

# Engineering, Done Differently



**Aspec Engineering**



# Who We Are



## An Australian benchmark for distinctive engineering

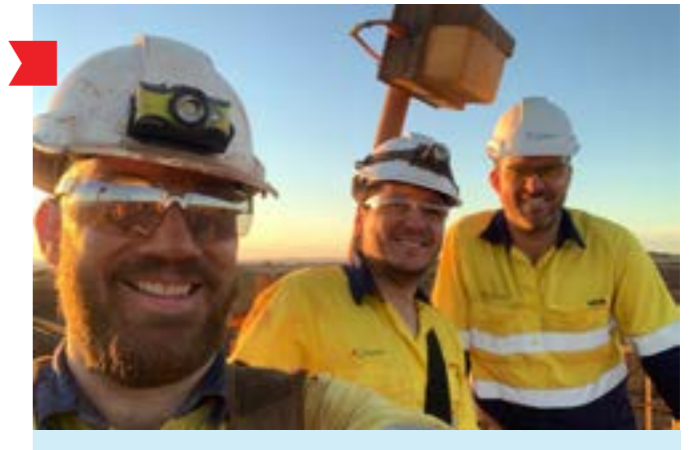
We are an independent Australian engineering firm that excels in three key areas: bulk materials handling systems, asset life extension, and infrastructure for ports and mines. Our comprehensive services encompass integrated structural and mechanical engineering solutions. With a strong dedication to excellence, we proudly serve mining giants, leading ports, heavy industries, and government sectors. Aspec Engineering (ASPEC) is renowned for seamlessly blending innovation and practicality to deliver exceptional results for our clients.

At ASPEC, we boast a team of highly qualified professionals from various disciplines who possess a wealth of institutional knowledge. Our strategic office locations nationwide enable us to respond promptly and efficiently to our clients' needs, regardless of project location. We carefully match project teams to client requirements, drawing on the necessary resources and experience to ensure successful project delivery.



Our low staff turnover speaks volumes about our culture and high-quality work environment, enabling us to cultivate long-term relationships with our clients and accumulate invaluable knowledge of their operations.

ASPEC takes pride in its extensive network of partnerships and alliances, which further enhance our capabilities. We have established collaborations with other consultants specialising in various fields, including electrical, geotechnical, and marine expertise.



These partnerships allow us to provide a comprehensive range of services, bringing together diverse skill sets and resources to deliver holistic solutions to our clients. By leveraging these strategic alliances, ASPEC ensures that our clients receive a full-service experience that addresses their unique needs and project requirements.



Our team members are the **beating heart** of our business.

# Building on Strength: Over 20+ Years of Project Excellence

## The ASPEC difference

**Quality of Work:** At ASPEC, quality is not just a checkbox; it is a fundamental value ingrained in everything we do. Our design processes and quality control systems are purposefully designed to be simple, effective, and straightforward. We have quality assurance measures that are targeted to directly contribute to each project's success.

With a culture of continuous improvement driving quality enhancements, our skilled team members are deeply committed to delivering excellence in every endeavour.

**Innovation to Unlock Value for Clients:** ASPEC thrives on innovation and harnesses leading technologies to deliver solutions that are energy efficient, environmentally conscious, and rapid to implement. At ASPEC, value maximisation is in our DNA.

**Customised Solutions:** ASPEC understands that each client has unique requirements. We specialise in developing tailored solutions that address specific challenges and deliver optimal results.

**Direct Relationships and Collaboration:** ASPEC fosters direct relationships between our engineers and clients on site, promoting clear communication, collaboration, and a deep understanding of project goals. This ensures efficient decision-making and seamless project execution.

**Extensive Industry and Asset Knowledge:** With 20 years of experience working with mining companies and ports in Australia, ASPEC possesses extensive industry, site, and asset knowledge. This in-depth expertise allows us to provide valuable insights and guidance throughout the project lifecycle. What sets us apart is our ability to easily retrieve data and access the history of machines, costings, and other relevant information. Our streamlined systems and comprehensive data management tools eliminate the need for a steep learning curve, ensuring that we can quickly analyse and leverage historical data to inform decision-making and optimise project outcomes. ASPEC's proficiency in obtaining critical information empowers us to deliver results with speed and precision.

“Over 90% of our projects come from returning clients, a testament to the exceptional value we provide and the long-lasting relationships we have cultivated.”

**Accelerated Delivery:** ASPEC's ability to deliver projects quickly is rooted in our extensive knowledge and familiarity with various sites and machines. We understand the importance of time-sensitive projects and prioritise effective planning, proactive communication, and streamlined processes to ensure prompt delivery without compromising quality. ASPEC's commitment to delivering fast results empowers our clients to stay ahead of the competition, seize market opportunities, and achieve their business objectives in a timely manner.



ASPEC is ISO 9001 certified.

Our Holistic Management System Engages Quality, Safety, and Environment

### SPANNING THE NATION: ASPEC'S STRATEGIC FOOTPRINT ACROSS AUSTRALIA



### RECOGNISING OUR VALUED CLIENTS



■ QBH Shiploader  
Refurbishment Project

Queensland

→ [aspec.com.au](http://aspec.com.au)

# We're Aspec Engineering

## Committed for the long term

One of ASPEC's core strengths, is our long term commitment to our clients, staff and the industries in which we participate. Our strategic presence in Queensland, New South Wales, Western Australia and South Australia, underpins our long term focus on the Australian resources, port and infrastructure sectors. From the very beginning, our services have been in high demand, fuelled by our unrivalled expertise in asset integrity and engineering within the resource industry, which has only strengthened through our long term focus on knowledge management.

One area where ASPEC quickly grew was in the field of bulk materials handling machines. These machines play a pivotal role in driving Australia's economy, with over 400 of them operating nationwide. The scale of this industry is immense. Our involvement extends to a high percentage of the bulk materials handling machines across the country, reflecting our comprehensive industry knowledge and unmatched experience. Our contributions have solidified our position as a trusted partner in the industry.

As ASPEC celebrates over two decades of success, we proudly stand by our long term relationships which has allowed us to emerge as a leading provider in all sectors—resources, port, and infrastructure. The strong demand for our services has allowed us to sharpen our focus on these crucial industries. Our commitment to delivering exceptional expertise and innovative solutions has earned us the reputation as a partner of choice for many clients. Looking ahead, ASPEC remains poised to continue driving industry excellence, delivering quality, and igniting success for our valued clients and partners across Australia.

### ■ 2003

ASPEC is established by Richard Morgan and Frank Gatto in Brisbane

### ■ 2007

The Mackay, Queensland office is established and operates for 7 years during the mining boom

### ■ 2007

The Newcastle, New South Wales office opens its doors

### ■ 2011

The Perth, Western Australia office opens its doors

### ■ 2011

The Wollongong, New South Wales office opens its doors

### ■ 2012

ASPEC head office relocates to South Brisbane, Queensland

### ■ 2013

ASPEC celebrates its **10 year** milestone

### ■ 2014

ASPEC and Elical formed a joint company named AE Projects to undertake the Nyrstar Transformation Project in South Australia.

### ■ 2022

Rendel Limited invests in ASPEC, formalising 15 years of working together.

### ■ 2023

ASPEC celebrates its **20 year** milestone

### ■ 2026

The Adelaide, South Australia office opens its doors



Aspec Engineering:  
**90% Repeat Business,**  
100% Commitment to  
Excellence.

■ **Gudai-Darri Mine  
Project**

Western Australia

→ [aspec.com.au](http://aspec.com.au)

ASPEC HAS WORKED ON



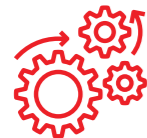
**1500+**

Projects



**50+**

Sites



**200+**

Machines

ASPEC undertakes engineering design and asset integrity studies for resource projects for mining and minerals processing industries. We carry out the majority of design in-house and coordinate input from specialist sub-consultants as required for a complete multi-disciplinary service.



Vent Shaft Project

Raisebore design for Narrabri mine

→ [aspec.com.au](http://aspec.com.au)

OUR PROJECTS

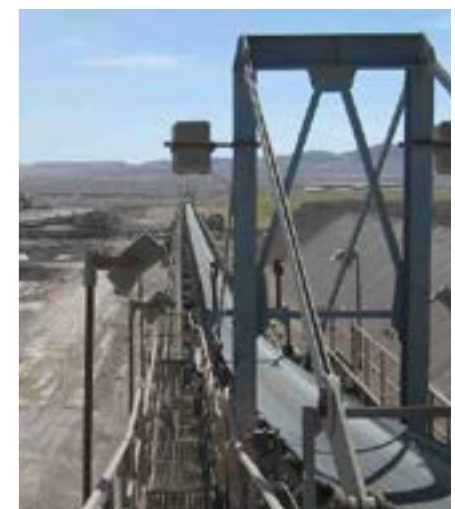
# Resources

ASPEC is a diversified company operating within the resources sector. Our areas of involvement encompass a wide range of commodities, including iron ore, metallurgical coal, bauxite, alumina, copper, manganese, wood pellets, thermal coal, potash, salt, and sugar.

Furthermore, we have actively participated in projects related to the metals industry, specifically steel, lead, precious metals, and copper.

ASPEC'S SERVICES COVER:

- Processing plants
- Industrial buildings
- Conveyor systems
- Reclaim tunnels
- Underground structures
- Surface mining systems
- Mobile crushing/conveying systems
- Heap leach systems
- ROM and rail dump stations
- Bins, bunkers and silos
- Bulk materials handling machines
- Access structures
- Cranes and machine runways
- Building and machinery foundations



ASPEC HAS WORKED ON



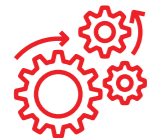
**500+**

Projects



**40+**

Sites



**130+**

Machines

With a wealth of experience in port projects, we have a strong history of engineering solutions tailored for dry bulk marine terminals. From initial design to final implementation, we focus on optimising the port infrastructure for efficiency and safety.



Fender Replacement Project

Hay Point Coal Terminal,  
Berth 1

→ [aspec.com.au](http://aspec.com.au)

OUR PROJECTS

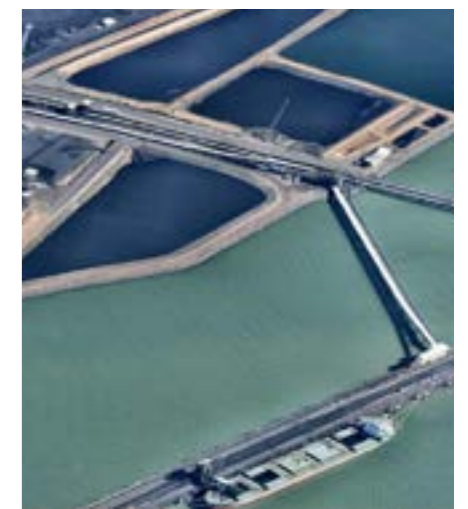
Ports 

ASPEC offers extensive expertise in various areas, such as stockyard layout, jetty and wharf design, fender and mooring installation, stacker and reclaimer configuration, evaluation of car dumpers and positioners, and conveyor and bin design.

Our capabilities also encompass civil works and shore protection, ensuring a comprehensive approach to project execution for ports.

ASPEC'S SERVICES COVER:

- Stockyard, wharf and shiploader layout and configuration including:
  - Machine selection
  - Machine performance
  - Terminal throughput
  - Berth layout
  - Shiploading studies
- Specification and tender documentation
- Life extension studies and retrofit design
- Civil works
- Detailed design
- Failure investigations
- Shiploaders, stackers and reclaimers
- Data analytics
- Car dumpers/car positioners
- Material flow modelling
- Conveyors, surge bins and transfers
- Fatigue analysis





**Sydney Harbour Bridge Maintenance Access Project**  
Sydney, NSW

Our expertise in infrastructure projects stands out in the industry. We provide a range of services, from proof engineering to in-depth feasibility studies, and meticulous project design. Our approach is holistic, ensuring that every aspect of infrastructure development is addressed with precision and innovation.



**North West Rail Link Precast Yard**  
Sydney, NSW



**Surf Lakes**  
Yeppoon, QLD



**North West Rail Link**  
Sydney, NSW

**OUR PROJECTS**

# Infrastructure

ASPEC carries out projects for mining, port and public infrastructure including design and asset integrity studies.

ASPEC is now affiliated with **Rendel (part of the Ingerop group)** to provide leading international expertise for major infrastructure projects.



ASPEC'S SERVICES COVER:

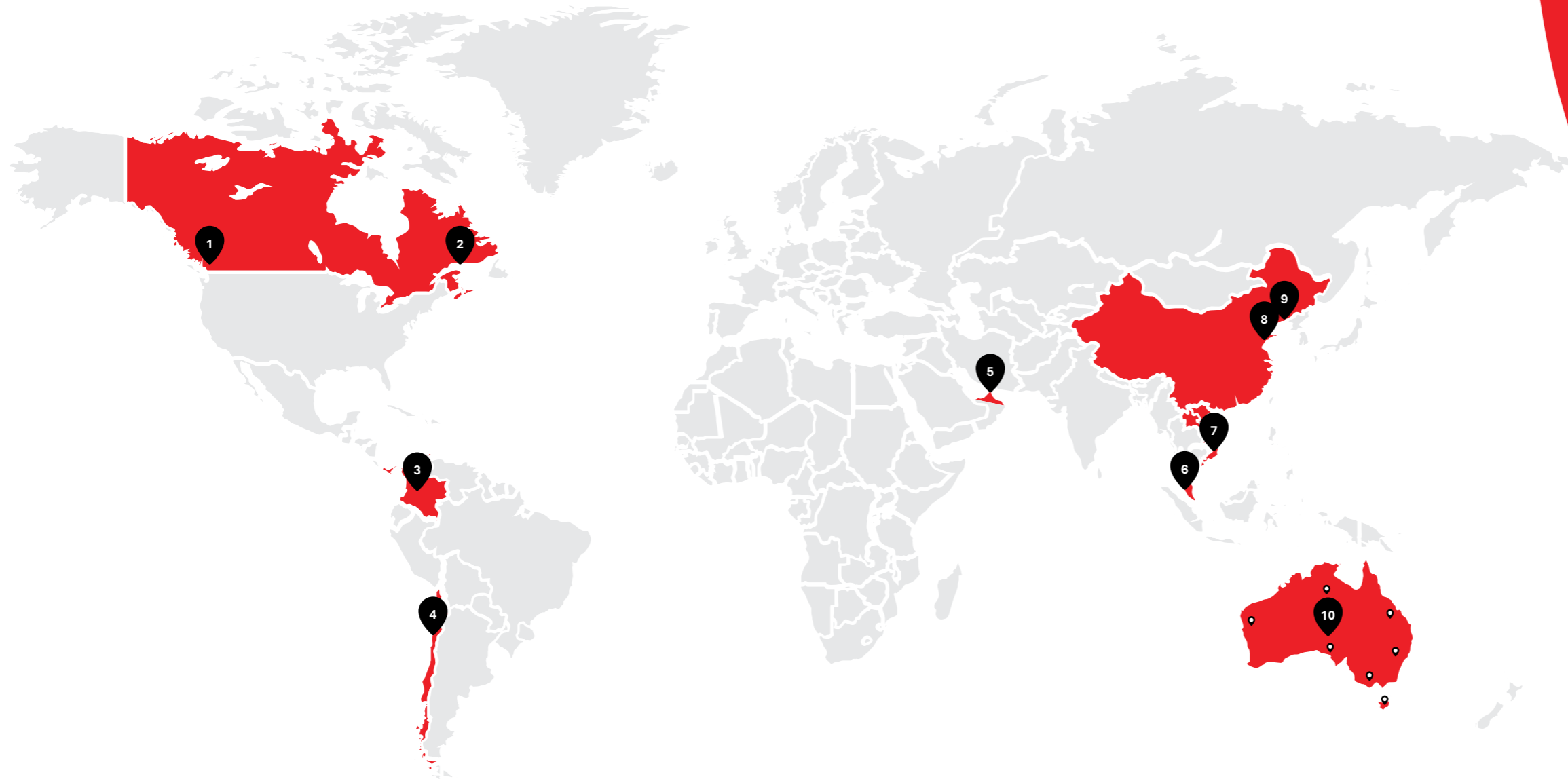
- Proof engineering and design auditing
- Pre-feasibility and feasibility
- Bridges
- Rail
- Project optimisation and value engineering
- Structural, mechanical and piping projects
- Heavy haul
- Tunnels and shafts
- Retrofit projects
- Temporary works



OUR PROJECTS

# Project Locations

“Our **international** footprint spans the globe.



## Map Locations

- 1 Canada  
Vancouver
- 2 Canada  
Quebec
- 3 Colombia  
Barranquilla
- 4 Chile  
Calama and Escondida
- 5 UAE  
Dubai
- 6 Singapore  
Singapore
- 7 Vietnam  
Hanoi
- 8 China  
Nantong
- 9 China  
Dalian
- 10 Australia  
Multiple locations across:  
Western Australia, Northern Territory, South Australia,  
Queensland, New South Wales, Victoria, Tasmania

OUR SERVICES

# Bulk Materials Handling

ASPEC is the foremost independent consultant in Australia for materials handling machines such as shiploaders, stackers and reclaimers.

We are renowned for our expertise in engineering bulk materials handling systems that prioritise both safety and sustainability.

Materials handling machines constitute over 50% of ASPEC's business, with asset management and maintenance related engineering forming the focus of our work in this field. We have completed a significant number of bulk materials handling projects nationally and internationally.

70+

AS4324.1 design audits

Bulk Materials Handling Services:

- AS4324.1 design audits and major projects for shiploaders, stackers and reclaimers
- Site inspections
- Throughput analysis
- Discrete element modelling (DEM)
- Conveyor design
- Bin design
- Hatch filling studies
- Machine configuration
- Loading and unloading system design
- Data analysis

Shiploaders



Reclaimers



Stacker Reclaimers



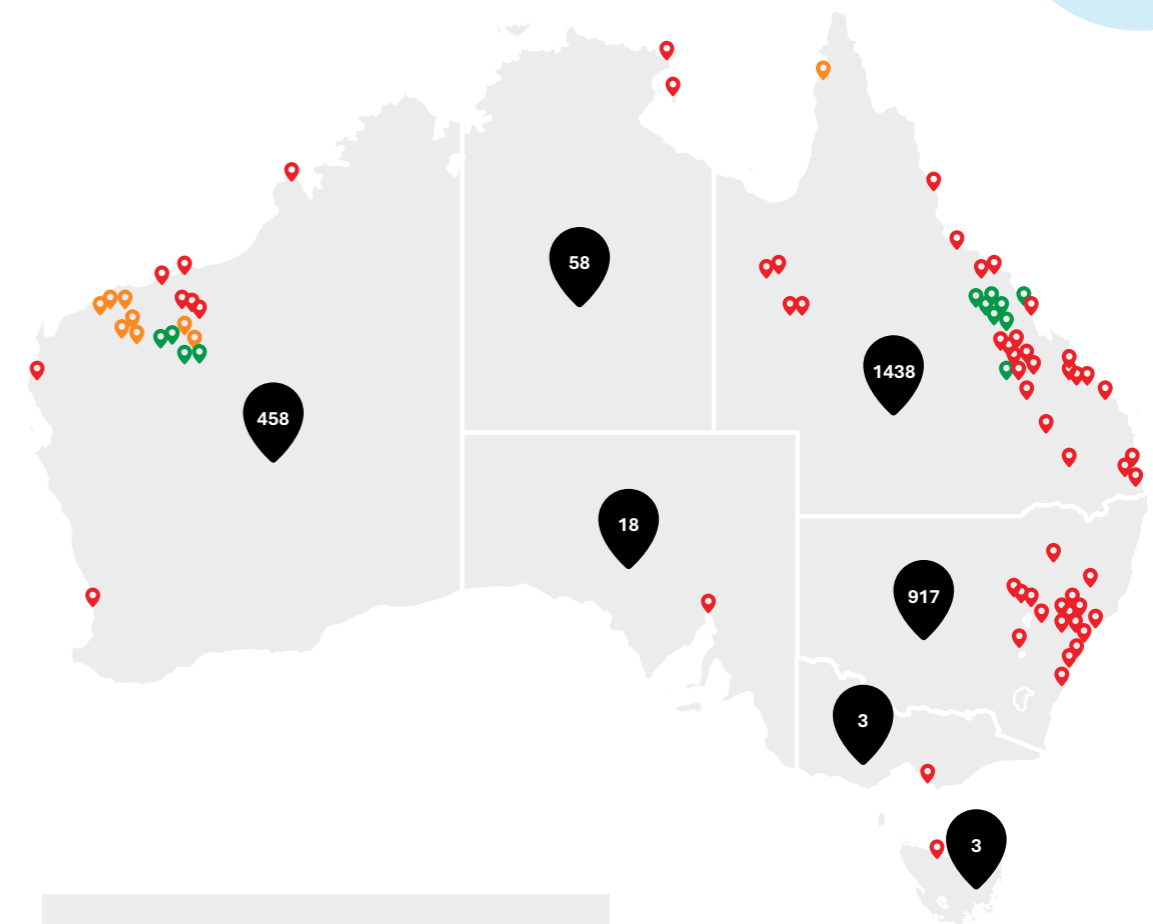
Stackers



## BULK MATERIALS HANDLING PROJECTS

50+

International Projects



Legend

- Rio Tinto Sites
- BHP Sites
- All Other Sites

“We are a specialist firm with a **national** footprint, making waves globally.”

## OUR SERVICES

# Asset Life Extension

ASPEC uses a risk-based methodology for asset management following Australian and International Standards. The assessment is based on:

- Inspection
- Design standards conformance
- Structured risk assessment
- Maintenance actions
- Fatigue Useful Life Studies of Mechanical Structures
- Fracture Mechanics
- Order of Magnitude and Feasibility Studies for End of Life Equipment Replacement Projects

ASPEC conducts multi-disciplinary asset condition assessments covering civil/structural, mechanical, electrical and instrumentation disciplines, ensuring asset integrity is looked at in a holistic manner.

In addition, ASPEC undertakes detailed inspections and investigations for life extension of structures and mechanical components involving finite element analysis, strain gauging, fatigue assessments, fracture mechanics, and engineering design.

ASPEC utilise a suite of advanced visualisation and other graphical presentation methods as useful tools to communicate the condition and status of an asset within its lifecycle. These tools, combined with our unique asset management expertise, allows us to support our clients in making critical investment decisions to extend the life of their assets.

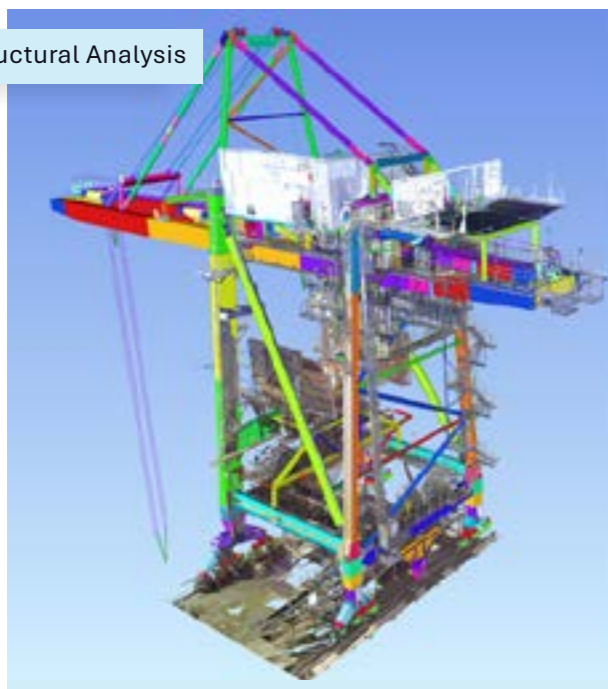
▶ Ore Car Dumper



▶ Inspection



▶ Structural Analysis



## OUR SERVICES

# Design

Clients appreciate ASPEC's flexible design solutions, backed by a seasoned team with 20-years of expertise in structural, mechanical, and heavy civil engineering.

## Structural Engineering Experience

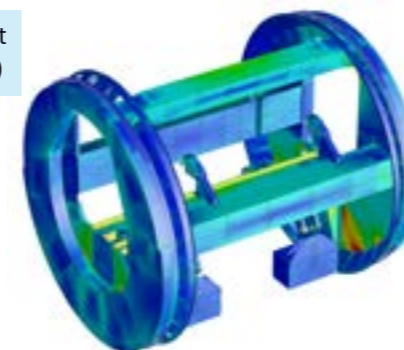
- Piled foundations
- Marine structures
- In-ground reinforced concrete structures
- Retaining walls
- Pavement slabs
- Structural steelwork
- Bins
- Buildings
- Fatigue and fracture assessment and repair
- Developing structural integrity systems
- Site inspections
- Temporary works
- Design auditing
- Structural analysis
- Detailed design, 3D Modelling and Drafting

## Mechanical Engineering Experience

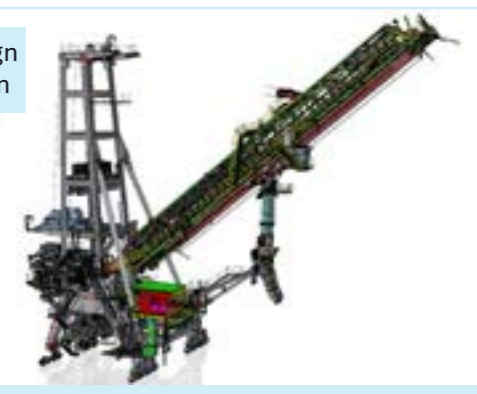
- Design audits and machine configuration of stackers, reclaimers, shiploaders and ship unloaders
- Shiploader hatch filling studies
- Hydraulic, pneumatic and lubrication systems
- Throughput analysis
- Discrete element modelling (DEM)
- Conveyors and bins
- Continued use assessment
- Machine replacement studies
- Loading and unloading systems
- Site inspections
- Risk and safety studies
- Vibration studies
- Finite Element Analysis (FEA)
- Mechanical system design

Our dynamic team includes Chartered Professional Engineers (CPEng) and Registered Professional Engineers of Queensland (RPEQ).

▶ Finite Element Analysis (FEA)



▶ Detailed design & Visualisation



## KEY PROJECT LIST

<b>BHP</b>	<ul style="list-style-type: none"> <li>• Shiploader and Berth Replacement (SABR) Project Design Verification</li> <li>• Business Critical Equipment and Infrastructure (BCEI) Engineering Assessment</li> <li>• Rail Mounted Machine Integrity Management (RMMIM) Development</li> <li>• Hay Point – HPX3 Project Design Verification</li> <li>• Hay Point – New Stacker Reclaimer Machines SR6 and SR7</li> <li>• Hay Point – Shiploader SL1 Upgrade</li> <li>• Caval Ridge Mine Stackers Reclaimers Design Audits</li> <li>• Goonyella Riverside Mine – Raw Coal Stacker Upgrade</li> <li>• Olympic Dam Brownfield Expansion Project (in conjunction with AE Projects)</li> <li>• Olympic Dam – Clark Stacker Study and Upgrade Design</li> <li>• Risk Management Program for Pilbara Stackers, Reclaimers and Shiploaders</li> </ul>	<b>PORT WARATAH COAL SERVICES</b>	<ul style="list-style-type: none"> <li>• Carrington Terminal Shiploader Replacement Project</li> <li>• Kooragang Terminal Shiploader 7.08, 7.09 and 7.10 Major Upgrade and 7.11 Replacement</li> <li>• Kooragang Terminal Machine Subject Matter Expert for Replacement of 9 Machines</li> </ul>
<b>BHP SPENCE</b>	<ul style="list-style-type: none"> <li>• Asset Integrity Study</li> <li>• Heap Leach System Upgrade (Chile)</li> </ul>	<b>REDPATH MINING</b>	<ul style="list-style-type: none"> <li>• Narrabri Raise Bore Shaft</li> </ul>
<b>CERRO COLORADO</b>	<ul style="list-style-type: none"> <li>• Asset Integrity Study</li> </ul>	<b>RIO TINTO</b>	<ul style="list-style-type: none"> <li>• Amrun Project</li> <li>• QAL Alumina Shiploader Replacement</li> <li>• Cape Lambert Port B Expansion</li> <li>• Risk Management Program for 42 Machines in Pilbara</li> <li>• East Intercourse Island Stacker Replacement</li> <li>• End of Life Study Parker Point Reclaimer Replacements</li> <li>• Order of Magnitude and Pre-feasibility Study for Car Dumper Replacement</li> <li>• AS 4324.1 Design Audits for Gudai-Darri Stackers and Reclaimers</li> <li>• BSL Ship Unloader Recovery and Refurbishment</li> </ul>
<b>DARLYMPLE BAY INFRASTRUCTURE</b>	<ul style="list-style-type: none"> <li>• Project 7X Machine Reconfiguration</li> <li>• Reclaimer RL4 and Stackers ST1A Design Audits</li> </ul>	<b>RIO TINTO ALCAN</b>	<ul style="list-style-type: none"> <li>• Gove Bauxite Shiploader Upgrade</li> </ul>
<b>DOWNER EDI XSTRATA</b>	<ul style="list-style-type: none"> <li>• Mangoola Mine Project</li> </ul>	<b>ROY HILL</b>	<ul style="list-style-type: none"> <li>• Stanley Point Berth 3 Value Engineering and Detailed Design</li> </ul>
<b>GLADSTONE PORTS CORPORATION</b>	<ul style="list-style-type: none"> <li>• Shiploader 1 Replacement Project – Front End Engineering Design</li> <li>• Stockpile SP22</li> </ul>	<b>SOUTH32</b>	<ul style="list-style-type: none"> <li>• GEMCO Stacker Design Audit</li> </ul>
<b>MINERA ESCONDIDA</b>	<ul style="list-style-type: none"> <li>• Asset Integrity Study</li> </ul>	<b>SYDNEY METRO NORTHWEST SKYRAIL</b>	<ul style="list-style-type: none"> <li>• Proof Engineering in conjunction with Rendel Ltd</li> </ul>
<b>NEWCASTLE COAL INFRASTRUCTURE GROUP</b>	<ul style="list-style-type: none"> <li>• Recovery of Shiploader SL2 from Major Storm Damage</li> <li>• Dumpstation life extension</li> <li>• Stacker Reclaimer life extension project</li> </ul>	<b>WESTSHORE TERMINALS</b>	<ul style="list-style-type: none"> <li>• Stacker Reclaimer SR44 (Canada)</li> </ul>
<b>NYRSTAR</b>	<ul style="list-style-type: none"> <li>• Port Pirie Transformation Project</li> </ul>		
<b>PORT KEMBLA COAL TERMINAL</b>	<ul style="list-style-type: none"> <li>• Port Kembla Coal Terminal Expansion</li> </ul>		
<b>PORT OF NEWCASTLE</b>	<ul style="list-style-type: none"> <li>• New Wharf K2 Ship-Unloader</li> </ul>		



## Contact us

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