



STRUCTURAL  
INTEGRITY  
ENGINEERING

20  
YEARS  
2000 - 2020

# Capability Statement




[siepl.com.au](http://siepl.com.au)



Structural Integrity Engineering Pty Ltd





When working  
with structures,  
always use  
a specialist  
structural  
engineer.

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SIE is a team of specialist structural engineers with extensive experience and knowledge. In 2020 we celebrated our twentieth anniversary. The structural integrity of your business-critical asset is our highest priority.

Our clients are among the world's largest companies, all with complex infrastructure requirements. They place their trust in us because we provide superior technical and business-orientated outcomes.



# Our services

We service the mining, ports, and heavy industry infrastructure sector.

## Structural engineering advice, design, and documentation

Our designs and advice leverage off the extensive experience that we have in mining and heavy infrastructure and the associated key compliance requirements. We provide clear, concise, and targeted information to all the stakeholders in the fabrication, construction, and maintenance of your business critical structural assets. We have extensive knowledge and experience in brownfields structural design.

- Design documentation that starts with reference to relevant Australian Standards and ends with clear, concise drawing details
- Designs that consider compliance as well as practical site constraints for installation
- Advice that you can trust and rely on to manage asset risk

## Structural condition, measurement, and risk assessment

Our specialist structural engineers have detailed knowledge of the design basis for structures and use well-established, customised processes for assessing structural condition to advise you on condition, personnel, and business risk.

- Inspections and risk assessments conducted by qualified Structural Engineers
- A customised risk assessment process attuned to structural risk that prevents over or under prescription of remedial requirements

## Design review and audit engineering

SIE has a wealth of experience in design review and auditing, including bulk materials handling machines, marine facilities, fixed assets, and cranes. Our team provides independent reviews that will give you confidence that your design meets the technical and legal specifications.

- Independent review and audit provides confidence that you are getting what you paid for
- Early involvement in specification and procurement processes can identify risks you can manage through the procurement timeline

## Advanced analysis and engineering

You will benefit from our experience in static, dynamic, linear, and non-linear modelling and advanced analysis of structures. We use geometric modelling, frame analysis and advanced finite element analysis to provide detailed information on structural behaviour, compliance, and optimisation. These advanced techniques allow:

- Detailed compliance and structural risk assessments
- Simulation and optimisation in easy to understand 3D
- Identification of key structural risk items and where your focus should be

## Failure investigation, expert witness, forensic engineering

SIE helps our clients with expert witness investigation, detailed technical forensic investigation, analysis and reporting in failure and incident circumstances. We respond and advise rapidly, securing your asset and prioritising your workplace safety. You will receive a clear, concise, and tailored report for your stakeholders.

- Expert witness or technical expert advisory services for structural failures
- Detailed forensic investigations of structural failures or incidents. This includes whole of structure failures, down to individual welds or bolts
- Investigation of root causes of fatigue cracking and fracture circumstances
- Recovery from incident operations

## Training and education

We offer structural training modules for site personnel, particularly non-structural engineers responsible for the whole-of-life maintenance of structures, to help them better understand risks associated with mining and heavy infrastructure.

- Basic load paths and loads and resistances
- Design methods
- Standards and legislation and how they affect construction and maintenance
- Review of structural failures

## About us

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SIE is a leading Australian consulting firm with structural engineers in Perth, Brisbane, and Newcastle. We specialise in structural engineering; it is what sets us apart. Our senior engineers are highly experienced, state registered and Chartered in the structural field.

In 2020, we celebrated our twentieth anniversary of managing critical, complex, and challenging structural projects in Australia and overseas.

We are proud of our technical team; their expertise and experience mean they are well equipped to manage and advise on your structural project or business critical asset.

Make your next call to a specialist structural engineer at SIE.