

HSW Risk Assessment – Structures Test Laboratory

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

Document Number: RA5

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:

Operation of Gantry Cranes within Structures Test Laboratory

Potential Hazards – Vehicles, structure collapse, collision, work at height, cranes, manual handling

Potential Harm – Death, Strain/Sprain injuries, Shoulder injuries, Lower/Upper back injuries, Crushing

Injury, Bruising, Fractures, Dislocation

CEE RISK ASSESSMENT 5		
Establishment: Structures Test Laboratory	Assessment by: R.A. Powell	Date: 08 Jun 15
Review Date: 08 Jun 16	Approved by:	Date:

WORK ACTIVITY
Operation of Gantry Cranes within Structures Test Laboratory

Reference/s
 Approved Code of Practice for Cranes.
 Approved Code of Practice for Load-Lifting Rigging.

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	
Unlicensed/unauthorised/unsafe operator	<ul style="list-style-type: none"> Staff Students 	<ul style="list-style-type: none"> Operators must have attended and passed operator training applicable to the type of crane in operation. Licensed operator must be able to competently operate the crane being used. Licensed operator must be in a fit state to operate the crane and not impaired by drugs, alcohol or fatigue. Licensed operators are to comply with Safe Work Instructions relevant to the equipment. 	4	1	4	

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	
Unsafe equipment	<ul style="list-style-type: none"> • Staff • Students 	<ul style="list-style-type: none"> • Crane and lifting tackle to be inspected by the licenced operator before the first use each day it is operated. • All lifting tackle to be registered and inspected at least 12 monthly. • Crane to be serviced at manufacturer’s mandated intervals. • Non-conformities to be reported to supervisor and rectified before being used. 	4	1	4	
Equipment failure	<ul style="list-style-type: none"> • Staff • Students 	<ul style="list-style-type: none"> • All loads to be within the crane and lifting tackle safe working load ratings. • All lifting tackle to be rigged in accordance with the approved code of practice. 	4	1	4	

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	
Collision with person/other vehicle/other stationary object.	<ul style="list-style-type: none"> • Staff • Visitors • Students 	<ul style="list-style-type: none"> • Operators to look in the direction of travel and keep a clear view of the way ahead. • Crane movement is not to exceed walking pace within the lab. • Operators are to be aware of obstructions before operating the crane. • Dogmen are to be used where vision is obstructed. • Personnel and other workers to stand well clear of operating cranes. 	4	1	4	<ul style="list-style-type: none"> • Swinging loads have substantial momentum, and personnel are not to place themselves in between a swinging load and an obstacle. • Personnel are not to stand or walk under a suspended load at any time. • Dogmen and operators must know the approved crane hand signals.

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	
Injuries to personnel in crane lifted work platforms	<ul style="list-style-type: none"> • Staff • Students 	<ul style="list-style-type: none"> • Only approved crane lifted work platforms to be used. • Personnel to wear approved WAH helmets, safety footwear and harnesses* as required. • Persons working from the platform shall be able to communicate clearly with the crane operator at all times. • When a crane lifted work platform is in use, the crane operator shall be in attendance at all times and shall operate the crane within the manufacturer’s recommendations. 	4	1	4	<ul style="list-style-type: none"> • *Persons working on the platform shall wear the appropriate safety harness at all times suitably attached via an approved lanyard. If the arrangement of harness anchor point and work platform means that it is at all possible for the attached person to move beyond the confines of the platform then the lanyard shall incorporate an energy/shock absorber. If movement beyond the confines of the platform is not possible then attachment via a suitable fixed-length lanyard is acceptable and may be preferable in some circumstances. In the case of a platform suspended from the hook, all harnesses shall be independently attached to the hook.
Falling objects.	<ul style="list-style-type: none"> • Staff • Visitors • Students 	<ul style="list-style-type: none"> • Nearby personnel should avoid being within the crane “drop zone” when loads are elevated. • All personnel to wear hard hats/helmets during crane operations. 	4	1	4	

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:	

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	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
Environment 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

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