THE UNIVERSITY OF AUCKLAND
NEW ZEALAND
Te Whare Wānanga o Tāmaki Makaurau

HSW Risk Assessment – Structures Test Laboratory

For additional information refer to HS***Risk Management Procedure

Document Number: RA6	
Faculty/ Service Division: Faculty of Engineering	
School/Department: Department of Civil and Environmental Engineering	
HSW Risk: Uncontrolled Risk is Extreme, 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: *Working at Heights (WAH) within Structures Test Laboratory*	
Potential Hazards – Work at height. **Potential Harm –** Death, Bruising, Fractures, Dislocation	

CEE RISK ASSESSMENT 6		
Establishment: Structures Test Laboratory	**Assessment by:** R.A. Powell	**Date:** 08 Jun 15
Review Date: 08 Jun 16	**Approved by:**	**Date:**

WORK ACTIVITY
Working at Heights (WAH) within Structures Test Laboratory

Reference/s
Best Practice Guidelines for Working at Height in New Zealand.
AS/NZS 1891.

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

Hazard / Risk	Who is at Risk?	Normal Control Measures *(Brief description and/or reference to source of information).*	Risk Rating C	L	R	Additional Control Measures Required *(To take account of local/individual circumstances).*
Uncontrolled fall from height	• Staff • Students	• Eliminate through conducting work from the ground. • Eliminate through substitution – MEWP. • Isolate through engineering – scaffolds, barriers, edge protection, elevated work stands, work positioning systems. • Minimise - fall restraint systems, soft landing systems, PPE, secured ladders, administrative controls.	4	1	4	Projects that require working at heights should consider the associated fall risk during the project planning by conducting a risk assessment as part of the Safe Work Method Statement (SWMS). • Controls MUST be considered if there is any risk of a fall. • The hierarchy of control MUST be considered in order. • If the uncontrolled risk of a fall is medium or higher, the task is to be considered working at height.

Hazard / Risk	Who is at Risk?	Normal Control Measures *(Brief description and/or reference to source of information).*	Risk Rating C	L	R	Additional Control Measures Required *(To take account of local/individual circumstances).*
Untrained/unsafe personnel	• Staff • Students	• WAH equipment must not be used by personnel who have not passed operator or supervisor level training. • All staff and students are to have attended WAH Awareness training as part of the lab induction. • WAH Operators must have attended and passed operator training applicable to the type of WAH equipment being used. • WAH Supervisors must have attended and passed WAH Supervisor training applicable to the type of WAH equipment being used. • Operator must be in a fit state to operate the WAH equipment and not impaired by drugs, alcohol or fatigue. • Operators are to comply with Safe Work Instructions relevant to the equipment.	4	1	4	Students planning tests involving working at heights above 2 meters need to do WAH course. Operator and supervisor training must be carried out by a competent training provider to meet the requirements of AS/NZS 1891.4 Appendix E.

Hazard / Risk	Who is at Risk?	Normal Control Measures *(Brief description and/or reference to source of information).*	Risk Rating C	L	R	Additional Control Measures Required *(To take account of local/individual circumstances).*
Unsafe equipment	• Staff • Students	• All WAH equipment is to be manufactured in accordance with the appropriate AS/NZ standards or better. • All WAH equipment is to be inspected by the operator before the first use each day it is operated. • Non-conformities to be reported to supervisor and rectified before being used. • Any fall arrest equipment used in a fall must be quarantined.	4	1	4	• Quarantined fall arrest equipment that has been used in a fall must be inspected by a trained height safety equipment inspector before being returned to service. • WAH soft goods have a finite life as per the manufacturer's instructions, generally no more than ten years. • WAH equipment must be inspected as per the manufacturer's instructions, generally on an annual basis.
MEWP based risks.	• Staff • Students	• MEWP operation is to be conducted in accordance with the forklift Risk management Plan.	4	1	4	
Scaffold based risks	• Staff • Students	• All scaffolds to be designed, erected, and maintained IAW best practice guidelines. • Operators to check Scaftags before mounting scaffolds. • Non-conformities to be reported to supervisor and rectified before being used.	3	1	3	Scaffolding best practice guidelines are available at http://www.business.govt.nz/worksafe/information-guidance/all-guidance-items/scaffolding-best-practice-guideline-for-scaffolding-in-new-zealand/multipagedocument_all_pages

Hazard / Risk	Who is at Risk?	Normal Control Measures *(Brief description and/or reference to source of information).*	Risk Rating C	L	R	Additional Control Measures Required *(To take account of local/individual circumstances).*
Ladder based risks	• Staff • Students	• All ladder, step platforms and similar equipment to be constructed to industrial standards and rated to no less that 120kg safe working load. • Ladders are to be inspected by the operator before the first use each day it is operated. • Non-conformities to be reported to supervisor and rectified before being used. • Ladders to be used in accordance with manufacturer's instructions*. • Ladders should be secured before use.	3	1	3	• Ladders or stepladders should be used for low-risk and short-duration tasks. • The user should maintain three points of contact with a ladder or stepladder to reduce the likelihood of slipping and falling. *General guidelines for safe ladder use include, but are not limited to: • The ladder must be set up on firm, level ground. • The ladder should be at an angle of one metre out for every four metres up. • The ladder should rise at least one metre or three rungs above the landing point • The top of the ladder should be tied in position, and the feet of the ladder should be secured. • The person and anything they are taking up should not exceed the highest safe working load stated on the ladder. • The user should keep the line of the belt buckle (navel) inside the stiles with both feet on the same rung throughout the task. • The user should carry tools on a tool belt. • The user should stop at the third step from the top of a straight ladder

Hazard / Risk	Who is at Risk?	Normal Control Measures *(Brief description and/or reference to source of information).*	Risk Rating C	L	R	Additional Control Measures Required *(To take account of local/individual circumstances).*
Harness based risks.	• Staff • Students	• Harnesses, connectors and anchor points to be fit for purpose and serviceable. • The correct harness based system shall be used for the task • Harnesses to be correctly donned and adjusted. • Connectors should be clipped to the shoulder blade connector where possible. • Rescue plan to be developed and briefed before task begins. • All personnel using a fall arrest system are to wear an appropriate safety helmet with a fastened chin strap.	3	1	3	• Any potential free-fall distance is to be less than 2 metres. • Any slack in fall arrest lines is to be minimised. • Inertia reels should be anchored above head height. • Workers must be aware of 'pendulum effect'.

Hazard / Risk	Who is at Risk?	Normal Control Measures *(Brief description and/or reference to source of information).*	Risk Rating C	L	R	Additional Control Measures Required *(To take account of local/individual circumstances).*
Suspension intolerance (trauma) following a controlled fall.	• Staff • Students	• Workers must never conduct WAH alone. • All harnesses should be fitted with suspension intolerance relief straps. • A rescue plan is to be developed and briefed to personnel, and rescue equipment is to be available before any WAH takes place. • Any worker that has sustained a fall must be assessed by a doctor as soon as possible. • All equipment that has been subjected to a fall must be quarantined.	4	1	4	• A rescue plan must consider: o the rescue method, ie, use of a crane or elevating work platform o available equipment o responsibilities and training o communication o medical requirements o involving the emergency service. • The plan must be developed and documented. Simply relying on the NZ Fire Service to conduct the rescue is not acceptable.

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?	
Review By: (name)	
Review Date:	

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HSW Risk Assessment Matrix

Likelihood level						
	4	**Very likely** Probably expect the event to occur in most circumstances	Moderate (4)	High (8)	Extreme (12)	Extreme (16)
	3	**Likely** Event likely to occur at least once over the coming year	Moderate (3)	High (6)	High (9)	Extreme (12)
	2	**Possible** Event may occur at some time	Low (2)	Moderate (4)	High (6)	High (8)
	1	**Unlikely** Occurrence is conceivable, but not expected to occur	Low (1)	Low (2)	Moderate (3)	Moderate (4)
			Minor	**Moderate**	**Major**	**Severe**
			1	**2**	**3**	**4**
			Consequence level			

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

Extreme (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.
High (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.
Moderate (3-4)	Management to monitor risks in case changing circumstances increase the level of risk. Some action may be required, e.g. improving controls.
Low (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