustician. - Monitor effected locations during peak construction activities and implement additional mitigation measures as necessary.	3	2	5

Heritage	Impact on heritage buildings qualified within the SoHI prepared by NBRS as having high heritage significance	C	3	3	6	- The Statement of Heritage Impact prepared by NBRS qualifies the following buildings relevant to the Senior Campus as having high heritage significance:
						  - Adams Centre.
						  - Liggins Building.
						The proposed Stage 1 development does not anticipate any amendments to either of the aforementioned buildings. However, particular care should be exercised during demolition of the cottages and demountable on the western boundary of the site as well as during construction of the on-grade internal vehicular link between Military Road and Waters Road as to not adversely impact the Liggins Building. Management controls for this portion of works include:
						  - Measures identified in "Noise and Vibration".
						  - Ensure demolition contractors are appropriately licensed and experienced contractors.
							3	2	5

						- Erect suitable scaffold/hoardings and establish clear and safe work zones. - Implement specific plans to ensure works appropriately deal with safety and environmental issues.			
	Impact on areas containing high archaeological potential.	C	1	1	2	- The Statement of Heritage Impact (Archaeological) prepared by Austral Archaeology has concluded that the Stage 1 development has very low to low archaeological potential and that any possible features would be of local significance with low research potential. No further investigative work is required in regards to the Aboriginal cultural heritage at SCECGS Redlands. - If items perceived to be of heritage significance are uncovered during the course of construction activities, advice will be sought from an appropriately qualified consultant.	1	1	2
Stormwater Management and Dust Controls	Contamination through spills of fuels and chemicals	C	3	5	8	- Procedures to rapidly respond, contain and treat spills to be implemented throughout the course of construction. - Establish exclusion zones for fuels and chemicals as required.	2	5	7

	Excessive dust generation	C	3	2	5	- Minimise external works during windy conditions. - Water exposed/destabilised stockpiles to suppress dust. - Place covers on loads. - Minimise quantity of soil exposure at any one time. - Provide a dedicated vehicle wash down area for construction vehicles prior to leaving site.	3	1	4
	Contamination through sediment and erosion run off	C	3	4	7	- Install temporary sediment and erosion controls around stockpiles and storm water drains as prescribed by the appointed Civil Engineer. - Undertake inspections of sediment control measures and surface run off after each storm event. - Minimise quantity of soil exposure at any one time. - Ground stability to be re-established as soon as practical. - Clean water runoff to be directed away from construction areas. - Vehicles to be cleaned/washed down prior to exiting the construction site to minimise cartage of loose material which may dislodge during transport.	2	4	6
Air Quality	Health risk or loss of amenity due to emission of exhaust gases to the environment (e.g. construction plant and equipment)	C	3	3	6	- Ensure contractors undertake routine maintenance of construction plant and equipment. - Ensure that all vehicles and machinery are fitted with appropriate emission control equipment, maintained in accordance with relevant specifications.	2	3	5

Biodiversity	Damage to trees nominated to be retained	C	2	4	6	- Implement tree protection measures in accordance with Arboricultural Impact Assessment prepared by Bluegum Tree and Care Consultancy. - Exercise diligence by regularly monitoring the effectiveness and condition of specific tree treatment measures and make adjustments as necessary.	1	4	5
Waste	Excessive waste generation	C + O	3	2	5	- Waste generated during construction for disposal to be removed by a licensed waste contractor and disposed of in a licensed landfill facility if/as required. - Segregate and recycle solid wastes generated by construction activities Reduce wastes by selecting, in order of preference, avoidance, reduction, reuse and recycling. - Make purchasing decisions that consider recycled products. - Consider measures and performance based targets for reduction, reuse and recycling options.	2	2	4

Crime	Potential areas of crime associated behaviour	C + O	2	3	5	- Maintain lockable hoardings/temporary fencing to the site throughout the course of construction. - Head Contractor to govern hierarchy of access to the site. - Consider engagement of night time security as required throughout the course of construction. - The design encourages passive surveillance within the site and surrounding areas. - Automatic lighting to be considered at main entries. - Landscape Master Plan improves sightlines by minimising planting density where appropriate. - Site security fencing included within Landscape Master Plan.	1	3	4