Clough works with some of the world’s largest companies to engineer, construct, commission and maintain a comprehensive range of facilities for oil and gas, metals and minerals, and infrastructure projects.

Established in 1919, Clough’s services are underpinned by a dedication to project delivery excellence that has spanned almost 100 years. Today the company utilises a workforce of nearly 2,500 people from operating centres across Australia, Asia, Africa, Papua New Guinea, UK, USA and Canada.

Backed by an experienced leadership team, talented people and sophisticated project management systems, Clough is committed to safety, sustainable development and the wellbeing of people, communities and environments.

A Full Asset Lifecycle Delivery model

Clough reduces project risk by providing a complete engineering and project services solution that spans the full asset lifecycle. We engineer to construct and construct to commission, operate and maintain facilities, optimising safety, productivity and cost across every phase of a project. This project execution expertise has been developed through our work on some of the world’s most logistically challenging energy and resources projects, and provides a fresh approach for clients looking for a new way of contracting.
**BUSINESS MODEL:**

**CLOUGH’S OPERATING MODEL DESCRIBES THE SERVICES, MARKETS AND REGIONS IN WHICH CLOUGH OPERATES.**

Clough’s global track record includes almost 100 years in Australia, over 35 years in PNG and Asia, and expands into Europe, Middle East and Africa (EMEA), and North America.

Clough provides services across three key phases of the asset lifecycle - engineering, construction and operations. These functions deliver high value services to blue chip clients operating in the Metals & Minerals, Oil & Gas, and Infrastructure sectors.

## Clough’s Operating Model

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### Oil & Gas
- Upstream, downstream, offshore, onshore, oil, gas and LNG and petrochemicals.

### Metals & Minerals
- Iron ore, coal, precious and other minerals and metals.

### Infrastructure
- Public and private infrastructure including water, power, roads, bridges, pipelines and near shore marine.
Clough is a wholly owned subsidiary of Murray & Roberts (M&R), South Africa’s leading engineering and construction services company. M&R has delivered infrastructure throughout South and Southern Africa for more than 110 years and today employs a global workforce of over 20,000 people.
CLOUGH USES ADVANCED TECHNOLOGY AND NINE DECADES OF ENGINEERING AND CONSTRUCTION EXPERTISE TO DELIVER A FULL SUITE OF ENGINEERING SERVICES ACROSS THE ENTIRE ASSET LIFECYCLE, FROM CONCEPT AND FEASIBILITY STUDIES THROUGH TO DESIGN, DELIVERY, AND LONG TERM PRODUCTION OPERATIONS AND OPTIMISATION.

Our engineers design with a construction mindset to maximise safety, cost, quality and productivity outcomes during the construction and operations phases of a project.

Engineering services are incorporated into three delivery solutions:

- **Consulting Services** cover all asset planning, optimisation and sustainability solutions including concept, feasibility and select studies, basis of design, safety in design, geospatial services, process and plant optimisation and debottlenecking.

- **Multidiscipline engineering** supports asset definition and execution planning requirements and includes FEED and detailed design services across process, mechanical, piping, pipeline instrumentation, electrical, civil and structural engineering disciplines.

- **Engineering and Project Management** covers all engineering requirements during the execution phase of a project including project management, project, field and package engineering, procurement support, cost estimating, constructability analysis and safety reviews.

Our engineering model is enhanced by highly specialised engineering capability through CH•IV, who specialise in front-end LNG design, and Booth Welsh, who act as Clough’s centre of excellence for electrical, control and instrumentation engineering.

### Capabilities include

- Concept Evaluation
- Regulatory Approvals
- Project Feasibility Studies
- Basis of Design
- Front End Engineering Design
- Detailed Design
- Specialised Process Engineering Design
- Engineering, Procurement, Construction and Project Management (EPCM)
- Project Management Consultant (and Services)
- Process Optimisation and Debottlenecking
- Brownfield Engineering
- Electrical Controls and Instrumentation (EC&I)
Key Projects:
- Newmont Boddington Gold EPCM, Australia
- Murray Basin Stage 2 Development, Australia
- INPEX Ichthys LNG Project Integrated Project Management Services, Australia
- BP Tangguh Expansion Project, Indonesia
- Veolia FPSO P63 Sulphate Removal Water Injection, Brazil
- Arrow Bowen Gas Project FEED, Australia
- Freeport LNG Project, USA

ENGINEERING DISCIPLINES
- PROCESS
- MECHANICAL & PIPING
- ELECTRICAL CONTROL & INSTRUMENTATION
- CIVIL & STRUCTURAL
CONSTRUCTION

Capabilities include
- Fully integrated EPC
- Procurement
- Fabrication
- Design and Construct
- Construct-only
- Integrated partnerships and alliances

Key Projects:
- Oyu Tolgoi Civil Works
- Mundaring Weir Outlet Upgrade
- Beenyup Advanced Water Recycling Plant
- FMG Anderson Point Port Facility
- Chevron-operated Gorgon Project (as part of Kellogg Joint Venture Gorgon)
- Santos GLNG Project K128 Upstream Facilities
- CSBP Ammonium Nitrate/Nitric Acid Plant Number 3
- ExxonMobil PNG LNG Project Hides Gas Conditioning Plant
- INPEX Ichthys Project Onshore LNG Facilities Product Loading Jetty

CLOUGH DELIVERS A COMPREHENSIVE RANGE OF CONSTRUCTION SOLUTIONS, FROM FULLY INTEGRATED EPC TO DESIGN AND CONSTRUCT AND CONSTRUCT-ONLY SOLUTIONS. INNOVATIVE SAFETY PROGRAMS, PROPRIETARY DAILY REPORTING SYSTEMS AND DISCIPLINED PROJECT MANAGEMENT ADD VALUE ACROSS THE ENTIRE CONSTRUCTION PHASE.

An unrelenting commitment to safety underpins all construction activities. Our Target Zero safety management program delivers strong safety performance through behavioural based safety training, leading edge major accidents and events risk management programs and a proactive leading indicator focus.

Construction services are supported through disciplined project execution methodologies, sophisticated project reporting systems and nine decades of project management experience. Clough also has 60 years’ experience in joint venture and alliance contracting, resulting in a company culture that understands, embraces and integrates with valued partners to deliver outstanding solutions for clients and stakeholders in complex environments.

We employ highly skilled engineering, construction and project professionals and have access to a large talent pool of construction workers that are trained in our systems and project execution methods.

Leadership positions on every Clough project are filled with highly qualified and experienced construction and project management professionals. Staff incentives are structured based on safety, cost and productivity performance.

Clough has also established Project Management and Construction Management academies, with the aim of ensuring Clough certified project managers and construction managers are recognised as the best in the industry.

- Structural, Mechanical and Piping
- Electrical and Instrumentation
- Complex Civil and Structures
Clough has developed a proprietary daily reporting system to avoid productivity breakdowns on major construction projects. The system works to last planner principles where a 30 day construction plan is locked in, sequencing the critical path activities, day by day, with activity durations expressed in hours. Once the plan is in place, there is no re-baselining. Progress is reported on a daily basis against the original critical path activities. Every activity is compared with the plan to assess performance.

Daily reports are shared with clients to promote an open and collaborative approach to construction. Reports include a detailed summary of critical path progress against plan, including HSE performance, schedule, productive and non-productive time, cost and potential productivity or safety issues that could impact project performance.
SUCCESSFUL COMMISSIONING PLANNING AND EXECUTION CAN REDUCE SCHEDULE AND COST OVERRUN RISKS PRIOR TO THE START-UP OF OPERATIONS.

Clough is Australia’s largest commissioning contractor, offering integrated owner’s commissioning solutions. We bridge the gap between construction and operations to enable safe and orderly asset handover, while minimising the risk of production downtime.

Our commissioning teams plan for commissioning requirements across the entire project lifecycle, from conceptual and detailed design through to procurement, construction, start up and handover. This service identifies and schedules commissioning requirements early, enabling timely detection and intervention on potential schedule delays. We also work with clients to ensure commissioning procedures are developed in line with operating needs.

Through its wholly owned subsidiary e2o, Clough has access to over 2,000 commissioning technicians across Australia and Asia. From its base in Goje, South Korea, the CloughCoens JV delivers commissioning services to projects under construction in Asian fabrication yards.

Commissioning services are supported by sophisticated commissioning systems and an extensive database of blue collar resources that check, inspect and test every operational component of the asset prior to handover.

Capabilities include
- Completion Services
- Hook-Up Services
- Onshore and Offshore Pre-Commissioning and Commissioning
- Supply of Technical Trades
- Hazardous Area Inspection
- Asian Fabrication Yard Support

Key Projects:
- Chevron-operated Wheatstone Project Platform Hook-Up and Commissioning
- Origin, ConocoPhillips & Sinopec Australia Pacific LNG Upstream Commissioning
- Santos Gladstone LNG Project Commissioning Support Services
- Chevron-operated Gorgon Project Commissioning (as part of Kellogg Joint Venture Gorgon)
- INPEX Ichthys LNG Project Offshore CPF and FPSO Hook-up Services
BROWNFIELDS

Clough provides a full range of operations and maintenance solutions to maximise the life and profitability of operating assets.

These solutions include production engineering, operational readiness, asset management, shutdowns and general maintenance planning and execution, and decommissioning.

Clough has a track record of successfully executing major shutdowns, turnarounds and maintenance programs for onshore and offshore oil and gas facilities. Our brownfield project management systems are designed to maximise workforce productivity while minimising facility downtime and cost through effective planning, scheduling, workpacking and job carding.

Our sophisticated competency assessment and training programs utilise a combination of classroom and e-learning systems that provide skilled and qualified operating staff. Clough can also develop operations procedures and operator training and development programs based on our client’s requirements.

Capabilities include:
- Operations Engineering
- Reliability Modeling
- Maintenance Management and Execution
- Supply of Maintenance Trades
- Shutdowns and Turnarounds
- Operational Readiness
- Supply Chain Management
- Competency Assurance and Training
- Sustaining Capital Projects (EPC)
- IR Management
- Decommissioning
- Demolition, Deconstruction and rehabilitation

Key Projects:
- Yara Pilbara Maintenance Services Agreement
- Chevron-operated Wheatstone Project ORM
- ConocoPhillips Bayu-Undan Operations and Maintenance
- ENI Blacktip
- Woodside Offshore Maintenance Services
- Chevron Barrow Island Engineering Services
- Oil Search Kumul Terminal Rejuvenation Project
PURSUIT OF EXCELLENCE VALUES

ZERO HARM
We work sustainably and keep each other safe. Our goal is Zero Harm to our people, the environment and the communities in which we work.

PERFORMANCE
We take accountability for our performance and stretch ourselves to achieve our potential. We collaborate effectively to deliver business success.

PRODUCTIVITY
We strive for superior productivity through excellence in project execution, cost efficiency, planning and discipline. Our aim is to become the industry performance leader in each sector we operate.

CLIENT FOCUS
We understand our clients’ needs and build strong win-win relationships that add real value to our clients’ operations.

INTEGRITY
We act with honesty and integrity. We have the courage to do the right thing.

INNOVATION
We apply innovation to solve complex problems and adapt to the changing needs of our industry. We utilise leading edge technology, processes, systems and ideas to create and maintain a competitive advantage.

PURSUIT OF EXCELLENCE IS THE PHILOSOPHY THAT DRIVES THE CLOUGH CULTURE. IT IS THE CLOUGH WAY.

This philosophy is at the core of our values system, which embodies the areas of Zero Harm, performance, productivity, client focus, integrity and innovation.

These values guide and align with corporate initiatives we have implemented to address industry challenges and help our clients achieve operational excellence.
THROUGH THE TARGET ZERO AND MAP PROGRAMS, CLOUGH DELIVERS INDUSTRY LEADING SAFETY AND ENVIRONMENTAL PERFORMANCE WHILE PROTECTING AND GIVING BACK TO LOCAL COMMUNITIES.

**Safety excellence**

Safety is a value on which we never compromise. While Clough’s safety performance is significantly better than the global contracting industry average, we continue to work towards a workplace that is incident and injury free by driving safety leadership accountability and developing our people.

Our Target Zero safety program takes a full project lifecycle view on safety - from design through to execution and operations. We employ behavioural based safety programs across every phase of a project. Leading indicators play a key role in the measurement of our safety performance.

Clough’s Major Accident Prevention (MAP) brings offshore safety case principles to the onshore construction environment. By analysing activities with potential for major accidents or events, and implementing critical controls, MAP provides lifesaving tools to provide real-time, line of sight management of potential major hazards.

**Environment**

Clough is committed to continuous improvement in environmental performance throughout our global operations.

Over and above the commitments stated in our HSE policy, we actively seek out ways to continually deliver environmental excellence for our clients and the communities in which we operate. Our environmental management processes are embedded into our business delivery processes, championed by our environmental specialists and delivered by our management, engineering and project teams.

**Community**

Clough embeds dedicated community relations professionals on our projects to implement programs that deliver tangible community benefits while achieving project objectives. Community engagement strategies are developed to facilitate community support and involvement, meet local stakeholder needs, minimise disruption and provide local and indigenous employment opportunities.

We understand the importance of giving back to the communities in which we live and work. Through Clough’s dedicated Charitable Trust, The Clough Foundation, Clough supports a range of local community groups to provide sustained benefit to local communities, strengthen stakeholder relationships and encourage employee involvement in community initiatives.
Clough is responding to industry productivity challenges, by implementing programs to develop the people, skills and capabilities to drive high performance across the sectors it supports.

Clough’s ‘Pursuit of Excellence’ philosophy is fundamental to our high performance culture and sits at the core of our value system.

We take a long-term view to people development, to avoid hiring off the street. Talent development and succession programs ensure that we have a strong pipeline of future leaders, from graduates to executives. Our aim is to ensure we fill core positions on our projects with talented Clough employees who understand our project delivery systems and culture.

Recognising that project managers are critical to the success of a project, Clough has invested in a Project Management Academy. This structured program aims to have “Clough certified” project managers recognised as the best in the industry.

We are also investing in a Leadership for High Performance framework, to create an organisational climate that promotes high performance.

Key to delivering strong project performance is a reward and recognition program that drives the right focus on safety, cost and schedule.

**PERFORMANCE**

- A culture committed to the pursuit of excellence
- Talent development and succession programs
- Core leadership positions on projects filled with Clough personnel
- Reward and recognition programs that drive safety, cost and schedule performance
- Project management and construction management training academies
Clough’s Disciplined Project Delivery Model is supported by proprietary ClearView Systems and Workforce Optimisation Models to provide confidence on cost and schedule delivery.

With almost 100 years of construction experience, Clough’s engineers know how to design to construct. Constructability is built into every engineering design we produce through a process of ‘front-end loading’. This involves spending more time in the early phases of design to optimise construction. This approach improves productivity during the execution phases, significantly reducing construction costs.

Clough implements a lean workforce model, conducting the majority of engineering work out of our global network of operating centres. This minimises the number of permanent personnel mobilised to site and more efficiently manages work demand, resulting in significant cost savings.

Clough’s proprietary software reports project progress daily against a detailed look-ahead plan. This enables our project management team to intervene early on issues that might impact overall project cost or schedule, and helps project and construction managers to continuously improve performance.
BUILDING STRONG WIN-WIN RELATIONSHIPS.

At Clough we are committed to developing long-term, mutually beneficial relationships with our clients that add real value to their operations. When working with Clough our clients can expect:

- A dedicated client relationship manager that will work through project issues, from design through to construction and operations
- Value Improvement workshops that leverage Clough's global network of engineering expertise to bring together the top engineering and asset management minds. This includes a detailed analysis of current maintenance performance and the sharing of global best practice to improve cost and operational efficiency
- A focus on providing contracting models that deliver better client and contractor alignment
- A strong risk management approach and a focus on driving efficiency across every phase of a project
- Requests for regular feedback, which will be used in lessons learnt to improve our services.

Where appropriate Clough is willing to put ‘skin in the game’ by taking on risk or through project investment, to align objectives.
Clough applies innovation to adapt to the changing needs of the industry by learning from our experience on some of the world’s largest and most logistically challenging projects.

Clough uses the latest engineering technology to maximise the value from engineering deliverables across the asset lifecycle. Our engineers have significant experience and capability in the use of Intergraph’s SmartPlant Enterprise suite while our systems, procedures and workflows enable effective and efficient project management, cost control and concurrent, multi-discipline design. By utilising 3D modelling and intelligent design systems (Smart 3D), we maximise the benefits of data integration throughout the engineering, fabrication and construction phases of our projects.

Our global network of engineering centres use Cloud based technology to enable 24/7 engineering support for our clients.

Our multi-disciplined engineering design services adopt a full life cycle ‘Total Installed Cost’ approach to design and project implementation, to enhance project value without compromising safety, quality or schedule.

We are also recognised as a pioneer in the development of integrated project management systems that take a full asset lifecycle approach to project execution.

Clough is harnessing new mobile platforms and tools to drive information into our geographically dispersed operations, and has invested significantly in data, systems and technologies. The result is an ability to sustain field variations to less than two per cent.
CLOUGH’S MANAGEMENT SYSTEM CONTAINS THE POLICIES, STANDARDS, PROCESSES AND TOOLS TO ENSURE WE EXECUTE OUR WORK IN CONSISTENT AND SYSTEMATIC WAY.

This system provides the knowledge base that controls individual deviations, locks in lessons learnt and allows Clough to continuously improve our execution performance. The system is supported by a strong governance program and Code of Conduct, which prescribes standards of honesty, integrity, fairness and equity in all aspects of working for Clough.

Training and compliance with Clough’s Management System and the Code of Conduct is mandatory for every Clough employee.

Clough’s Management System

- Standardised and systematic work execution
- A Management System that controls deviations and locks in lessons learnt
- Focus on continuous improvement
- Mandatory Code of Conduct training
**TRACK RECORD**

- **99 YEARS IN AUSTRALIA**
  Established in 1919

- **55 YEARS OF WATER DESIGN AND CONSTRUCTION**
  1963 Ord River Diversion Dam awarded

- **52 YEARS IN OIL & GAS**
  1966 Barrow Island Oil Field Development awarded

- **35 YEARS IN PNG**
  1983 Kutubu Project awarded

- **61 YEARS OF MAJOR ENGINEERING & CONSTRUCTION PROJECTS**
  1957 Narrows Bridge Project awarded

- **54 YEARS OF JETTY DESIGN AND CONSTRUCTION**
  1964 Hamersley Iron Parker Point load out jetty awarded

- **38 YEARS IN METALS & MINERALS**
  1980 Constructed coal stackers for Coal and Allied

- **33 YEARS IN LNG**
  1985 built Australia’s first LNG Jetty

- **14 YEARS IN OPERATIONS & MAINTENANCE**
  Bayu-Undan project awarded 2004