

# Structural Engineering

Capability Statement



COMPETENCY  
CAPACITY  
COMMITMENT



# Acknowledgement of Country

**BG&E Resources acknowledges Aboriginal and Torres Strait Islander peoples as the first peoples of Australia and the Traditional Owners and Custodians of lands and waterways on which we work and live.**

**Our operations are conducted on the traditional lands of the Whadjuk people of the Noongar nation in Perth, the Bindjareb people in Mandurah, the Larrakia people in Darwin, the Kurna people in Adelaide, the Gurambilburra Wulgurukaba, Bindal, Nywaigi, and Gugu Badhun peoples in Townsville, the Turrbul and Jagera peoples in Brisbane, the Awabakal people in Newcastle, the Gadigal people of the Eora nation in Sydney, and the Wurundjeri and Boon Wurrung peoples of the Kulin nation in Melbourne.**

**We honour the wisdom of, and pay respect to, Elders past and present, and we acknowledge the cultural authority of all Aboriginal and Torres Strait Islander peoples across Australia.**

**We also acknowledge the vital contribution made by our Aboriginal and Torres Strait Islander employees and we thank those who have guided our approach and generously shared their insights.**

Image: Aboriginal artwork created by Jayda Sebire (Indigenous Artist and former BG&E Resources People and Culture Assistant).  
Copyright 2023, Jayda Sebire.





# Structural Engineering and Design for Asset Optimisation

BG&E Resources (BGER) is a multidisciplinary engineering, EPCM and ESG consultancy, delivering technical solutions for clients in the Resources, Energy and Industrial sectors.

With offices on the East and West coasts of Australia, we are majority owned by our employees and committed to helping clients decarbonise in a net zero economy.

Our fit-for-purpose engineering solutions enable mining and raw material proponents, energy and water utilities, and port authorities to optimise the performance of their assets, minimise operational disruption, improve safety and mitigate risks.

BGER's proven approach to deliver schedule and cost benefits through clever engineering and true collaboration is what sets us apart.

Our people pride themselves on providing smart and sustainable solutions to complex engineering problems; and importantly, on being great people to work with.





# Technical Excellence

**Our people are passionate about leveraging their technical ingenuity to solve complex problems.**

Technical excellence is the bedrock of our business. It drives our people and propels the outcomes that we provide for clients, communities, asset owners and operators, and financiers.

Our dedicated professionals and subject matter experts focus on understanding our clients' business objectives, their desired project outcomes, as well as the latest industry research for the sectors in which we operate.

#### A Premium Client Experience

The success of our project work depends on leveraging the best expertise of our people. That's why we allocate the most qualified professionals to help realise our clients' development vision and bring their projects to life.

Our work is underpinned by strong engineering design principles, industry-leading technology and pragmatic advice to deliver exceptional outcomes, every time.

This approach provides the following benefits:

- Ease of understanding of regulatory frameworks
- Efficient navigation through the development approvals process
- Protection and preservation of our cultural heritage, the environment and waterways
- Healthy, transparent and trusted relationships are established with stakeholder groups
- Respectful liaison with Traditional Owners is undertaken
- Fair and equitable outcomes are achieved for First Nations' communities
- Project knowledge is retained, including lessons learned
- Innovation is embraced and deployed.

#### Technical Leadership Team

The quality and excellence of our world and ability to deliver the best technical and cost-effective solutions for our clients is guided by our Technical Leadership Team.

Led by the most senior members of our business, this team facilitates learning and knowledge transfer, professional collaboration and mentorship to drive continuous excellence in our technical capabilities. It also encourages our people to perform to high technical standards and rewards staff for incorporating innovation into projects.

Image: Steve Ash and Kanishka Pathirana at Paraburdoo Train Load Out Facility, Pilbara WA.



# Safety is at the Heart of our Business

**Our diverse and culturally aware teams embrace safe work practices that are environmentally sound.**

Safety is integral to everything we do at BG&E Resources. We care about our people, clients, and the communities in which we operate, and strive for zero harm in everything we do.

Health, safety and quality are embedded in our work practices, while heritage and sustainability are considered throughout the entire project life cycle.

We recognise the importance of continuously reviewing safety in design issues at all stages of a project, from investigation, design, construction, operation (including maintenance), closure and rehabilitation.

Exceeding regulatory obligations, we leverage a formalised Health, Safety, Environment and Quality Management framework that allows us to analyse and implement practical measures to mitigate risks.



## Leadership

- Understanding of client needs
- Technical Leadership Team governance
- Strong Chartered presence
- Adherence to Technical Standards & Regulatory Instruments
- Committed to Technical Excellence
- Striving for low-carbon impacts



## Systems

- ISO Accredited Quality Management System (QMS)
- Design Assurance
- Engineering Verification Procedures
- Safety in Design
- Net Zero in Design
- Risk Mitigation & Management
- Project Governance (Action Tracking, Monitoring, Performance & Auditing)
- Continuous Improvement (Lessons Learnt)



## Characteristics

- Client Centric
- Risk Adverse
- Reliable
- Accountable
- Innovative
- Simplification
- Community & Culture



Image: Lucy Nguyen at Cape Lambert Port Facility, Karratha WA.





Image: Indigenous peoples' hands. Copyright approved via Shutterstock.

# Respecting, Protecting and Preserving our Cultural Heritage

## Diversity across our workforce and our supply chain is vital.

Our clients trust in our ability to enhance their social license to operate, including through the provision of mutually rewarding cultural heritage consultation and management, healthy Indigenous partnerships, and ethical procurement from Aboriginal-owned and operated businesses.

Working with Traditional Owners, First Nations peoples, Indigenous Prescribed Body Corporates and Aboriginal Corporations, is seeded in early engagement as it enables our team to deliver benefits for today (across the life cycle of proponents' projects) and for future generations.

Early engagement underpins our approach to cultural heritage management as it enables us to understand the needs and desires of all stakeholder groups, as well as any existing Indigenous Land Use Agreements (ILUAs) which have been registered with the National Native Title Tribunal (NNTT).

We partner with highly experienced local archaeologists and ethnographic specialists to provide clients with access to an abundance of heritage site data, and to collectively undertake walk-throughs of proposed project sites.

From the Kimberley in the North to Esperance in the South of WA, across central Australia and along the Eastern seaboard – we engage with Traditional Owners and Custodians, Prescribed Body Corporates (PBCs), Aboriginal development corporations and First Nations communities to preserve their cultural heritage and when helping proponents and/or government agencies to deliver projects.

### Cultural Heritage Management Capabilities

- Stakeholder consultation and engagement to help Traditional Custodians of the land and Native Title Claimants to establish IULAs, registration to the NNTT and compensation frameworks (among others).
- Advice for proponents regarding the application of legislation including the Native Title Act 1993, Heritage Act 1972 (Aboriginal Cultural Heritage Bill 2021) and Repeal Bill 2023.
- Developing scopes for archaeological and ethnographic surveys.
- Indigenous business contracting (including teaming with Aboriginal-owned and Supply Nation-certified businesses to develop First Nations regional workforces).
- Capacity building (including coaching, mentoring and career pathway development, etc. for First Nations peoples).
- Reconciliation Action Plans.

### First Nations' Partnerships

We have a range of actions in place to increase Aboriginal and Torres Strait Islander employment and engagement in our business, to help First Nations communities become self-sustaining (current participation is approximately 1.5 per cent of our workforce and we are striving to increase that to three per cent by December 2025).

We proudly support Aboriginal and Torres Strait Islander owned businesses and have established a majority-owned Aboriginal company, TICS (WA) Pty Ltd (TICS). TICS is a NATA-accredited laboratory to ISO 17025, providing nondestructive testing (NDT) services.

Similarly, we have strategic partnering arrangements with several Aboriginal-owned businesses, including Karlayura Contracting, which provides design and construction support for clients.

We have also established a similar partnering agreement with i24s, an Aboriginal-owned and operated workforce company, providing security, civil works and commercial cleaning services for mine sites in remote locations across Australia, as well as for commercial premises in capital cities (their clients include BHP, Horizon Power and Cundaline Resources, among others).

Most recently, we also established a partnership with Pirrpala, a 100 per cent Aboriginal-owned and operated small scale project delivery provider.

Our partnerships also span the globe, specifically in China, for the procurement of equipment and professional services, including on Country inspections of fabrication, testing, compliance and design reviews.

### Reconciliation

Review our [Innovate Reconciliation Action Plan](#), [Aboriginal and Torres Strait Islander Engagement Strategy](#), [Human Rights Statement](#) and [Anti-Discrimination Policy](#).



# Structural Engineering

**Leading the development of advanced construction techniques in the areas of process plants, industrial buildings and large infrastructure assets.**

We have expertise in both traditional and prefabricated construction techniques including industry leading knowledge in:

- Design of Heavy Lifts
- Transport and Construction Modularisation
- Offshore Fabrication
- International Codes and Standards
- Design of Temporary Works
- Refurbishment of Existing Infrastructure for Construction Loading

#### Capabilities

- Mines and Process Plants
- Ports and Loadout Facilities
- Aerodrome/Airport Facilities
- Modular Accommodation Villages and Housing
- Tailings Storage Facilities
- Diesel Fuel and LNG Infrastructure
- Industrial Facilities
- Water Treatment Plants
- Value Engineering



# Non-Process Infrastructure (NPI)

**Providing end-to-end solutions for NPI facilities and structures to boost safety, efficiency and sustainability of mining operations.**

BGER has established a reputation for the successful delivery of NPI in both Greenfield and Brownfield developments, such as temporary camps, permanent villages, borefields, administration and security buildings, water treatment, fuel storage, power plants including renewables, roads, workshops and warehouses.

With a strong background in the mining industry, we provide multidisciplinary engineering and design capabilities including civil, structural, mechanical, piping, electrical, and instrumentation and controls.

We expertly manage all areas of NPI, working closely with our clients to deliver cost-effective and fit-for-purpose solutions. This includes maximising off-site fabrication to decrease site hours and improve quality control. We also stage works for temporary or fly camps while facilitating construction of main camps.

Additionally, we accelerate the NPI scope of facilities to service and maintain vehicles or equipment during construction as part of early works packages.

- Decmil Gorgon LNG Barrow Island Accomodation
- Rio Tinto Gudai Darri In-Pit Facilities
- BHP Jimblebar NPI Buildings
- Ravenswood Gold NPI Facilities
- Decmil Mulla Mulla Camp
- BHP Yandicoogina NPI
- Rio Tinto Western Turner Syncline
- Rio Tinto Amrun Mine Infrastructure Area
- Roy Hill Mine Services Area NPI
- BHP Mesa A NPI
- Pacific National Provisioning Facility

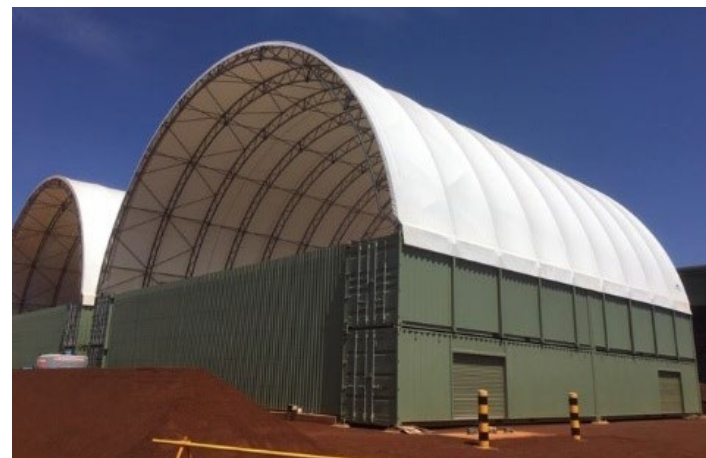


Image: BHP Mesa A NPI – Pilbara, WA.

Image: Decmil Gorgon LNG Barrow Island Accomodation – Barrow Island, WA.



Image: Decmil Mulla Mulla Camp – Newman, WA.





# Process Infrastructure

## Delivering full engineering and design, procurement, and construction management services for critical process infrastructure.

BGER's process engineers have amassed considerable experience in mining, mineral processing, hydro and pyro-metallurgy, with specialist expertise in areas such as metallurgical test work management, process modelling, flowsheet development, commissioning, operations and maintenance.

Our team is also committed to delivering renewables-based hydrogen and ammonia projects. We bring relevant experience in H<sub>2</sub> and NH<sub>3</sub> production. This includes process design and novel technology development for H<sub>2</sub>, process safety, hazardous area classification as well as operations and management support for large scale air separation unit.

Collaborating with our clients, we tailor our approach to meet project requirement and provide support in process activities, such as process design, mass and energy balances, process optimisation, and concept studies, whilst maximising the use of recycles and renewable resources.

From concept/trade-off studies to detailed engineering and commissioning support, BGER helps clients to optimise costs, increase operational efficiencies and future proof their processing operations.

### Capabilities

- Alumina (Bayer Process) and High Purity Alumina (HPA)
- Lithium Plants (Hard Rock and Brine)
- Ammonia
- Hydrogen
- Rare Earths
- Nickel
- Vanadium
- Phosphate
- Gold
- Iron Ore
- Petrochemicals and Chemicals
- Salt and Potash





Image: Structural Integrity & Asset Inspection - Lake MacLeod, WA.

## Project Phases

**Our Structural team offer services throughout the project life cycle covering concept, PFS, FS, Detailed Design through to construction and commission support.**

- Concept Studies
- Pre-Feasibility Studies
- Bankable Feasibility Studies
- Front End Engineering Design
- Detailed Design
- Independent Review
- Construction Support
- 2D & 3D Design



Image: Koodaideri Phase 1 - Pilbara, WA.



# Projects





# Overland Conveyor Belt Change Facilities

Client: Rio Tinto

**We developed a low-risk belt replacement solution on Rio Tinto's longest overland conveyors to minimise lost production and lower impacts on existing road networks.**

We supported Rio Tinto through multiple project phases that included option identification, optioneering, equipment selection and detailed design through to implementation and close out support for the Overland Conveyor (OC) replacements at Western Turner Syncline (WTS). We provided multidisciplinary services spanning civil, structural, mechanical and electrical engineering.

Our scope of work encompassed the suitability and modification of belt changeout sites and the design of belt reeling platforms, splicing stations, clamp stations and belt flaking layouts for the four overland conveyors and the stacking conveyor, including auxiliary belt pulling drives specific for the changeouts.

During the WTS1 greenfield project construction phase, cost optimisation led to the OCs being constructed without belt replacement or belt splicing facilities. Since installation in 2014, these belts had not been replaced and were approaching their end of usable life.

In particular, the CV2104 conveyor belt which is 12 km long (25 km tape length) and the longest in the company's fleet is a critical component for both plant and production operations. Rio Tinto required a solution to allow these belts to be replaced according to their planned maintenance schedule which involved years of pre-planning.

Through our involvement over the past 4-5 years, BG&E Resources (BGER) identified an innovative approach to develop layouts that maximised the efficiency of the belt replacement and minimised impacts on existing road networks.



Tony Daniel, Program Manager – Sustaining Capital says, “This allowed the rest of the plant to continue operating during belt change-out, minimising the risk of lost production and work required during shutdowns.”

The low-risk solution optimised belt changeout to simplify earthworks, eliminating the need to source fill materials as well as reducing risk to ethnographic sites. By developing a relocatable solution, the scope of the project was optimised, thereby removing the need for the fabrication of duplicate items and overland power supply by utilising portable, temporary power controls.

“This complex multidisciplinary brownfield project is a testament to BGER's commitment to delivering high quality sustaining capital works,” adds Tony.



# Stanley Point 3 Port Expansion

Client: Roy Hill

**We have played a key role in the expansion of one of the largest bulk commodities ports in the world, completing three engagements.**

To support the long-term strategic planning of its existing mine and port infrastructure, Roy Hill has commenced the detailed design phase of the proposed Stanley Point 3 Port Expansion Project to increase the current export capacity from 60-64 Mtpa to 102 Mtpa.

BGER was engaged to provide a range of multidisciplinary capabilities including civil, structural, mechanical, and electrical.

#### Concept Engineering Study

We have completed this study and determined optimal solutions for magnetite handling from within the Ridley Development Envelope at Port Hedland, and into the Stanley Point 3 shiploading circuit.

As part of this study, our team provided a detailed assessment of the options including identifying and developing feasible conveying and transport routes. They also undertook a high-level assessment of the proposed assets and identified mitigation measures to prevent issues relating to handling the higher-density product.

#### Feasibility Study

Further to the Concept Engineering Study, we were asked to complete the Feasibility Study. Our team incorporated sufficient engineering definition (15%) to support a Class 4 cost estimate for a base case integrated stockyard and split yard solution.

Progressive delivery combined with 3DEGlobal's Indian Design Modelling Centre was effectively utilised to facilitate rapid development of the design documentation in an aggressive 16-week schedule to achieve the Financial Investment Decision milestone.

#### Energy & Power Feasibility Study

Our third engagement on this project helped to determine the overall power and energy demand for the new infrastructure planned for Berth 3.

The BGER NetZero in Design approach was integrated throughout the project life cycle to enable Roy Hill to achieve its targets as efficiently as possible.

Engineering design and approvals are now well advanced for the Stanley Point 3 expansion, which will support the rising demand in exports in the coming years for the global energy transition.



# ROM 3 Crushing Station 4

Client: Roy Hill

**To maintain required production levels, Roy Hill required a new crushing facility 6 km from the existing infrastructure.**

Schedule was critical to the success of the project to provide access to new ore bodies prior to depletion of existing ones. To cater for a diverse range of ore types, Roy Hill's existing crushing facilities included two trains: jaw crusher for harder material and primary and secondary sizers for softer materials.

This option allowed finer materials to bypass the crusher, thereby reducing the crusher duty by over 50% while maintaining required throughput. This option also reduced the suite of new crushing equipment required significantly relative to the originally envisaged ROM 3 crushing requirements: 2 sizers and jaw crusher reduced to a single jaw gyratory crusher, 4 conveyors and transfers reduced to a single conveyor.

The absorbed power requirements for the new crushing station were reduced to approximately 25% of the base case sizing station. A significant portion of this power reduction is attributable to improved comminution efficiency and reduced wear on crushing equipment. The scalped jaw gyratory crushing station is projected to have a significantly lower per tonne operating cost than the existing sizing stations.

The Thyssen Krupp Jaw Gyratory Crusher selected by BGER has several benefits:

- Allows feeding from a scalping grizzly due to the expanded single-sided opening.
- Enables the crusher to accept significantly larger top size materials.
- Provides a high crushing size reduction ratio which produces a finer product in a single stage of crushing. In turn, this reduces the wear on downstream equipment and assists with reducing load on downstream crushing stages.

Image: ROM 3 Crushing Station - Ginbata, WA.





# Marandoo and Hope Downs 4 (HD4) Structural Upgrades

Client: Rio Tinto

**BGER developed an innovative solution to successfully mitigate complex structural risks.**

The Primary Crusher (PC) at Rio Tinto's Marandoo facility was identified as a Class IV risk in terms of structural integrity. It was generating vibration levels that were 100 times greater than permitted standards.

BGER developed an innovative solution featuring a large concrete and steel isolation frame that was mounted on air springs to the underside of the existing floor.

Our team completed the feasibility study, detailed design, including shop detailing, construction support and commissioning support to resolve structural dynamics issues on this project.

Our team also provided access to the model in a virtual reality environment giving both Rio Tinto and construction contractor the ability to prepare for shutdown work in a fully immersive environment. This resulted in the contractor being able to better plan its their work and minimise the risk of issues during construction and commissioning.

The success of the project at Marandoo saw Rio Tinto engage BGER to implement a similar solution at the Hope Downs 4 (HD4) PC. Both crushers are now operating well and vibration levels are within design requirements.

Image: HD4 Fabrication Site – Jandakot, WA



Image: Marandoo Mine Site - Pilbara, WA.



# Transport Steel

Client: Laing O'Rourke

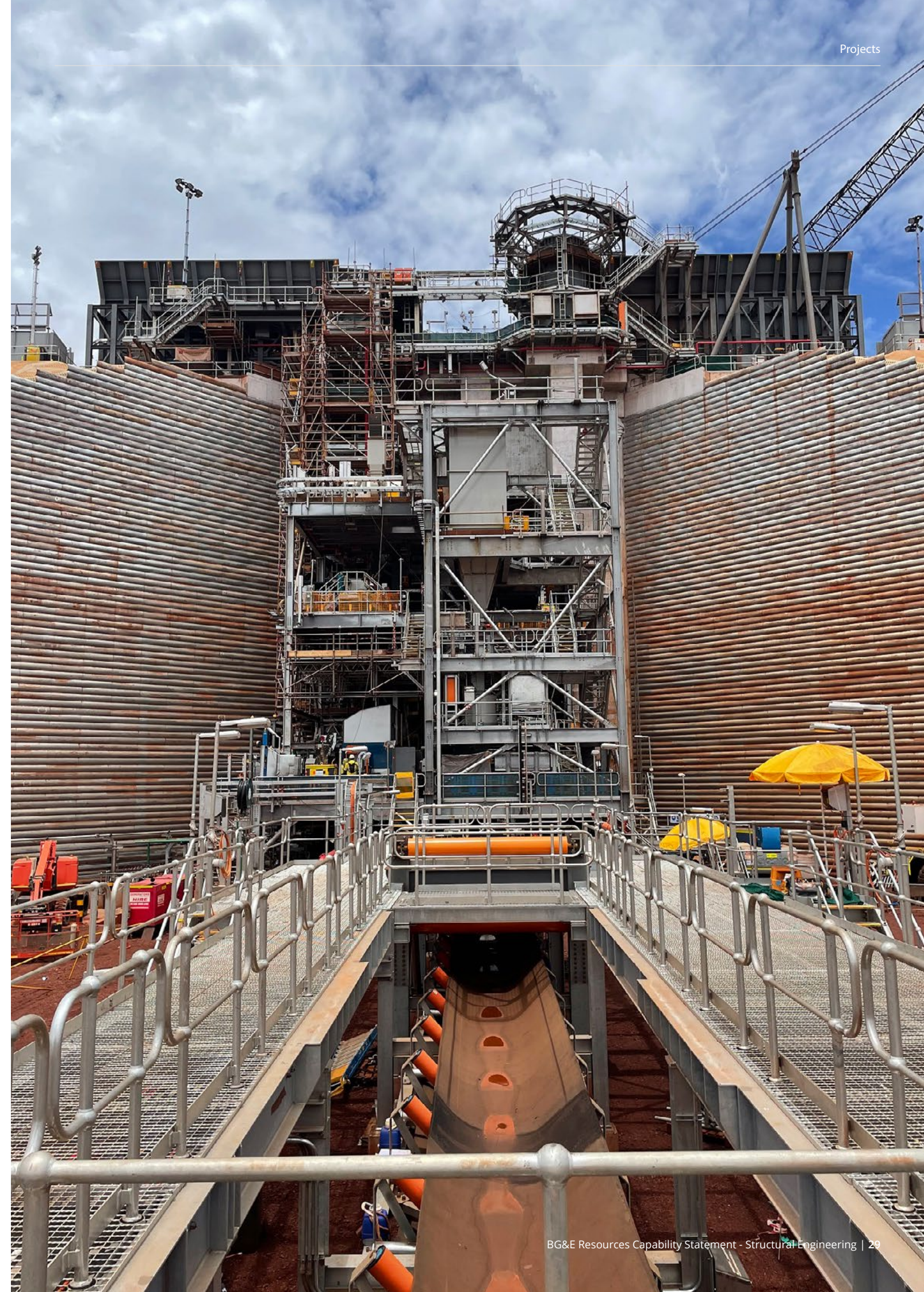
**Laing O'Rourke required the design and documentation of transport steel to allow a modularised solution for construction.**

BGER was engaged to design and document the Transport Steel to allow a modular construction solution for Rio Tinto's greenfield mine expansion project - the Koodaideri Phase 1.

Transportation Steel incorporates all steelwork that is required to strengthen or support the modules during transport by land or sea and during lifting.

A few years ago, members of our Structural Engineering team completed a similar transport steel design for Laing O'Rourke for the Roy Hill Package 3 steel modules. Many of the lessons learned during this project were implemented for the Koodaideri modules project.

Images: Koodaideri  
Phase 1 - Pilbara, WA.







# Stacker Truss Conveyor Refurbishment

Client: Dampier Salt Limited

**We helped to remediate a stacker truss to an accelerated timeline to minimise downtime and ensure safety.**

During a routine structural integrity audit, the existing CV02 stacker truss was found to be severely degraded through corrosion and was taken off-line.

BGER undertook a detailed option study to investigate potential methods of remediation of the truss that would allow the work to be carried out safely while access to the truss structure and an exclusion zone under the truss was prevented. Following this study, the decision was made to replace the trusses.

Our team developed a solution to enable the safe removal of the corroded trusses and ties while retaining the existing trestles and ensuring the work could be performed from above the conveyor.

Detailed drawings were successfully produced and delivered on an accelerated timeline to allow construction to occur over a scheduled shutdown period.

Image: Stacker  
Truss Conveyor  
Refurbishment –  
Lake MacLeod, WA.



# Structural Integrity & Asset Inspection

Client: Rio Tinto / Dampier Salt

## BGER has helped Rio Tinto and Dampier Salt mitigate their mine and port assets.

We have undertaken numerous Structural Integrity (SI) and asset inspections of fixed plants for Rio Tinto and Dampier Salt including both mine and port facilities.

The scope of works included conducting a high-level inspection of the fixed plants to assist in estimating the time required to complete the structural integrity inspections.

BGER collaborated with Rio Tinto's AMES team to deliver continuous improvements in the SI program and processes required to mitigate risks and inform decision making.

Our team provided extensive support and professional services in developing the Asset Integrity and Reporting Tools, Standards and Structures used throughout the Rio Tinto Iron Ore and Dampier Salt organisations.



# Yandicoogina MEM Workshop

Client: Formstruct / Rio Tinto

## An upgrade of the Yandicoogina Mine Site Workshop was required in order to keep up with the growing demand for iron ore.

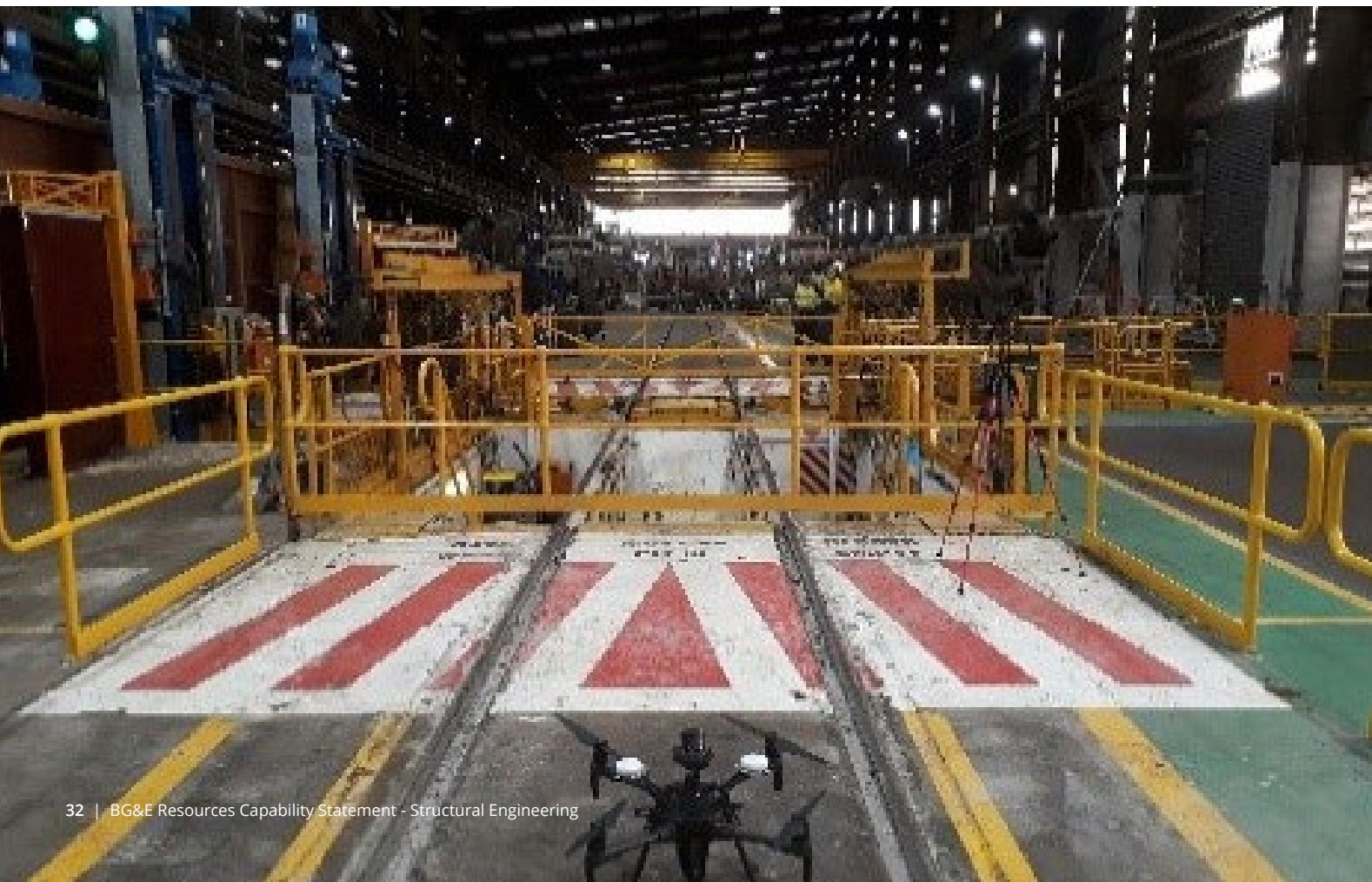
Rio Tinto proudly produces five iron ore products in Western Australia – including the Pilbara Blend, which is the world's most recognised brand of iron ore and used in steelworks as sinter plant feed or direct blast furnace feed.

The Yandicoogina products have 58% iron content and low impurities and produce a high-iron sinter. It is primarily used within East Asia and Southern China, as the base load in their sinter blend.

Formstruct contracted BGER to provide engineering services for the detailed design phase of the project.

The scope of works included the structural design and documentation of the proposed new MEM workshop incorporating initiatives following the value engineering process, structural detailed design drawings and liaising with the design team to develop documentation to IFC.

The workshop consists of a 30m x 25m x 17m steel framed structure with an associated tool store and pipe rack. The workshop floor comprises a 400mm thick reinforced concrete slab. Steel fibres were used in the slab, in place of the traditional bar and mesh reinforcement.





# Our Structural Engineering Team



**Keith O'Connor**  
**Discipline Lead - Structural**

10 years of experience spanning civil and structural design, project management and asset integrity engineering working across the resources, bulk handling, industrial and commercial sectors. Keith is a great communicator who enjoys being in a client facing role managing the direction of a project just as much as he enjoys producing efficient and innovative engineering designs.



**Steve Ash**  
**Technical Director of Engineering**

25 years of experience as a structural engineer and in the design of structures for brownfields mining and resource projects. Steve believes in applying the most appropriate engineering approach to solving engineering problems efficiently. His technical experience includes a broad range of projects across the globe including land based and marine structures, process plants and NPI, dynamics and 3rd Part Audits.



**Lianto Hardy**  
**Principal Structural Engineer**

24 years of experience in the resources, commercial, residential, and industrial sector as well as infrastructure master planning. He has worked on various resources projects for BHP, Rio Tinto, FMG, Roy Hill, and Mineral Resources. Lianto's areas of expertise include analysis and design of various structures and foundation systems for dry and wet plant, modularization, heavy lift and transport studies and transportable building.



**Jen Lee**  
**Principal Structural Engineer**

20 years of experience in the design and construction in a broad range of projects, including mining and resources, civil infrastructure, industrial and commercial. Jen has been involved in the design of iron ore crushing station, overland conveyor, load out tunnel, structural integrity inspection, and lithium processing plants.



**Javier Blocki**  
**Principal Structural Engineer**

21 years of experience delivering greenfield, brownfield, and sustained capital projects. He is experienced in all project phases from detailed design, pre and feasibility and concept studies. He has demonstrated expertise in steel & reinforced concrete analysis and design, as well as foundations analysis and design. Javier has extensive experience in preparing MTO's, structural design criteria & specifications, reviewing mechanical packages and providing site support.



**Michael Flynn**  
**Principal Structural Engineer**

27 years of experience both nationally and internationally; most recent roles being Sector Lead Design at Hunter H2O in the Hunter Region of NSW. Michael is a highly skilled and experienced and principal/executive level engineer and design and project manager.



# Our Structural Engineering Team



**Ravikumar Madhavan**  
Principal Structural Engineer

30 years of experience in industries including mining, oil and gas (onshore and offshore), marine and industrial structures. Ravikumar's areas of expertise include concept and detailed design of large structures, brownfield works (design for upgrade, life extension modification and repair), advanced analysis.



**Judie Agustin**  
Lead Structural Engineer

15 years of experience in the design and construction of a wide range of engineering projects in Australia and overseas. Judie has been involved in the delivery of recent key projects such as Roy Hill Ultrafines Magnetic Separation Building and multiple Structural Integrity and Asset Management Inspections for Dampier Salt Ltd, BHP and FMG.



**Adrian Goh**  
Senior Structural Engineer

15 years of experience in the resources, oil & gas and commercial sectors including structural design, structural integrity inspections and project engineering. Adrian is a diligent engineer with a keen eye for details and is well accustomed to working both for design consultancies and asset owners alike.



**Chris Huxtable**  
Lead Structural Engineer

10 years of design and project experience with a wide range of architectural and engineering structures in Australia and overseas. He has experience in the design and coordination steel framed structures as well as reinforced, post-tensioned and precast concrete for various building usages. Chris is an engineer with a proven ability to deliver projects from concept to completion.



**Farzaneh Saebi**  
Senior Structural Engineer

19 years of experience with expertise in the construction sector both in Iran and Australia, working on multi-million-dollar projects across Western Australia. Her special competencies are structural design of heavy industrial, office and commercial buildings, material handling and switchyard plant's structure and footing to various international and Australian standards.



**Mark Ryder**  
Senior Structural Engineer

9 years of experience in a variety of projects in WA. Mark has extensive experience in structural inspections and integrity reports of mining and marine infrastructure as well as structural design in steel and concrete. He is well versed in project management, stakeholder consultation, site coordination, and scope and quote preparation.



# Our Structural Engineering Team



**Max Wong**  
Senior Structural Engineer

8 years of experience in mining and mineral projects. Max is very detail-orientated providing efficient designs and construction engineering methods. Max is known for maintaining good relationships with key stakeholders ensuring a smooth transition from all aspects of design, construction support and delivery.



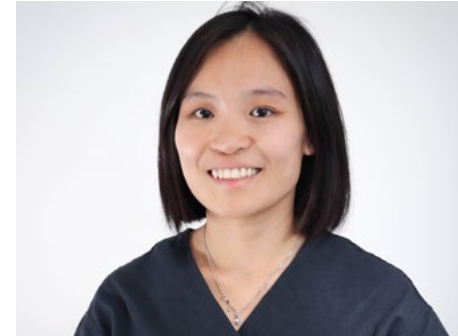
**Nico Kusnadi**  
Lead Structural Engineer

29 years of structural design experience in Indonesia, Singapore, Middle East, and Australia. He has successfully completed the design of various type of structure system such as concrete and steel construction for commercial, industrial, mining and resources as well as residential structures.



**Sam Smith**  
Senior Structural Engineer

7 years of experience in mining and mineral processing projects. His experiences include structural design and field engineering of wet and dry process plants as well as the design of non-process infrastructure. The first 3 years of his career as a structural engineer on the Mina De Cobre Panama project, a \$6.3 billion greenfield copper project handling 85 Mtpa of ore throughput.



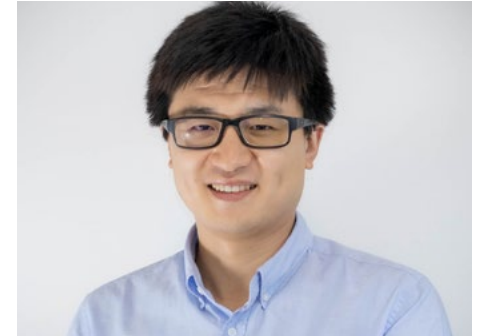
**Anna Ling**  
Structural Engineer

8 years of experience in successfully managing and executing a wide range of projects encompassing structural, civil, and oil and gas industries. Her expertise lies in delivering precise engineering designs, ensuring compliance with industry standards, and proficiently utilising structural analysis software. Her proficiency spans structural analysis, foundation design, and the integration of sustainable engineering practices.



**Felix Wong**  
Structural Engineer

4 years of experience in the construction industry and provided services in both fields of engineering consultancy and site works. Felix has carried out analysis, design and reviews for projects of various sectors involving residential, commercial, industrial and mining structures, utilising fresh innovation in achieving client-focused solutions, diligence in driving a project to completion.



**Renjie Teng**  
Structural Engineer

4 years of experience in geotechnical and structural engineering. Renjie is experienced in conducting steel and concrete structural design and analysis. He is also experienced in the design and modelling of earthworks and geotechnical site investigation.

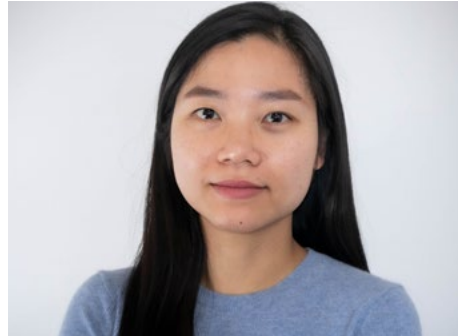


# Our Structural Engineering Team



**Syed Zaidi**  
**Structural Engineer**

20 years of experienced working in various Structural and Civil Engineering roles. He has exposure to complex and high-end projects across stadiums, sporting facilities, the mining industry, industrial, schools, hospitals, and residential structures. His experience spans a wider spectrum from working in the U.A.E., Qatar, Australia, and Pakistan.



**Lucy Nguyen**  
**Structural Engineer**

Lucy specialises in structural engineering with an outstanding performance. She has a wide breadth of knowledge in steel and concrete design. Lucy is proficient in Life Cycle Assessment of the built form and is an advanced user of eToolLCD.



**Kenneth Gregorio**  
**Graduate Structural Engineer**

Kenneth is a graduate structural engineer with 1 year experience in the Resources sector including structural design and structural integrity inspections. While working at BG&E Resources, he has gained extensive experience in structural design checks, and preparing structural integrity reports. Kenneth is proficient in software including Space Gass, LimCon, and HILTI Profis.



# Offices

## Perth

Level 10  
240 St Georges Terrace  
Perth WA 6000  
Australia  
+61 8 6375 9100  
info@bge-resources.com

Level 3  
168 St Georges Terrace  
Perth WA 6000  
Australia  
+ 61 8 6375 9100  
info@bge-resources.com

## Brisbane

Level 5, 180 Ann Street,  
Brisbane QLD 4000  
Australia  
+61 7 3167 3300  
info@bge-resources.com

## Mandurah

Level 2  
55 Sutton Street  
Mandurah WA 6210  
Australia  
+61 8 6375 9100  
info@bge-resources.com

## Newcastle

Suite 2, Level 3  
175 Scott Street  
Newcastle NSW 2300  
+61 2 4091 2700  
info@bge-resources.com

## Townsville

4a Somer Street  
Hyde Park QLD 4812  
Australia  
+61 7 4724 0640  
info@bge-resources.com

BG&E Resources is a multidisciplinary engineering, design, project delivery and advisory consultancy, providing technical solutions for clients in the Resources, Energy and Industrial sectors. We are majority owned by our employees, who are united by our purpose – together, we embrace innovation to solve complex problems, for today and future generations.

[bge-resources.com](http://bge-resources.com)

