Operational Performance
Hatch brings a unique blend of process expertise, operational understanding and project delivery excellence to our client’s most difficult problems.
Improving operational performance

Changing market conditions, an uncertain global economy, and shareholder demands are driving organisations to achieve more with their existing assets. For companies in the metals, energy, and infrastructure sectors, this means a continual focus on cost, competitiveness, profitability, and the sustainability of their asset portfolio.

At Hatch, we understand the operational challenges facing businesses in today’s market and that every industry plant has its own unique challenges. We are known globally for our capabilities in this area – it is where we began more than five decades ago, and where we continue to lead the industry today.

Hatch has combined its core operational performance strengths into a cohesive, flexible offering that positively impacts our clients’ business, delivers key business outcomes and achieves a step change in operational performance. Our outcome-based approach spans the entire business lifecycle – from concept to closure.

This is delivered through four key services streams:

- Operational Readiness – bring operations and maintenance thinking into projects to assist with the stable transition to operations and a safe, rapid and predictable ramp up
- Performance Enhancement – innovative and proven frameworks, tools and methodologies to get the most out of processes, equipment and people
- Asset Management – optimise the performance, reliability and availability of assets
- Sustaining Projects and Engineering – support the effective use of funds in the management and execution of sustaining capital portfolios.

At Hatch, we have helped our clients develop technically innovative, sustainable and cost effective solutions across the full asset lifecycle for over 50 years. We contribute to our clients business by providing world class services and expertise to their operations. Our ability to understand the complexities of operating businesses and deliver specialist solutions is backed by the capability of an 11,000-strong global resource pool.

Our global experience is delivered through local action-oriented teams who work side-by-side with our clients to achieve measurable results. We do this by bringing the best of what Hatch has to offer to client operations – a unique blend of process expertise, operational understanding and project delivery excellence.
Our services focus on improving the performance of your assets to achieve your business objectives.

Operational readiness
Hatch has 20 years experience in the delivery of Operational Readiness (OR) for clients in mining, metals, energy and infrastructure. Working as an integrated partner, with a proven framework, Hatch has the capability to deliver OR strategies and plans from the study phase through to the delivery of OR in the execution phase.

The Hatch Operational Readiness model focuses on establishing capable people and processes underpinned by capable systems to ensure your project’s value metrics through cost effective and rapid ramp up into stable and reliable operation.

Performance enhancement
As organisations seek to gain a sustainable advantage, operational performance has come into focus and the demand to optimise processes, costs and supply chains has never been greater.

We bring our capabilities in operations management and process improvement, to help companies optimise their entire value chain, finding ways to reduce waste, lower costs and increase value using industry standard methodologies and deep domain engineering expertise.

We deliver lasting improvement programmes across our client’s businesses working with them to make the most of their resources, securing delivery of high quality products and services that meet the needs of customers and stakeholders.
Hatch specialises in the improvement and optimisation of complex assets and solving the metals, infrastructure and energy sectors’ most challenging problems.

**Asset management**
Effective Asset Management enables an organisation to realise their strategic goals through the optimal operation of their assets. It is an organisation wide approach that draws from both business and financial management and also technical, engineering, operations and maintenance disciplines.

Asset Management is not about just managing assets for their own sake. Asset Management is about deriving value from the assets in a structured and predictable way. Optimal, risk-based decision-making is a vital element underpinning successful Asset Management. This involves finding the right compromise between competing interests, such as asset utilisation/ performance versus asset care (maintenance), capital investment cost versus operating expenditures, or short-term benefits versus long-term sustainability.

The goal in each case is to determine the optimal combination, yielding the best net value, including any risk exposures, indirect impacts and long-term effects.

**Sustaining projects and engineering**
Our Sustaining Projects and Engineering service draws on the experience and capabilities of more than 2000 people delivering 3600 sustaining capital projects worth approximately US$5 billion across 100 sites globally.

Hatch’s preferred approach is to establish integrated teams with our customers focused on safely achieving business objectives whilst reducing costs, adding value and improving asset performance.

Our success in long term relationships is based on a thorough baseline assessment, global resource pool, an open and communicative culture and our commitment to flexibility and continuous improvement. This is all underpinned by the clear alignment of our objectives with the client.
BMA Coal Program
Operational Readiness
BHP Billiton, Australia
Since 2010, Hatch has worked side-by-side with BHP Billiton to develop and deliver a standardised operational readiness (OR) framework across a AU$10 billion portfolio of projects. Hatch was able to deliver an integrated OR framework based on a deep understanding of BHP Billiton’s operations and the projects being undertaken which range from coal mine expansions through to port upgrades.

In addition to delivering the full OR plan, Hatch successfully executed packages of work in maintenance, operations, training, supply and HSEC areas. During the feasibility studies, OR plans, budgets and schedules were developed. As the projects moved into execution this focus changed to aspects of OR such as project management support, asset management, equipment strategies/plans, isolation procedures and spares and cataloguing.

Tintaya Antapaccay – Operational Readiness & Commissioning Strategy
Glencore Xstrata, Peru
Located in the Cuzco region of Peru, Tintaya undertook an expansion project to increase its copper production by 60 percent which included the new Antapaccay deposit and the construction of a modern concentrator plant.

Hatch was engaged to undertake a gap review and execution plan for the commissioning of the 70 ktpd concentrator plant. This included a review of all critical project and operational interfaces including handover responsibilities and documentation, along with an assessment of the readiness of operations and maintenance teams to support commissioning and ramp-up activities. From this, commissioning sequences and critical path activities were identified and detailed plans developed for commissioning activities, pre-commissioning, process control support and commissioning execution. The project resulted in a fast-track ramp-up with design capacity achieved in three months.
Hatch works closely with project teams and operators to ensure new and graded plants are operationally ready for start-up.
Renewable Energy Asset Assessment
Brookfield Renewable Energy Partners, North & South America

Brookfield is one of the world’s largest publicly-traded power platforms and engaged Hatch to undertake a complete independent engineer’s assessment of 131 renewable power generating facilities located along 65 different river systems in three different countries.

Hatch successfully completed the assessments within the compressed schedule by using our global resources and state-of-the-art data collection, document management and project management systems. The power platform was successfully launched and deemed a success by Brookfield.

Today, Hatch provides dam safety and independent engineering assessments for most of Brookfield’s assets in Ontario, and assists Brookfield in the identification and assessment of water power assets throughout South America.

Sydney Water Asset Maintenance
Sydney Water, Australia

Sydney Water is the largest water facility manager in Australia, overseeing 500 billion litres of water, wastewater, recycled water, stormwater for 1.7 million homes. Maintaining these assets, requires the implementation of an intelligent asset management strategy and plan to reduce downtime, failures, unplanned budget outlay for repairs and lost supply to end users.

Since 2009, Sydney Water and Hatch have developed a trusted partnership in which Hatch has provided long-term condition monitoring services and cost effective asset management strategies to improve asset performance and operation reliability. The work is conducted by on the ground personnel, condition monitoring specialists and reliability engineers working closely with the Sydney Water team. Conducting over 10,000 inspections across 90 sites each year, the Hatch team has been instrumental to the development and implementation of Sydney Water’s long term asset management improvement plan.
Brookfield renewable energy wind farm in Canada
Antamina Asset Optimisation & Debottlenecking
Glencore Xstrata, Peru

Located at the Peruvian Andes, Antamina is a mining complex that produces copper, zinc and molybdenum ore concentrates. Hatch was engaged to identify the process bottlenecks in the existing plant and to determine the impact through varying product blending and yield. Hatch proved that through debottlenecking, the plant’s capacity could be increased from 130 to 145 ktpd and program to achieve this could be implemented by plant operations.

Hatch undertook dynamic simulation and detailed assessment studies of the plant’s equipment and utilisation to determine if the proposed system was capable of the additional throughput. From this options for alleviating the bottlenecks were identified. The impact on throughput by using alternate ore concentrates and yields was also determined.

An improvement program was identified to debottleneck the plant to achieve 145 ktpd. The study led to further changes in the operating strategy for the stockpile, buffers and batching strategy for Cu/Zn and the plant is now processing ore at 149ktpd.

Boddington Lifecycle Shutdown
Newmont Gold, Australia

With volatile movements in gold pricing, Newmont established an activity to identify large opportunities to improve their operations. Hatch was engaged to review the Boddington Gold Mine’s fixed plant shutdowns and quickly identified bottom line improvements of AU$100 million. This was achieved through shutdown optimisation including an additional 3 mtpa of ore processed and reduced shut expenditure.

The AU$4 billion plant carried forward problems post commissioning and reliability issues forcing the fixed plants into a pattern that required many shutdowns. A future desired shutdown pattern was mapped which contained larger but fewer shutdowns allowing more thorough repairs and improved utilisation. In order to force the equipment into this new pattern different approaches were required including quick change of equipment such as pumps, modularisation of repairs, repair rather than patch, and improving the quality of work packages to move more of the work to fixed price packages.
Energy Management Studies
Confidential Client, South Africa

A prominent client in the platinum mining and refining industry was experiencing high energy usage for their two mines, five concentrators and two refining units. Hatch was engaged to identify high-consuming but low-performing energy systems and identify improvement opportunities to assist them to better manage their energy usage and reduce consumption. Hatch used its innovative performance, operation, equipment, and technology (POET) framework which included a number of interactive workshops and brainstorming sessions to identify improvement opportunities, constraints preventing improvement and priority action plans that focus effort on implementing the opportunities that have the greatest impact on energy savings with the ability to deliver fast results. A detailed plan was developed for a rollout plan across the operating facilities.

Capacity & Throughput Optimisation Study
Confidential Client, Australia

Hatch was engaged by a local coal miner to quantify the impact of various berth and port design options and operational rules on the capacity and operability of the port as a whole. The results of the study illustrated the importance of using dynamic simulation models to accurately define capacity, realistically increase throughput, and proactively translate objectives into design and operating requirements. This required a fundamental understanding and consideration of the drivers that impact capacity, cost, and value across the entire transportation chain. The study showed that port congestion was not a strong constraint to port performance and improvements aimed at relieving port congestion did not improve performance significantly. This allowed the client to focus on improvements to reduce the time spent at the berths in order to deliver a direct positive impact on the export capacity.

Optimum dollar-per-tonnage is achieved through whole system thinking and deep technical expertise.
Sustaining projects and engineering

**US Steel North American Sustaining Capital Programme**  
**US Steel, USA**

Hatch helped US Steel deliver a value-driven US$850 million programme of small to medium projects that in 2012 reduced the average EPCM cost and achieved zero LTIs for two million contractor hours. Hatch had been providing specialist technical support to US Steel for many years. In 2009 Hatch began providing outsourced technical support to seven North American operations. This included a small site-based team at each facility supported by a global team for the EPCM delivery of a portfolio of sustaining capital projects. The alliance contains a detailed value assessment scorecard by which projects are scored on KPIs such as safety, schedule, and cost. In 2012, the average score of 99.9 percent indicates the high performance being set and significant value realised by US Steel. As such Hatch assumed responsibility in March 2012 for the eight remaining U.S. Steel North American plants capital projects portfolios.

**Rio Tinto Fer et Titane**  
**Rio Tinto, Canada**

For more than 40 years Hatch has worked side-by-side with QIT to modernise the plant and support the operation of an efficient, low-cost and globally-competitive asset. Throughout this period, Hatch has continuously delivered a unique combination of process expertise, capital projects, sustaining capital support and operational efficiency projects. This includes working as an integrated team with QIT to provide engineering, operations and maintenance support and a long-term site team delivering small to medium sustaining capital projects.

This effort is supported by experienced process and speciality engineering projects designed to increase productivity and reduce maintenance costs. Over the years, Hatch has also been an integral part of a number of expansion programs that contributed to a doubling of the plant’s capacity and cementing its place as one of the world’s leading producers of TiO2.
US Steel Clairton Steel Works

Rio Tinto Fer et Titane

Operational Performance 11
Alcoa Sustaining Capital  
Alcoa, Global

Since 1997 Hatch has worked side-by-side with Alcoa to deliver an outsourced technical support service that has continuously adapted to meet their changing business needs. Hatch managed the total delivery process for engineering capital projects and general engineering expertise for Alcoa’s Western Australia operations. The assignment was later expanded to include Alcoa’s Atlantic Alumina Operations, North American Smelter Operations, and East Coast Australia Smelters and Rolling Mills. At its peak, the work involved more than 600 engineers across 17 sites globally, 1,000 assignments, and capital-project expenditures of up to US$400 million per year.

Sasol Gasification Project  
Sasol Technology, South Africa

Hatch was appointed as one of the preferred engineering firms for the Sasol Fixed Bed, Dry Bottom (FBDB) Gasification Technology work, with the initial agreement for 10 years. Sasol is the world’s foremost producer of transport fuels from coal and other chemicals, using the Sasol® FBDB™ Gasification Technology together with its in-house-developed Fischer-Tropsch synthesis technology.

Hatch is assisting Sasol’s existing coal-based gas production operations with continuous improvement and optimisation, and is responsible for the design of proprietary equipment and specialised systems for coal-gasification units for new gasification plants currently under consideration by Sasol.
Tailings and Water Improvement Projects
Codelco, Chile

For more than 10 years Hatch has worked closely with Codelco to support the maintenance and improvement of their tailings and water management assets in Chile. Projects range from improvements to dams and tailings infrastructure including tailings deposit and draining systems, sand and slimes distribution systems, intake and evacuation towers, and various diversion tunnel upgrades and repairs. The region is highly prone to seismic activity and there are significant risks associated with potential earthquake damage to both tailings and water storage facilities. A number of projects have also been undertaken to mitigate the risks associated with dam collapses including spillways, transition channels, evacuating channels and energy dissipating concrete ski jumps.
Hatch is an employee-owned, multidisciplinary professional services firm that delivers a comprehensive array of technical and strategic services, including consulting, information technology, engineering, process development, and project and construction management to the Mining, Metallurgical, Energy, and Infrastructure sectors.

Hatch has served clients for over 80 years and has project experience in more than 150 countries around the world.

With 11,000 people in over 65 offices, the firm has more than $35 billion in projects currently under management.

Contacts

Jeanne Els
Global
+61 7 3166 7612
jels@hatch.com.au

Chris Biel
Central & Western
North America
+1 905 403 3185
cbiel@hatch.ca

Ivan Lopez
South America
+51 1 7144002
ilopez@hatch.cl

Joe Petrolito
Eastern North America
+1 514 864 6202
jpetrolito@hatch.ca

Gerhard Prinsloo
South Africa
+27 11 239 5459
gprinsloo@hatch.co.za

Mark Jordan
Australia/Asia
+61 7 3166 7306
mjordan@hatch.com.au

This publication contains information in summary form, current as of the date of publication, and is intended for general guidance only. We make no guarantees, representations or warranties of any kind, expressed or implied, regarding the information including, but not limited to, warranties of content, accuracy and reliability. Any interested party should undertake their own inquiries as to the accuracy of the information. Hatch Ltd. excludes unequivocally all inferred or implied terms, conditions and warranties arising out of this document and excludes all liability for loss and damages arising therefrom. This publication is the copyrighted property of Hatch Ltd © 2014. All rights reserved.

20130132