



CLIENTS | PEOPLE | PERFORMANCE

# MINING SOLUTIONS



GHD IS AN INTERNATIONAL PROFESSIONAL SERVICES COMPANY. OUR PEOPLE DELIVER INNOVATIVE SOLUTIONS BY COMBINING TECHNICAL SKILL AND EXPERIENCE WITH AN UNDERSTANDING OF OUR CLIENTS' OBJECTIVES AND ASPIRATIONS.

GHD provides integrated, innovative and financially viable mining solutions that result in optimum project outcomes to match your business needs. From mine concept to mine closure, the GHD mining team works closely with you to provide an extensive range of mining services.

Our proven approach, track record, innovative solutions and commitment to delivery produce successful client outcomes. We look at your projects from a total life cycle perspective, rather than take a short-term view, applying world-class standards of technical competence.

### YOUR NEEDS

GHD has a range of technical specialists to support every stage of your mining and quarrying life cycle. We understand both the business and technical issues involved in delivering optimum project outcomes, and have the capability and commitment to assist you to successfully and profitably develop your mining prospect, operation or expansion plans.

We develop integrated solutions to match your business requirements, suiting your local ground conditions and environmental objectives.

Our systems synthesize the geological, mine planning, materials handling, metallurgical, tailings and environmental management, operational requirements and financial aspects of mining, making sure the many conflicting objectives in mine development are addressed and optimal solutions found.

Our projects span the globe – from South America to China, Middle East and Africa – addressing diverse regional factors, and delivering significant benefits to our clients through improved mine development and costing strategies. Working with you, we can deliver flexible and innovative solutions.



Bengalla mine infrastructure - Hunter Valley.



Coal mine - India.



Loy Yang mine - Victoria.



## OUR EXPERIENCE

### LOY YANG MINE AND POWER STATION, VICTORIA

GHD has delivered a wide range of mining and related services to Loy Yang on a continuous basis since planning for this project commenced in the early 1970s. Services delivered include whole of life and medium-term mine planning, mine plant reliability modelling, mine operational support, geological assessment, geotechnical engineering, hydrogeology, environmental management, tailings management and dam surveillance.

### PORT WARATAH COAL TERMINAL REDEVELOPMENT

GHD undertook concept design, project management, engineering and construction management of Stages One, and Two for this project. Works entailed a rail coal dump station, two 1,000-tonne rail receiving buffer bins, stockyard suppression systems, stackers and reclaimers, a shipping conveyor system, a shipping bin, weighing systems, samplers, shiploaders, and site buildings.

### CADIA RIDGEWAY GOLD MINE, NEW SOUTH WALES

GHD provided the design of the Ridgeway Gold Mine conveyor systems, which transport ore from deep underground, delivering it to the surface and lifting it 780 metres along the way. Two conveyor flights are involved, the second of which has a total lift of over 500 metres before discharging the ore onto a slewing/luffing stacker.

### COAL PREPARATION PLANT, LIDDELL

GHD undertook project management, design and documentation, and was superintendent for the Liddell Coal Preparation Plant. We delivered a 600-tonne hopper and a 20,000-tonne short-term holding pad to feed run-of-mine (ROM) coal to a screening plant and primary and secondary crushers on a 24 hour basis.

### FLYNN COAL FIELD DEVELOPMENT, VICTORIA

GHD prepared the conceptual design for this green-field open cut coal mine project at Flynn in Victoria's Latrobe Valley for Australian Power and Energy Ltd (APEL). Other services delivered include exploration, geological modelling and resource evaluation, mine planning, mining methods assessment, cost estimation, hydrogeology, geotechnical engineering, and regulatory approvals.

### BENGALLA MINE, HUNTER VALLEY

GHD assisted with the mine infrastructure from initial concept development and feasibility study, to project approval, detailed design and construction and project management. The scope was delivery of all services, road and rail transportation systems, water management and controlled saline discharge system, buildings and industrial services.



Exploration drilling - Philippines.



Tailings dam - Mt Keith.



Tarong mine - Queensland.

## OUR CAPABILITIES

- ▶ Corporate Governance and Due Diligence
- ▶ Feasibility Studies
- ▶ Mine Design and Mine Planning
- ▶ Mining Engineering
- ▶ Bulk Materials Handling and Reliability Modelling
- ▶ Mining Machine Specification
- ▶ Mineral Processing Plant Design
- ▶ Quarry Planning and Approvals
- ▶ Tailings Management
- ▶ Exploration and Mine Geological Resource Assessments
- ▶ Geotechnical Engineering and Engineering Geology
- ▶ Geophysics and Geophysical Logging
- ▶ Hydrogeological Assessment
- ▶ Mining Infrastructure
- ▶ Management Support and Training
- ▶ Simulation Studies: operations, transport links
- ▶ Risk Management
- ▶ Asset and Maintenance Management
- ▶ Mine Safety, OH&S support, Auditing and Training
- ▶ Mine Rehabilitation and Closure
- ▶ Environmental Engineering and Management
- ▶ Shafts and Hoisting
- ▶ Underground Mine Services
- ▶ Mine Ventilation and Cooling Systems
- ▶ Roads and Railways
- ▶ Pumps and Pipelines
- ▶ Mechanical, Fire and Hydraulic Services
- ▶ Power and Communications
- ▶ Water and Wastewater
- ▶ Construction and Project Management
- ▶ Planning Services



## ABOUT GHD

GHD is an international professional services company. Our people deliver innovative solutions by combining technical skill and experience with an understanding of our clients' objectives and aspirations.

With more than 6000 people in a network of 100-plus offices throughout Australia, New Zealand, Asia, the Middle East, the Americas and Europe, we serve clients in the global market sectors of infrastructure, mining and industry, defence, property and buildings and the environment.

Central to our clients' prosperity and GHD's success are forward-thinking engineers, architects, planners, scientists, drafters, project managers, economists and supporting staff. Our people embrace the core values that have sustained the company since inception – **Teamwork, Respect and Integrity.**

Established in 1928, GHD is ranked as one of the world's leading engineering, architecture and consultancy firms. We are dedicated to our clients and their stakeholders, to being a responsible corporate citizen and to improving the quality of life around the world.

We contribute to the goals of sustainable development and are committed to managing the social, economic and environmental impacts of our operations and assisting our clients to manage theirs in the provision of our technical consulting services. We recognise innovation as the key to realising this objective.

As a member of the World Business Council for Sustainable Development (WBCSD), GHD actively participates in the public debate on the role business has to play in managing climate change, energy, development and ecosystems.

GHD operates under a Practice Quality Management System that is certified to AS/NZS ISO 9001:2000 and our Environmental Management System (EMS) is accredited to international standard ISO 14001 by NATA Certification Services International (NCSI).

For more information, visit [www.ghd.com.au](http://www.ghd.com.au)



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