

## HSW Risk Assessment – Structures Test Laboratory

For additional information refer to HS\*\*\*[Risk Management Procedure](#)

**Document Number: RA9**

**Faculty/ Service Division: Faculty of Engineering**

**School/Department: Department of Civil and Environmental Engineering**

**HSW Risk: Uncontrolled Risk is High, Controlled is Moderate**

**Assessment date: 08 Jun 15**

**Form completed by: R.A. Powell, HSW Manager**

**Signature:**

**Date:**

**Responsible Line Manager: Dr R. Henry**

**Signature:**

**Date:**

**Description of activity and/or location:**

*Work in Confined Spaces – Wall and Basement entry.*

**Potential Hazards – Confined Spaces**

**Potential Harm – Asphyxiation, Crushing Injury, Bruising, Fractures, Dislocation**

<b>CEE RISK ASSESSMENT 9</b>		
<b>Establishment:</b> Structures Test Laboratory	<b>Assessment by:</b> R.A. Powell	<b>Date:</b> 08 Jun 15
<b>Review Date:</b> 08 Jun 16	<b>Approved by:</b>	<b>Date:</b>

**WORK ACTIVITY**  
**Work in Confined Spaces – Wall and Basement entry.**

**Reference/s**  
 AS/NZS 2865:2001 Safe Work in a Confined Space

**Risk Rating: (C) Consequence x (L) Likelihood = (R) Rating**

Hazard / Risk	Who is at Risk?	Normal Control Measures <i>(Brief description and/or reference to source of information).</i>	Risk Rating			Additional Control Measures Required <i>(To take account of local/individual circumstances).</i>
			C	L	R	
<b>Unsafe personnel</b>	<ul style="list-style-type: none"> <li>Staff</li> <li>Students</li> </ul>	<ul style="list-style-type: none"> <li>Persons must not have injuries or conditions that may be aggravated by entering the confined areas.</li> <li>Persons must be in a fit state to operate the required equipment and not impaired by drugs, alcohol or fatigue.</li> <li>Clothing and PPE to be appropriate to task.</li> <li>Operators are to comply with Safe Work Instructions relevant to the equipment.</li> </ul>	2	1	2	Confined space definition (partial): An enclosed or partially enclosed space that is at atmospheric pressure during occupancy and is not intended or designed primarily as a place of work, and- (a) is liable at any time to- (i) have an atmosphere which contains potentially harmful levels of contaminant; (ii) have an oxygen deficiency or excess; or (iii) cause engulfment; and (b) could have restricted means for entry and exit.

Hazard / Risk	Who is at Risk?	Normal Control Measures <i>(Brief description and/or reference to source of information).</i>	Risk Rating			Additional Control Measures Required <i>(To take account of local/individual circumstances).</i>
			C	L	R	
<b>Equipment activation with persons in confined space.</b>	<ul style="list-style-type: none"> <li>• Staff</li> <li>• Students</li> </ul>	<ul style="list-style-type: none"> <li>• Entry into confined space to be approved by lab staff.</li> <li>• Entry to be logged on tag-in-tag out board.</li> <li>• All potentially harmful equipment should be turned off prior to entry.</li> <li>• A safety stand-by person is to observe entry throughout.</li> </ul>	2	1	2	<p>The person entering the confined space or a competent person authorized in writing should place a lock or tag, or both, on the open circuit breaker or open isolating switch supplying electric power to equipment with hazardous moving parts, to indicate that a person is in a confined space and that such isolation should not be removed until all persons have left the confined space.</p> <p>When a lock is used, the key should be kept in the possession of the person making entry or the competent person.</p> <p>Spare keys should not be accessible except in cases of emergency.</p>
<b>Asphyxiation from contaminated atmosphere.</b>	<ul style="list-style-type: none"> <li>• Staff</li> <li>• Students</li> </ul>	<ul style="list-style-type: none"> <li>• Eliminate/prohibit sources of contamination within the confined space.                             <ul style="list-style-type: none"> <li>○ Gases.</li> <li>○ Welding gear.</li> <li>○ Fuel powered machinery.</li> <li>○ Dust producing equipment.</li> </ul> </li> </ul>	4	1	4	<ul style="list-style-type: none"> <li>• Any requirement to introduce such equipment will require additional controls, upgrading of ventilation/air supply and a rescue plan.</li> <li>• There may be a requirement for CO or CO2 monitoring in the basement if MEWP, or other internal combustion powered machinery is operated in the lab for extended periods</li> </ul>
<b>Basement Hydraulic failure and fire</b>	<ul style="list-style-type: none"> <li>• Staff</li> <li>• Students</li> </ul>	<ul style="list-style-type: none"> <li>• Hydraulic system is to be operated as per the Hydraulic Equipment Risk Management Plan.</li> </ul>	4	1	4	<ul style="list-style-type: none"> <li>• Hands/arms must not be used to check for hydraulic leaks due to the risk of fluid injection from high pressure leaks.</li> </ul>

## Action Plan

Management agreed additional control measures to be implemented	Resources Required	Action By			Action Complete	
		Responsible Person	Target Date	Completion Date	Responsible Line Manager Signature	Date

## Review

Review Details	Comments
Scheduled Review Date	
Are all control measures in place?	
Are controls eliminating or minimising the risk?	
Are there any new problems with the risk?	
<b>Review By: (name)</b>	
<b>Review Date:</b>	

## HSW Risk Assessment Matrix

Likelihood level	4	<b>Very likely</b> Probably expect the event to occur in most circumstances	Moderate (4)	High (8)	Extreme (12)	Extreme (16)
	3	<b>Likely</b> Event likely to occur at least once over the coming year	Moderate (3)	High (6)	High (9)	Extreme (12)
	2	<b>Possible</b> Event may occur at some time	Low (2)	Moderate (4)	High (6)	High (8)
	1	<b>Unlikely</b> Occurrence is conceivable, but not expected to occur	Low (1)	Low (2)	Moderate (3)	Moderate (4)
			<b>Minor</b>	<b>Moderate</b>	<b>Major</b>	<b>Severe</b>
			<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>
Consequence level						
Consequence description	<b>Harm to People</b> Potential for injury or death	None or trivial / negligible injury (no or slight injury which requires localised first aid)	Minor injury (illness or injury is not serious, medical treatment required)	Serious injury (serious injury or illness, hospitalisation required)	Fatality, major injury (death, permanent disablement, or significant long-term illness)	
	<b>People Affected</b> Extent of people potentially affected	None or few (e.g. 0 to 2)	Small numbers (e.g. 3 to 10)	Moderate numbers (e.g. 10 to 50)	Wide scale (e.g. more than 50)	
	<b>Reputation and Legal</b> Potential for publicity with a negative impact on reputation / potential for legal prosecution	None or issue raised by staff or students and resolved promptly by management  None or legal dispute – found not guilty – fines up to \$x	Internal scrutiny to prevent escalation and short-term stakeholder concern  Minor non-compliance, limited notification to regulators / affected stakeholders	Medium-term stakeholder concern, national media scrutiny and ‘brand’ impact  Medium non-compliance, moderate notification to regulators / affected stakeholder, potential for legal	Persistent stakeholder concerns, international media scrutiny and long term ‘brand’ impact  Significant non-compliance, extensive notification to regulators / affected stakeholders, potential for legal proceedings / imprisonment /	

			proceedings / fines	fines
<b>Operations</b> Extent of ability to maintain core business	None or business interruption < 4 hours	Business interruption between 4 hours to 5 days	Business interruption > 5 days	Business interruption of many weeks
	None or effectiveness and efficiency of a service, programme or project impacted in the short term	Operational disruption manageable by workarounds	Medium operational impact resulting in delay of key deliverables	Breakdown of key activities and significant long-term impact
<b>Environment</b> Extent of negative impacts on the environment	None or slight damage to property or equipment	Moderate damage to property or equipment	Major damage to property or equipment	Massive damage to property or equipment
	None or minimal impact	Minor short-term or intermittent impact, able to be contained with specialist assistance	Serious, medium-term detrimental impact	Very serious, long-term or permanent damage
	None or clean up expenses up to \$25,000	Clean up expenses up between \$25,000 to \$1m	Clean up expenses up between \$1m - \$5m	Clean up expenses > \$5m

**Consider the Likelihood**

**Consider:** How often is the task done? Has an accident happened before (here or at another workplace)? How long are people exposed? How effective are the control measures? Does the environment affect it (e.g. light, temperature, space)? What are people’s behaviours (e.g. stress, panic, deadlines)? What people are exposed (e.g. disabled, young students, etc)?

**Consider the Consequences**

**Consider:** What type of harm could occur (minor, serious, death)? Is there anything that will influence the severity (e.g. proximity to hazard, person involved in task, etc)? How many people are exposed to the hazard? Could one failure lead to other failures? Could a small event escalate?

**Calculate the Risk**

The final score for each risk is calculated by multiplying the likelihood and consequences response scores. This will give a risk score of between 1 and 16.

All risks rates as “High” or “Extreme” require detailed analysis of mitigating practices / controls to determine the residual risk rating.

“Low” and “Moderate” risks may be excluded from further analysis (other than when the consequence may be severe), however the rationale for excluding these risks should be documented to demonstrate the completeness of analysis undertaken.

Other than in the most unlikely circumstance, risks that can cause major or severe harm to people have been determined as “high” or “extreme”.

Management review is considered appropriate for risks of these nature due to the potential magnitude of the impact, even though the likelihood may be assessed as relatively low.

**Risk Priority - Legend**

<b>Extreme</b> (12-16)	Intolerable risk. Immediate action(s) is to be taken by Faculty/Service HSW risk owners - including DVCs, Deans of Faculties, Directors of Services, Academic Heads/PIs, Services Managers. Work should not be started or continued until the risk has been reduced to as low as reasonably practicable using the hierarchy of risk controls. The Associate Director Health, Safety and Wellbeing, and Manager Risk and Performance must be advised of the risk for their review. The risk should be included in the UoA wide risk register.
<b>High</b> (6-9)	Should not be tolerated. Urgent action is to be taken by the immediate manager. Work should not be started or continued until the risk has been reduced to as low as reasonably practicable using the hierarchy of risk controls. The HSW Manager working with the Faculty/Service, and Manager Risk and Performance must be advised of the risk for their review. To be included in the UoA wide risk register.
<b>Moderate</b> (3-4)	Management to monitor risks in case changing circumstances increase the level of risk. Some action may be required, e.g. improving controls.
<b>Low</b> (1-2)	Requires no attention above routine practices and procedures, apart from monitoring.

**Note:** This proposed Health and Safety Risk Assessment Matrix aligns with WorkSafe NZ guidance, UoA Resilience Management Plan, UoA Risk Determination Matrix, UoA TVRA and UoA Incident Levels