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*More in.
More out.*

Intech
ENGINEERS 

Intech
ENGINEERS 

INSPIRATION,

We take a whole-of-business approach and combine multiple engineering disciplines to maximise the value of mining projects.

OUR WORK IS DRIVEN BY OUR CULTURE,



MORE INVESTED

We give our all in all we do.



MORE INTERROGATIVE

We work harder to understand your needs.



MORE INTEGRATION

We believe success is a team play.



MORE INSIGHT

Our knowledge is your edge.



MORE INNOVATION

We harness new ideas and technology.



MORE INTEGRITY

We do the right thing by our stakeholders.



MORE CAPABILITY, ›

Intech Engineers offers world-class capabilities spanning the entire project lifecycle. For some clients we manage their project from go to whoa, from conceptualisation through to commissioning. For others, just the phases they need help with like conducting feasibility studies, developing specialised contracts or eliminating bottlenecks. Whatever their needs, our clients call on us to maximise the value of their mining projects. And you can too.



DEFINE ›

Any engineer will tell you that the best opportunity to save costs, trim timelines, improve safety and optimise business outcomes is during the initial phases of a project. Intech combines practical know-how in total project delivery with niche specialist skills required within the front end of projects to give you confidence in your strategic investment decisions.

- Project assessment
- Scoping studies
- Feasibility studies
- Project definition
- FEED studies
- Business Case

Intech offers a range of project delivery solutions including engineering, procurement, construction and project management services. Whatever your needs, we are committed to helping you manage the best value option identified during the Define phase into a safe, sustainable and successful project. We have a proven track record for delivering projects on time and within budget and for extracting maximum value for our clients.

- Engineering
- Procurement
- Construction management
- Contracts management
- Operational readiness

DELIVER ›

More production. Less cost. More efficiencies. Less waste. We have what it takes to make the most of brownfield operations. Our track record shows we can solve your complex operational issues in very tight timeframes to save millions in some cases. We have a trained eye for inefficient processes and can deliver solutions for major cost savings and performance improvements.

- Debottlenecking
- Asset optimisation
- Risk management
- Maintenance services
- Cost benchmarking

ENHANCE ›

INTEGRATED SOLUTIONS, »

electrical

- High voltage and low voltage power systems
- PLC and SCADA/HMI programming
- Wireless and remote systems
- Installation and scope definition
- Substation and switchroom design
- Hardware design and specs

mechanical

- Pumping and piping design
- Materials handling design
- Tank design
- Mine ventilation
- Mine dewatering

project management

- Program
- Cost tracking
- Risk assessment
- Contracts and commercial

civil / structural

- Light & heavy vehicle roads
- Bulk & detailed earthworks
- Airstrips
- Water diversion drainage
- Tailings dams, evaporation ponds
- Buildings
- Process plant structural design

financial

- Capital estimating with iBase
- Operation cost estimating
- Value engineering
- Financial modeling
- Risk analysis

process

- Plant layout
- Process design – flowsheets, mass balances, P&IDs
- Equipment selection
- Process audits

MORE EXPERIENCE, »

From Moura to Mozambique, Intech has kicked up a lot of dust at a long list of mining operations over the past 20 years. Our people have worked around the world and across multiple industries to solve complex engineering challenges.

The company is known for its whole-of-lifecycle capabilities and valued for providing holistic, integrated solutions. Our team has expertise across all engineering disciplines including process, mechanical, electrical,

civil, structural and automation. We can also call on a network of niche specialists to answer your call for more value.

Over the next few pages, you'll find just some of the projects we have successfully completed. The fact is, we have worked on hundreds of projects for a diverse set of clients but each with a similar story to tell. We put more in. They get more out.



Bulk Commodities

Intech provides considerable industry expertise, process and technical excellence across the coal, iron ore and bauxite industries.

While we have made a name for ourselves in mine optimisation, our expertise covers all aspects of mine development, processing, materials handling, transportation and infrastructure from pit to port.

Metals

Our in-depth understanding of complex metallurgical processes ensures we are able to design, deliver and optimise critical assets in the gold, silver, copper, nickel, lead, and zinc extraction.

We can participate in all phases of a project including scoping studies, feasibility, engineering, procurement, construction and asset maintenance and optimisation.

Industrial Commodities

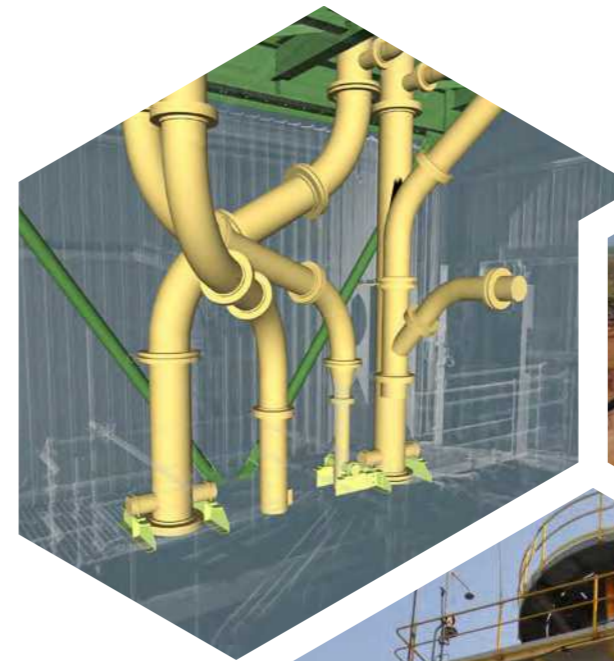
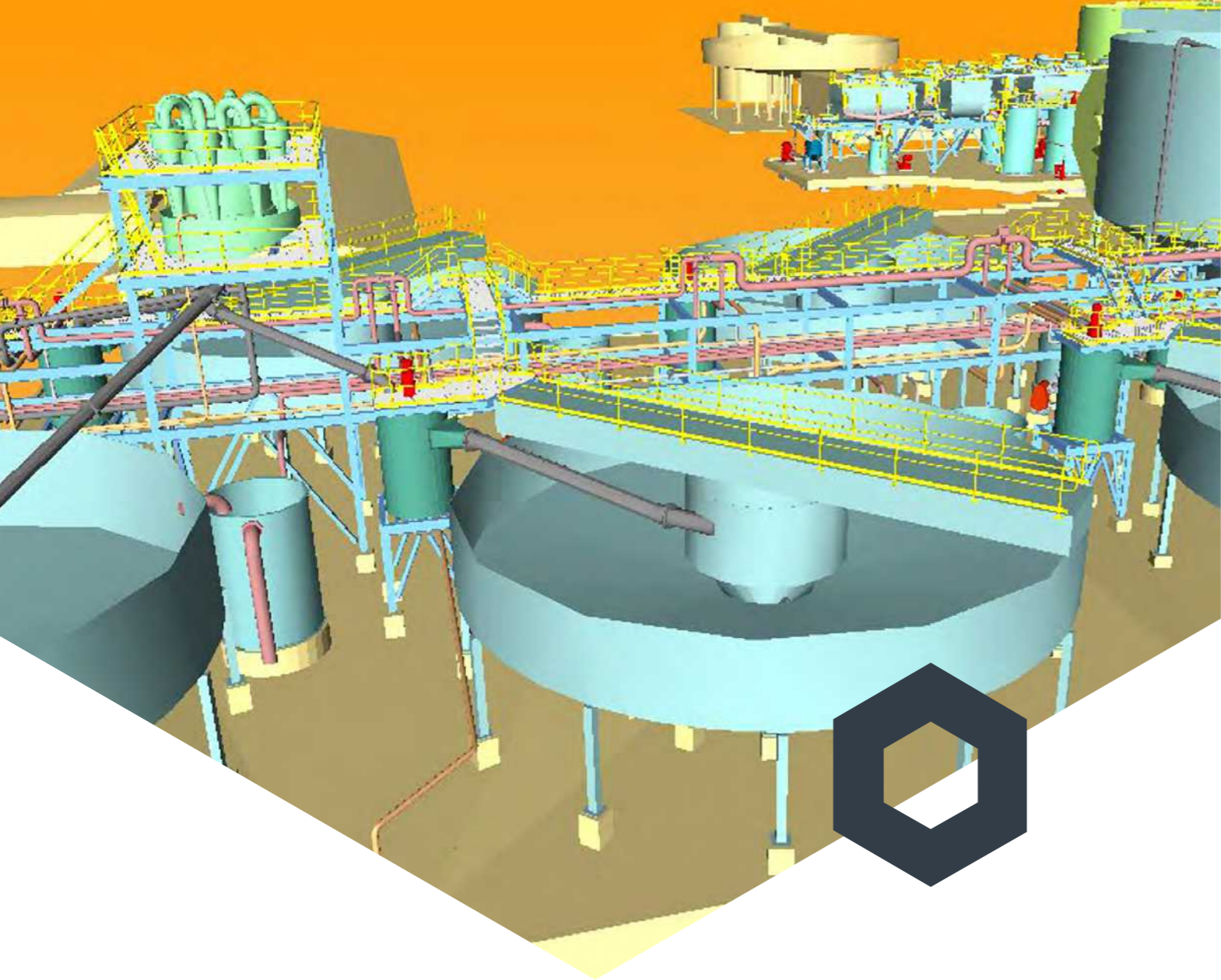
We have had significant exposure to many industrial commodities including mineral sands, graphite, and rare earths.

While the commodity may vary, our approach stays the same – we rely on our experience to help our clients meet aggressive schedules, reduce costs, and promote operability and maintainability.

Other

Our people bring together diverse backgrounds and experiences to successfully answer the most difficult engineering challenges across any industry, including oil and gas, and uranium.

We have a strong track record of delivering results that help keep our clients safe, sustainable and successful.



PROCESSING

Intech has a long track record in process plant engineering. We help clients improve existing facilities or build new ones that are safer, more sustainable, and more economically competitive in terms of minimising capital intensity and ongoing costs. We provide complete processing solutions, including process design, engineering, construction, cost estimating, and robust feasibility studies that you can take to the bank.

We have delivered exceptional results for clients in Australia and internationally across the copper, gold, nickel, zinc, lead and uranium industries in both

greenfield operations and brownfield expansions. Expertise is drawn from our own engineers and also sourced from external metallurgical specialists and technology providers for specific process requirements.

- › CRUSHING AND MILLING
- › HEAP LEACH, TANK LEACH
- › HYDRO-METALLURGY, SXEW
- › MATERIALS HANDLING
- › FLOTATION

Client: Fortescue Metals Group
Mine: Cloudbreak Iron Ore Mine
Challenge: De-bottleneck processing plant to allow production to be increased.

Solution: 3D scanning and plant modelling was used to position new equipment and design pipework that was installed into an already congested process plant without any construction issues.

Results: A very aggressive four month program was able to deliver production increases without any significant downtime.

Client: Carpentaria Gold
Mine: Mt Wright Gold Mine
Challenge: Modify ore processing plant to improve recovery.

Solution: A new gravity circuit was designed and installed to provide 2Mtpa capacity including two Nelson concentrators and an Acacia Intensive Cyanidation Reactor.

Results: The refurbished plant was running at nameplate capacity within 30 minutes of initial start up. A one percent increase in recovery was achieved providing a very short payback period for the project.

Client: CST Mining Group
Mine: Lady Annie Copper Mine
Challenge: Extend the leach pad capacity for a longer project life.

Solution: Designed and delivered nine new leach pads, W-drain system, process ponds, 1km of conveyor extensions and a new conveyor, plus an improved HV reticulation.

Results: Saved the client \$3 million of civil works and delivered improved performance with minimal downtime.



SURFACE INFRASTRUCTURE,

After decades of working in the mining industry in Australia and overseas, Intech's experience covers most surface infrastructure you'll find in a mine. We have delivered solutions right across the project lifecycle to ensure our clients extract the maximum value from their buildings and workshops, pumps and pipelines, roads and dams, electrical and communications facilities.

A little insight goes a long way. Our concept designs feature layouts which isolate plant and vehicle movements, minimise service runs and provide functional worker access. Our water management systems incorporate automation and remote monitoring

to meet current compliance requirements. Our proprietary pipeline design tools cut millions of dollars off project bottom lines. These are just some of the solutions helping our clients to achieve more.

- › HEAVY & LIGHT VEHICLE ROADS
- › TAILINGS AND WATER STORAGE DAMS
- › EVAPORATION PONDS
- › BUILDINGS AND WORKSHOPS
- › OVERHEAD POWERLINES
- › ELECTRICAL SERVICES
- › COMMUNICATIONS
- › PUMPS AND PIPELINES

Client: Gold Fields

Mine: Agnew Gold Mine

Challenge: Design and construct a package of infrastructure for an underground mine to be developed off the ramp of an operating pit.

Solution: Intech designed high voltage powerlines, electrical reticulation, water management and ventilation solutions to fit around the mine open pit and worked with the operations team to construct without impacting on operations.

Results: The use of skid mounted switch rooms and equipment allowed quick installation minimising site time and cost. When a slip in the pit wall threatened equipment it was able to be relocated in a quick shutdown.

Client: CST Mining Group

Mine: Lady Annie Copper Mine

Challenge: Design and deliver a new workshop for working on Caterpillar 785 dump trucks with the bodies raised.

Solution: A traffic management design was developed that improved inherent safety by ensuring separation of heavy vehicles, light vehicles and pedestrians. The project also involved the drainage of maintenance and fuelling fluids to a sump and hydrocarbon separator.

Results: Improved environmental and safety outcomes for less capital intensity and minimal downtime.

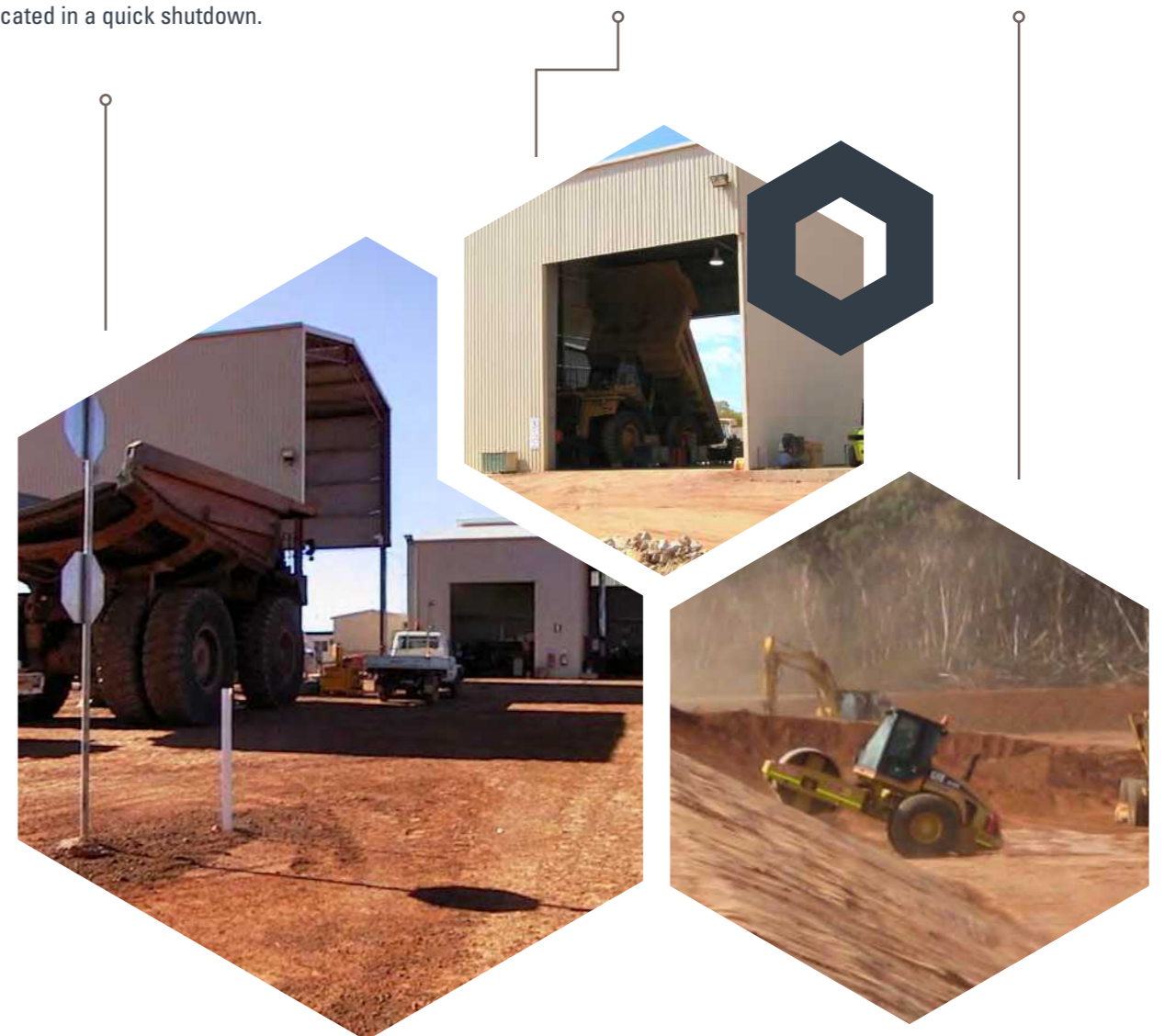
Client: Glencore

Mine: McArthur River Mine

Challenge: Design and deliver a new tailings dam lift prior to the wet season.

Solution: Waste mine rock was used to fill the existing pit crest before clay fill was dumped with side tippers.

Results: The first lift was completed before the wet season. The rock base reduced costs by reducing the need for compaction while allowing better seismic performance and allowing a further one metre of lift to be achieved.





UNDERGROUND INFRASTRUCTURE

Intech people are widely known for digging deeper so it comes as no surprise that our expertise extends to providing proven underground infrastructure solutions. Our wide scope of capabilities means we have delivered a long list of projects from underground workshops and refuge stations to mechanical and electrical installations such as pump stations HV reticulations substations and mine ventilation systems.

and site interruptions. Our proprietary iBase estimating system, financial tools and modelling technologies provide budget and timeline certainty and give you the confidence you need to make investment decisions.

- › MINE VENTILATION
- › UNDERGROUND PUMP STATIONS
- › RAISE BORE CONTRACTING
- › HV & 1000 V DISTRIBUTION
- › COMMUNICATIONS
- › COMPRESSED AIR

At all times, we seek to create maximum value for your investment. Where suitable, we utilise standard designs, often skid mounted to reduce onsite costs

Client: Western Areas

Mine: Spotted Quoll Nickel Mine

Challenge: Design and deliver a new underground mine from a portal in the open pit.

Solution: Engineering and construction of the project followed a robust feasibility study. High voltage distribution was a large component and included a 4MW power station and 11kV distribution along with underground dewatering, communications and paste fill.

Results: Budgets and work programs were met while providing a safer underground work environment. An advanced dewatering solution resulted in no water delays for the mine, an issue that had plagued other mines on site.

Client: Randgold Resources

Mine: Kibali Gold Mine

Challenge: Design of underground mine infrastructure.

Solution: Intech designed a number of specialist infrastructure assets including underground pump stations, design confirmation of the high voltage distribution and an underground diesel fuelling system 300 metres below surface.

Results: Intech was able to use previous well developed pump station designs refined at a number of different mines and this saved time and cost for the owner.

Client: Western Areas

Mine: Flying Fox Nickel Mine

Challenge: Upgrade mine ventilation.

Solution: Intech worked with fan vendors and mine designers to specify duty points and select a superior system. A revised electrical design resolved motor starting and electrical harmonics issues that were identified.

Results: Significant savings were delivered by contracting an alternative fan vendor.



WATER MANAGEMENT

Intech understands how essential efficient water management is to all mining and mineral processing activities. We have delivered a raft of solutions for our clients from preliminary approvals to decommissioning and closure which adhere to the most stringent environmental and socially responsible policies.

As a company that understands the power of collaboration, we offer an integrated approach to mine water management. We combine our specialist expertise in this area with external geotechnical, environmental and mining skills. Our extensive

experience enables us to provide cost-effective, practical solutions for your project, and identify methods for more efficient utilisation of water.

- › TAILINGS AND WATER STORAGE DAMS
- › EVAPORATION PONDS
- › PUMPS AND PIPELINES
- › REINJECTION BORES
- › TAILINGS HANDLING
- › CONTROLS, AUTOMATION AND REMOTE MONITORING

Client: Glencore

Mine: McArthur River Mine

Challenge: Design and deliver new water management system to reduce the risk of wet season rainfall shutting down mining operations.

Solution: A system of dewatering bores, pumps, pipelines and controls were designed following an intensive examination of the mine.

Results: A ring main around the pit allowed flexible arrangement of pumps to deal with changing flows. We also managed the installation contractor to save time and money.

Client: Western Areas

Mine: Flying Fox Nickel Mine

Challenge: Design and deliver underground and surface pumping systems that first remove water from the mine into old pits and aquifers and then later into new evaporation ponds.

Solution: In all, the project involved the construction of over 200Ha of dams and ponds, 80km of pipelines, and six large pump stations controlled by a SCADA system featuring fibre optic communication and leak detection.

Results: A robust, flexible, and highly effective water management system reduced the risk of mal-operation and spills while the ability to control the system remotely improved support and reduced costs.

Client: Heron Resources

Mine: A1 Mine

Challenge: For a mine in a very tight and sensitive site, Intech was asked to design a system to intercept potentially contaminated water and divert it so that it did not enter a stream running past the mine.

Solution: Intech designed a system where water flow was measured with a turbidity sensor and contaminated water was pumped to a new pond where it could be treated and reused.

Results: The system provided surety around environmental compliance and the potential for contamination leaving the lease.



INDUSTRIAL

While Intech is a well-known name in mining circles, our engineers are also experienced in the design, delivery and improvement of industrial processing plants. We have handled a number of projects for clients in the business of processing, refining, handling, manufacturing or treating hydrocarbons, petrochemicals, gases, waste, bulk materials, minerals or other manufactured products.

By using the same rigour and processes we apply to any mining project, we are able to deliver cost effective

solutions that increase production, reduce bottlenecks, improve efficiency, upgrade old technologies, and refurbish or repair existing facilities.

- › PLANT SPECIFICATION
- › CONTROL SYSTEM DESIGN
- › PIPING DESIGN
- › MATERIALS HANDLING
- › ELECTRICAL DESIGN

Project: Dissolved Acetylene Plant

Challenge: Design and deliver a new acetylene plant, including the building, electrical and control systems for a hazardous area.

Solution: Scanning and modelling were used to resolve contested areas of services before concepts of the plant layout and piping were completed. A new hazardous area Siemens HMI interface and controls system was also installed.

Results: With all controls on a common platform, production and operator utility were greatly improved.

Client: Queensland Rail

Project: Rail Profiler

Challenge: Spillage of coal from rail wagons was an environmental problem and could also cause delays in loading trains when wagons were overfilled.

Solution: Intech designed a system for levelling and removing excess coal from wagons. Laser scanning was used to determine where problems existed and control a set of blades that could adjust to trim off wagons.

Results: Spillage was greatly reduced to protect the environment and the company's bottom line while delays were also significantly decreased to provide further cost savings.

Client: Brisbane City Council

Project: Advanced Water Treatment Plant

Challenge: Collect effluent water and clean it to provide water for sale for an oil refinery.

Solution: A concept water treatment plant was designed and costed to provide financials for the business case development.

Results: The business case allowed further commercial negotiations to proceed to a successful outcome.

