Structural Engineering			
Business Name:		ABN:	
Business Address:			
Contact Person:	Phone:	Email:	

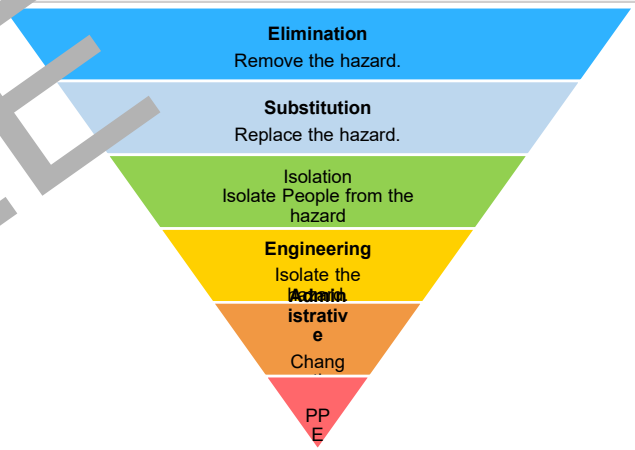
THIS RISK ASSESSMENT IS APPROVED BY THE PCBU OF THE PROJECT		
Under the Work Health and Safety Regulation (WHS Regulation), a person conducting a business or undertaking (PCBU) is required to ensure that a RISK ASSESSMENT is prepared before the proposed work starts.		
Full Name:		
Signature:	Title:	Date:

CLIENT OR PRINCIPAL CONTRACTOR DETAILS	SCOPE OF WORKS
Client:	
Project Name:	
Project Address:	
Project Manager:	
Contact Phone:	
Date Risk Assessment supplied to Project Manager:	

RISK MATRIX

LIKELIHOOD	INSIGNIFICANT	MINOR	MODERATE	MAJOR	CATASTROPHIC	SCORE	ACTION
ALMOST CERTAIN	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4 ACUTE		
LIKELY	2 MODERATE	3 HIGH	3 HIGH	4 ACUTE	4 ACUTE	4A ACUTE	DO NOT PROCEED
POSSIBLE	1 LOW	2 MODERATE	3 HIGH	4 ACUTE	4 ACUTE	3H HIGH	Rev before work
UNLIKELY	1 LOW	1 LOW	2 MODERATE	3 HIGH	4 ACU	2M MO RATE	Ensure control measures in place.
RARE	1 LOW	1 LOW	2 MODERATE	3 HIGH	3 H	1L LOW	Monitor and keep records.

HIERARCHY OF CONTROLS



Risk Rating & Required Action:

4A	Stop work. The risk is intolerable. E inate the hazar redesign the activity before proceeding. A Safe Work Method Statement (SWMS) or hi er-level authorisati is required.
3H	Review and approve additional c rols b ask arts. Senior supervisor sign-off needed.
2M	Ensure all nominated controls are in ace and effe ive. Proceed with caution; monitor conditions.
1L	Proceed, following standard operating procedures Monitor and keep records.

Consequence Scale:

Consequence	People (injury/illness)	Project / Assets	Compliance / Reputation
Catastrophic	Fatality or permanent total disability	project shutdown	Significant regulator intervention; criminal prosecution
Major	Serious injury/illness (hospital > 5 days)	critical delay	Improvement notice; major media coverage
Moderate	Medical-treatment injury; lost-time > 1 day	moderate delay	Minor breach; adverse client comment
Minor	First-aid only, no lost time	negligible delay	Isolated non-conformance
Insignificant	No injury	no schedule impact	Deviation caught and corrected on site

Notes on Hierarchy of Controls:
Remember to apply controls in the preferred order shown by the coloured pyramid:

1. **Eliminate**
2. Substitute
3. Isolate
4. Engineering
5. Administrative
6. PPE

Always document **why** a lower-order control is accepted if elimination or substitution is not reasonably practicable.

aligned with Safe Work Australia's Managing the risk of fatigue at work *(2023) and ISO 45001:2018 clauses 6–8.*

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
1. WHS Governance, Legal Compliance & PCBU Duties	• Inadequate understanding of WHS Act 2011 and WHS Regulation obligations for structural engineering activities • Lack of clear allocation of WHS responsibilities between PCBU, officers, engineers, supervisors and contractors • Failure to exercise due diligence in relation to structural design, modification and stability assessments • Inadequate consultation mechanisms with workers and other duty holders on structural risks (designers, builders, plant owners, asset managers) • Absence of documented WHS policy specific to structural engineering and structural alteration activities • Poor integration of structural safety requirements into corporate governance, risk and assurance frameworks	4A	• Establish and maintain a WHS management system aligned with WHS Act 2011, WHS Regulation and relevant Australian Standards (e.g. AS 5100, AS/NZS 4600, AS 4100) • Define and document PCBU, officer and worker duties for structural engineering tasks, including design, review, inspection and sign-off roles • Implement a due diligence framework for officers including regular reporting on structural safety risks, incidents and compliance activities • Develop a documented Structural Safety Policy addressing structural design, modification, inspection, testing and maintenance obligations • Establish formal consultation procedures with workers, health and safety representatives and other duty holders (e.g. principal contractors, asset owners, utilities) for all significant structural works • Schedule periodic external or internal WHS and structural compliance audits to verify adherence to legislation, codes of practice and standards	3H
2. Structural Design, Verification & Engineering Assurance	• Inadequate structural design leading under-designed or unstable structures under expected loads • Insufficient consideration of temporary load cases, construction staging, working under load-bearing beams and overloading of forming systems • Poor engineering assumptions about existing structure load bearing capacity and leverage bearing points • Lack of independent design verification for critical structural elements and alterations affecting stability • Inadequate coordination between permanent works design and temporary works design (falsework, support braces, propping, access systems) • Failure to consider future structural alterations for pipe pathways, services or additional loads at design stage	4A	• Mandate that all structural design, including modifications and temporary works, is undertaken or supervised by a suitably qualified and registered professional engineer • Implement a formal design management procedure with defined design briefs, design criteria, load cases and factor of safety requirements in accordance with relevant Australian Standards • Introduce mandatory independent design verification for safety-critical structures, load-bearing alterations and bridge instrumentation mounting systems • Require documented structural calculations and computer models to be checked, signed and retained in a central design assurance register • Include explicit design consideration of construction stages, support brace requirements, working under load-bearing beams, and possible overloading scenarios for structures and forming systems • Ensure design phase hazard identification (DFMEA / CHAIR or similar review) considers future alterations, pipe pathways, reinforcement, and integration with external structures	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
3. Existing Structures Assessment & Load-Bearing Capacity	• Incorrect assumptions about existing structure load bearing capacity and residual life • Inadequate structural stability assessment prior to alterations, propping removal or load application • Failure to identify deterioration, corrosion, fatigue, impact damage or prior unapproved alterations in existing structures • Insufficient assessment of leverage bearing points used for lifting, jacking, or temporary support braces • Inadequate testing regimes to determine structural safety, strength, durability and weight bearing capacity of external structures • Working under compromised load-bearing beams or elements without verified stability assessment	4A	• Develop a formal Structural Condition Asse[illegible]ment and Load Rating Procedure for all existing structures before modification, loading or occupation • Require documented structural inspections, s[illegible]d by calculations and, where appropriate, non-destructive testing or proof-load tests, to de[illegible]mine strength[illegible]d durability • Implement a sign-off protoco[illegible]hereby a compete[illegible]struc[illegible]al engineer certifies stability before workers are permitted to work under load[illegible]earing beams or c[illegible]al elements • Maintain an as[illegible] registe[illegible]aptur[illegible]inspection[illegible]tes, load-rating outcomes, known defects and imposed restrictions o[illegible]existing struc[illegible]res • Estab[illegible]sh a ch[illegible]ge-ma[illegible]gement trigg[illegible]requiring new assessment when material deterioration, damage or usa[illegible]hange[illegible]identified • Integ[illegible]e[illegible]uctura[illegible]ssessment reports into permit-to-work systems for any works involving existing structur[illegible]s o[illegible]verage[illegible]aring points	2M
4. Structural Alterations, Modifications & Change Management	• Uncontrolled structural alterations tha[illegible] affect stability or support loads • Modifications of stru[illegible]al e[illegible]ments during installation w[illegible]out engineering approval • Ad-hoc structural a[illegible]s for pip[illegible] pathways and services that compro[illegible]e structural integrity • Inadequate analysis of lo[illegible]ransfer paths when reinforcing structures or altering load-bearing configurations • Failure to manage cumulative impact of multiple minor structural alterations over time • Lack of documentation and traceability for changes to design intent, materials or connection details	4A	[redacted]	2M
5. Temporary Works, Propping & Load-Bearing Set-Up	• Incorrect set-up of load-bearing structures such as temporary supports, propping and forming systems	4A	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Installation of support braces without engineered configuration or load path verification • Manoeuvring support columns in a manner that induces instability in existing structures • Overloading structures or forming systems during construction or maintenance activities • Inadequate design and verification of working under temporarily supported beams and slabs • Failure of temporary structures due to poor inspection, adjustment or maintenance regimes		[redacted]	
6. Lifting, Loading & Working Under Load-Bearing Elements	• Uncontrolled loads applied to structures during lifting, jacking and manoeuvring activities • Workers positioned under inadequately assessed load-bearing beams or suspended loads • Incorrect assessment of load paths when processing work[illegible] leverage bearing points • Stress of materia[illegible] beyond [illegible]tic limit due to mis-rigg[illegible]centric loa[illegible]g or shock loading • Inadequate coordination betwe[illegible] crane operations, structura[illegible]pports and temporary works capacity • Failure to restrict access to areas beneath or adjacent to critical load-bearing elements during high-risk operations	4A	[redacted]	2M
7. Structural Connections, Interfaces & External Structures	• Improper connection to external structures (e.g. adjoining buildings, bridges, pipe racks) leading to load transfer issues • Incompatible movement characteristics between interconnected structures causing overstress or fatigue	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Insufficient design or quality control of connection details, welds, bolts and fixings • Unverified capacity of external support structures used for anchorage, bracing or instrumentation mounts • Failure at connection points during testing of strength and durability of external structures • Lack of clear responsibility where multiple asset owners share structural interfaces		[redacted]	
8. Structural Materials, Stress, Testing & Verification	• Use of incorrect or non-compliant structural materials with unknown strength properties • Stress of materials beyond their elastic limit due to design error, mis-specification or incorrect installation • Insufficient testing of strength, durability and weight bearing capacity of new or modified structural elements • Improper test methods creating unsafe conditions during proof loading or load testing • Failure to account for long-term material degradation (fatigue, creep, corrosion) in structural safety assessments • Inadequate traceability of material certificates and test results to installed components	3H	[redacted]	2M
9. Inspections, Monitoring & Bridge Instrumentation Maintenance	• Inadequate inspection regimes for structures, welds and connections leading to undetected defects • Poorly maintained or incorrectly installed bridge instrumentation providing misleading structural condition data • Failure to act on adverse monitoring results indicating loss of structural integrity or stability	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Insufficient competency of personnel conducting inspections of structures and welds • Inconsistent inspection records and lack of trend analysis for structural performance • Instrumentation cabling, sensors and mounts adversely affecting structural behaviour or introducing hazards		[redacted]	
10. Competency, Training & Supervision of Structural Engineering Activities	• Lack of competency in structural analysis, stability assessment and load path evaluation among engineering staff • Inadequate supervision of high-risk tasks such as installation of support braces, manoeuvring support columns and structural alterations • Insufficient understanding by site personnel of the implications of overloading structures or forming systems • Poor appreciation of risks associated with working under load-bearing beams and at leverage bearing • Engineers and su visors unfamiliar with corporate pro dures for st tural safety and change • Inadequate handover and mentorin between senior and junior structur engineers	3H	[redacted]	2M
11. Planning, Coordination & Work Integration with Structural Risks	• Poor planning of works that affect structural integrity, leading to conflicting activities or unplanned load paths • Inadequate coordination between structural engineers, construction teams, plant operators and maintenance personnel • Simultaneous operations that cumulatively overload structures or temporary works	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Failure to plan for progressive reinforcement, staged load transfer and timing of structural alterations • Limited consideration of emergency situations (e.g. partial collapse, propping failure) in project planning • Insufficient integration of structural risk controls into broader project WHS and scheduling processes		[redacted]	
12. Documentation, Records Management & Traceability	• Loss or inaccessibility of critical structural documentation, including calculations, certificates and inspection records • Use of superseded drawings or specifications during construction, maintenance or alterations • Incomplete or inconsistent recording of structural alterations, testing and reinforcement works • Poor linkage between risk assessments, design decisions and as-built conditions • Inadequate retention [redacted] for structural integrity [redacted] ords for long-life assets (e.g. bridge [redacted] major load [redacted] aring structures) • Inability to demonstrate compliance with WHS Act 2011 duties due to [redacted] or documentation	2M	[redacted]	1L
13. Contractor, Supplier & Interface Management for Structural Works	• Engagement of contractors or suppliers without adequate structural engineering capability or WHS systems • Misalignment between contractor procedures and PCBU structural safety requirements • Poor control of subcontractors undertaking reinforcement, welding or modification of structural elements • Inadequate communication of structural limitations, exclusion zones and load restrictions to third parties	3H	[redacted]	2M

JOB STEP	POTENTIAL HAZARDS	IR	CONTROL MEASURES	RR
SPECIFIC WORK STEPS	HAZARDS THAT MAY ARISE	INITIAL RISK	SPECIFIC MEASURES TO BE PUT IN PLACE TO ELIMINATE OR CONTROL THE RISKS	RESIDUAL RISK
	• Suppliers providing non-conforming structural components, braces, or forming systems • Fragmented responsibilities for structural safety at interfaces between multiple PCBUs		[redacted]	
14. Monitoring, Audit, Incident Management & Continuous Improvement	• Failure to detect systemic weaknesses in structural engineering and integrity management processes • Under-reporting or poor investigation of structural near misses, defects and non-conformances • Lack of follow-through on corrective actions from structural incidents or safety observations • Limited sharing of lessons learned across projects and teams regarding structural failures or close calls • Inadequate performance indicators for structural safety and integrity management • Complacency over time leading to erosion of structural safety standards and controls	3H	[redacted]	2M

EMERGENCY RESPONSE – CALL 000 FOR EMERGENCIES

Ensure to have an Emergency Management Plan in place as well as adequate numbers of trained first aid staff with easy access to fully stocked first aid kits, rescue equipment, material safety data sheets, adequate access to emergency communication equipment and fire-fighting equipment suitable for all classes of fire and ignition sources.

LEGISLATIVE REFERENCES

RELEVANT LEGISLATION AND CODES OF PRACTICE. DELETE THE LEGISLATIVE REFERENCES FOR ANY STATE THAT ARE NOT APPLICABLE

Queensland & Australian Capital Territory
Work Health and Safety Act 2011
Work Health and Safety Regulations 2011
Legislation QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/work-health-and-safety-laws
Codes of Practice QLD: https://www.worksafe.qld.gov.au/laws-and-compliance/codes-of-practice
Legislation ACT: https://www.worksafe.act.gov.au/laws-and-compliance/acts-and-regulations
Codes of Practice ACT: https://www.worksafe.act.gov.au/laws-and-compliance/codes-of-practice

New South Wales
Work Health and Safety Act 2011
Work Health and Safety Regulations 2025
Legislation NSW: https://www.safework.nsw.gov.au/legal-obligations/legislation
Codes of Practice NSW: https://www.safework.nsw.gov.au/resource-library/list-of-codes-of-practice

Northern Territory
Work Health and Safety (National Uniform Legislation) Act 2011
Work Health and Safety (National Uniform Legislation) Regulations 2011
Legislation NT: https://worksafe.nt.gov.au/laws-and-compliance/workplace-safety-laws
Codes of Practice NT: https://worksafe.nt.gov.au/forms-and-resources/codes-of-practice

South Australia
Work Health and Safety Act 2012 (SA)
Work Health and Safety Regulations 2012 (SA)
Legislation for SA: https://www.safework.sa.gov.au/resources/legislation
Codes of Practice for SA: https://www.safework.sa.gov.au/workplaces/codes-of-practice#COPs

Tasmania
Work Health and Safety Act 2012
Work Health and Safety (Transitional and Consequential Provisions) Act 2012
Work Health and Safety Regulations 2012
Work Health and Safety (Transitional) Regulations 2012
Legislation for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/acts-and-regulations
Codes of Practice for TAS: https://worksafe.tas.gov.au/topics/laws-and-compliance/codes-of-practice

Details of permits, licenses or access required by regulatory bodies (add or delete as required):

- Permits from local council
- Authorisation to commence work
- Any required documents.

Victoria
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2017
Legislation VIC: https://www.worksafe.vic.gov.au/occupational-health-and-safety-act-and-regulations
Codes of Practice VIC: https://www.worksafe.vic.gov.au/compliance-codes-and-codes-practice

Western Australia
Work Health and Safety Act 2020
Work Health and Safety Regulations 2022
Legislation Western Australia: https://www.commerce.wa.gov.au/worksafe/legislation
Codes of Practice WA: https://www.commerce.wa.gov.au/worksafe/codes-practice

Safe Work Australia Links
Law and Regulation (All States): https://www.safeworkaustralia.gov.au/law-and-regulation
Model Codes of Practice: https://www.safeworkaustralia.gov.au/resources-publications/model-codes-of-practice

Model Codes of Practice

- Managing noise and preventing hearing loss at work
- Confined spaces
- Labelling of workplace hazardous chemicals
- Managing risks of hazardous chemicals in the workplace
- Welding processes
- First aid in the workplace
- Managing the risk of falls at workplaces
- Hazardous manual tasks
- Managing the risk of falls in housing construction
- Managing electrical risks in the workplace
- Demolition work
- Excavation work
- Work health and safety consultation, cooperation and coordination
- Managing the work environment and facilities
- How to manage work health and safety risks
- Managing risks of plant in the workplace
- Construction work