



HATCH

Platinum Group Metals



+ Who We Are



+ Our Company



65
offices



\$75B+
in active projects



150+
countries



10,000+
employees



7+ decades
of experience

100% proudly employee owned

Key differentiation



+ World map

Office locations

Around the globe

Canada

Baie-Comeau
Calgary
Edmonton
Fredericton
Halifax
Kitimat
Markham
Mississauga *
Montréal *
Niagara Falls
Regina
Saguenay
Saint John
Saskatoon
Sorel-Tracy
St. John's
Sudbury
Sydney
Thunder Bay
Trail
Trois-Rivières
Vancouver
Winnipeg

USA

Ambler
Amherst
Austin
Atlanta
Boston
Brooklyn
Chicago
Columbus
Dallas
Denver
Fort Lauderdale
Houston
Los Angeles
Minneapolis
Newark
Oakland
Pittsburgh *
Portland
Rochester
Salt Lake City
Seattle
Tampa
Washington
White River
Junction

Australia/Asia

Beijing
Shanghai
Jakarta
Adelaide
Brisbane *
Melbourne
Newcastle
Perth
Wollongong
Sydney

South America
Belo Horizonte
Calama
Santiago *
Medellin
Bogota
Lima

Africa/India/ME

Cape Town
Durban
East London
Johannesburg *
Muscat
Jubail
Abu Dhabi
Gurugram

Europe
London
Manchester
Düren
Essen
Katowice

*Global Delivery Center (GDC)

Our Vision

We are passionately committed to the pursuit of a better world through ***positive change***.

Our Values

We believe in ***exceptional ideas*** delivered with ***exceptional service***.

Our Mission

Together we create unprecedented outcomes for our clients by partnering with them to develop better ideas.

Our exceptional, diverse teams combine vast engineering and business knowledge, applying them to the ***world's toughest challenges***.

We build practical solutions that are ***safe, innovative, and sustainable***.

+ Our Manifesto

OUR VISION

We are passionately committed to the pursuit of a **better world** through **POSITIVE CHANGE**

OUR MISSION

TOGETHER we create unprecedented outcomes for our clients by **partnering with them** to develop **better ideas.**



Our **exceptional, diverse teams** combine vast engineering and business knowledge, applying them to the **world's toughest challenges.**



We build practical **SOLUTIONS** that are **SAFE**, **INNOVATIVE**, & sustainable.

OUR VALUES

We believe in exceptional ideas delivered with exceptional service.

DOING OUR 
homework

INNOVATING
all that we do

Engaging great people who make a **difference** 

Acting **like OWNERS** 


Encouraging a **flat, connected organization**

Achieving **NO** harm 

ENSURING **cost** effective, efficient **delivery**
 Thinking globally; acting locally

Being unconditionally **HONEST** 

 **nurturing**
long-term relationships

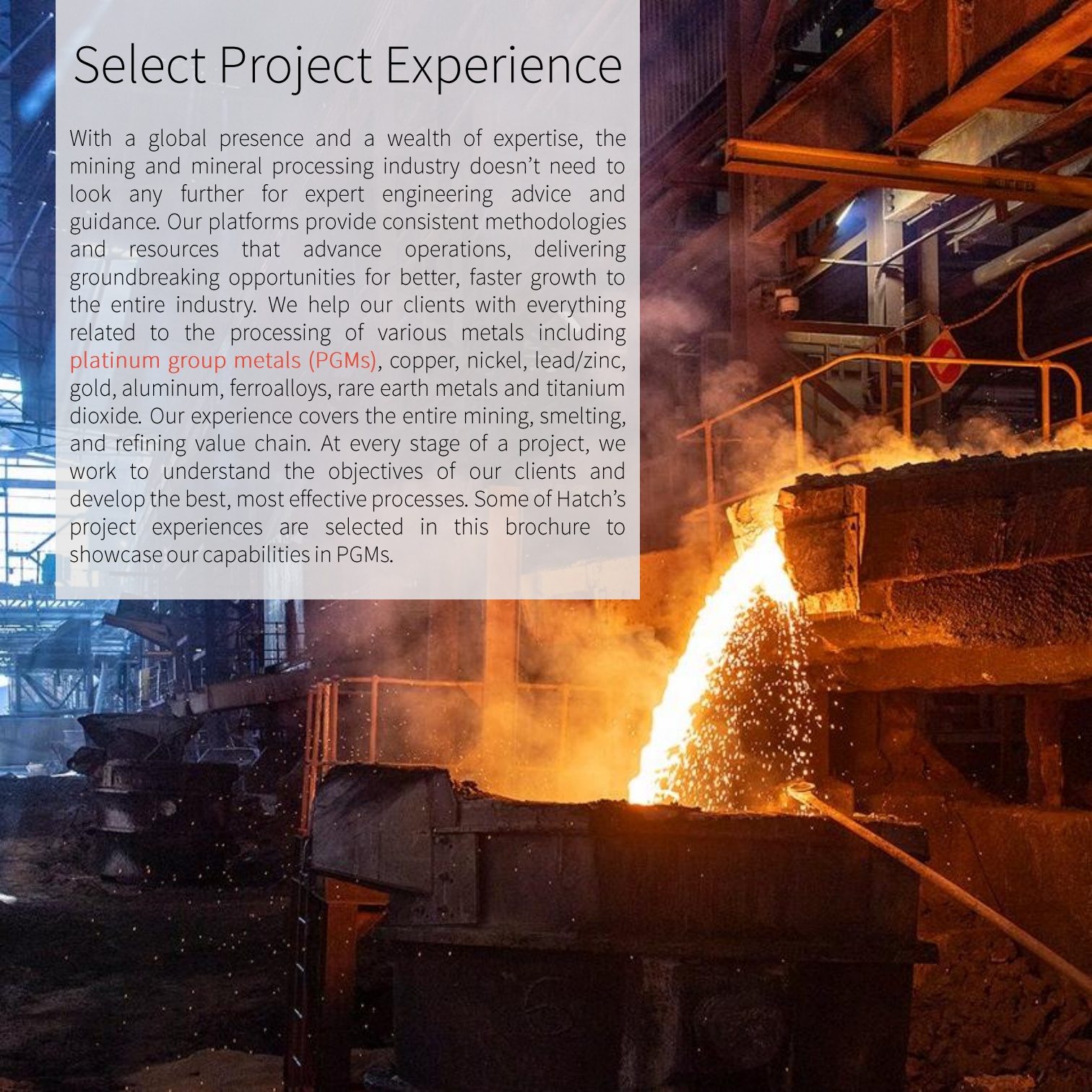
Living our  **commitments** with **integrity**

A worker in a blue safety suit and yellow helmet is working on a large industrial machine in a dark environment. The worker is positioned on the right side of the frame, facing the machine. The machine has various pipes and components. The background is dark and filled with industrial structures.

+ Project Delivery
Excellence in PGMs

Select Project Experience

With a global presence and a wealth of expertise, the mining and mineral processing industry doesn't need to look any further for expert engineering advice and guidance. Our platforms provide consistent methodologies and resources that advance operations, delivering groundbreaking opportunities for better, faster growth to the entire industry. We help our clients with everything related to the processing of various metals including **platinum group metals (PGMs)**, copper, nickel, lead/zinc, gold, aluminum, ferroalloys, rare earth metals and titanium dioxide. Our experience covers the entire mining, smelting, and refining value chain. At every stage of a project, we work to understand the objectives of our clients and develop the best, most effective processes. Some of Hatch's project experiences are selected in this brochure to showcase our capabilities in PGMs.





Valterra Platinum Polokwane Smelter SO₂ Abatement

Hatch and Valtterra (formally Anglo Platinum) successfully commissioned the SO₂ abatement facility designed for the Polokwane Smelter. Hatch provided full EPCM services for all phases of the project that allowed the continued operation of the largest PGM furnace in the world while meeting environmental emissions standards. This environmental compliance project is based on a novel flowsheet, with Topsøe's Wet-gas Sulphuric Acid (WSA) technology selected for the acid plant to meet the emission limits while minimising operating cost. The schedule had to accommodate the brownfield nature of the project to ensure successful completion with minimal disruption to operations. A new off-gas system was built in an operating environment and changeover from the old system was completed with no impact to operation or loss of production. To meet some of the associated challenges, Hatch implemented pre-assembly and modularisation techniques.





Valterra Tumela 5 Shaft

The Tumela 5 Shaft project was a FEL2 brownfields expansion and replacement study aimed at addressing declining production from the Tumela Upper Mine and accessing deeper UG2 and Merensky reserves to sustain output at 4 Mtpa. The project involved integrating new surface infrastructure with existing underground workings via a vertical shaft and incline cluster system, designed to accelerate production and extend the life of mine beyond 2050.

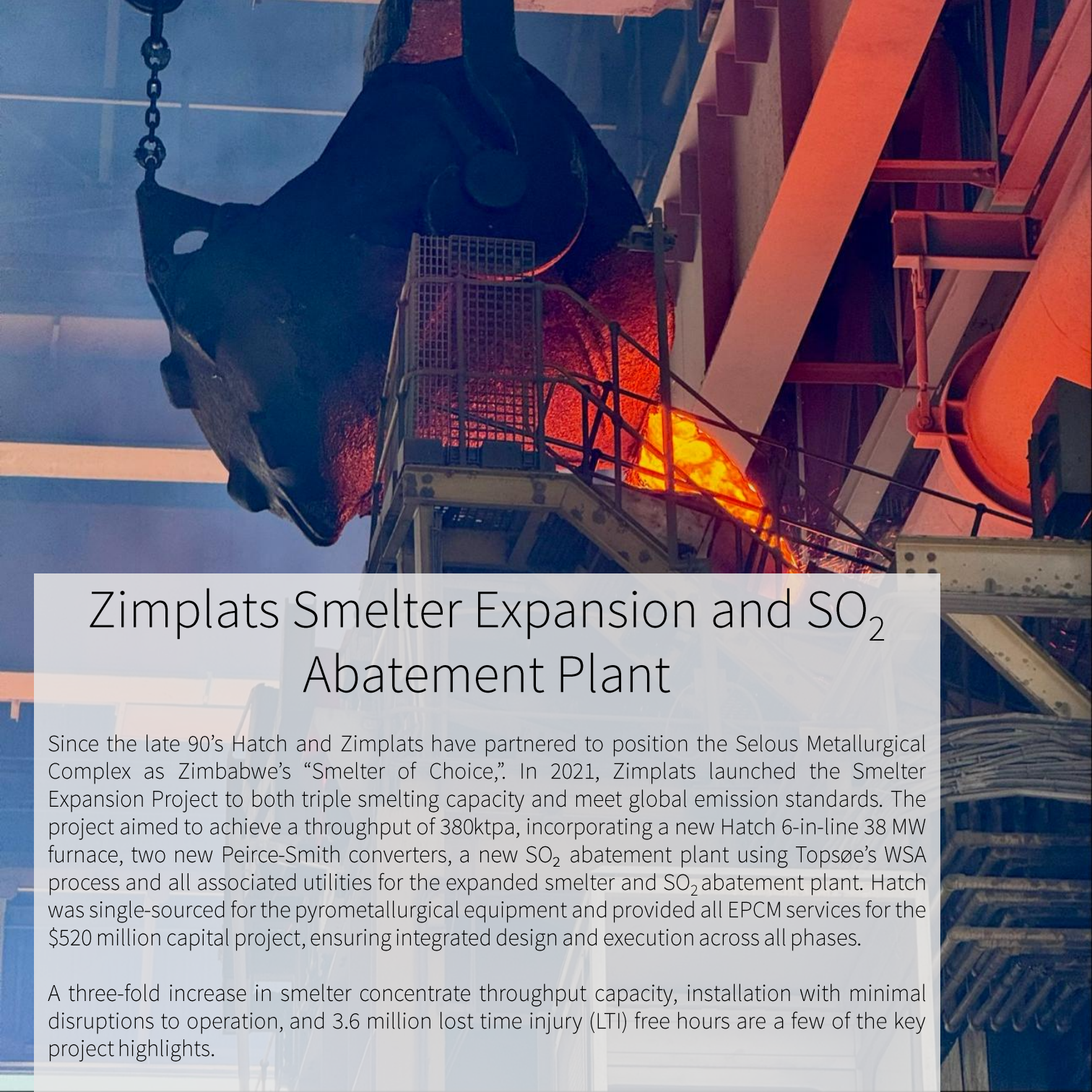
Despite a positive IRR and NPV, the project was ultimately not pursued due to high capital costs. The scope included detailed design, sequencing of underground development, and evaluation of various shaft sinking technologies.¹

An aerial photograph of an industrial construction site. In the foreground, there are two large, rectangular concrete structures under construction, with some internal framework visible. To the left, there are several large blue storage tanks and a green-roofed building. The ground is a mix of dirt, gravel, and some vegetation. In the background, there are more industrial structures and a yellow crane. The overall scene depicts a complex industrial expansion project.

Valterra Waterval UG2 Concentrator Expansion

Hatch provided EPCM services for a complex Brownfields expansion project of the Waterval platinum concentrator. The project involved significant upgrades to nearly every aspect of the concentrator. Modifications were made to the crushing, milling, and flotation operations.

The plant was kept operational during the expansion, which required a phased implementation approach and close coordination between project and operation teams. The expansion served to increase the overall throughput from 360 to 620 ktpm. Valterra lauded Hatch for our “exemplary” performance and thanked Hatch for their “commitment, diligence, and leadership during a difficult and complex commissioning process.”



Zimplats Smelter Expansion and SO₂ Abatement Plant

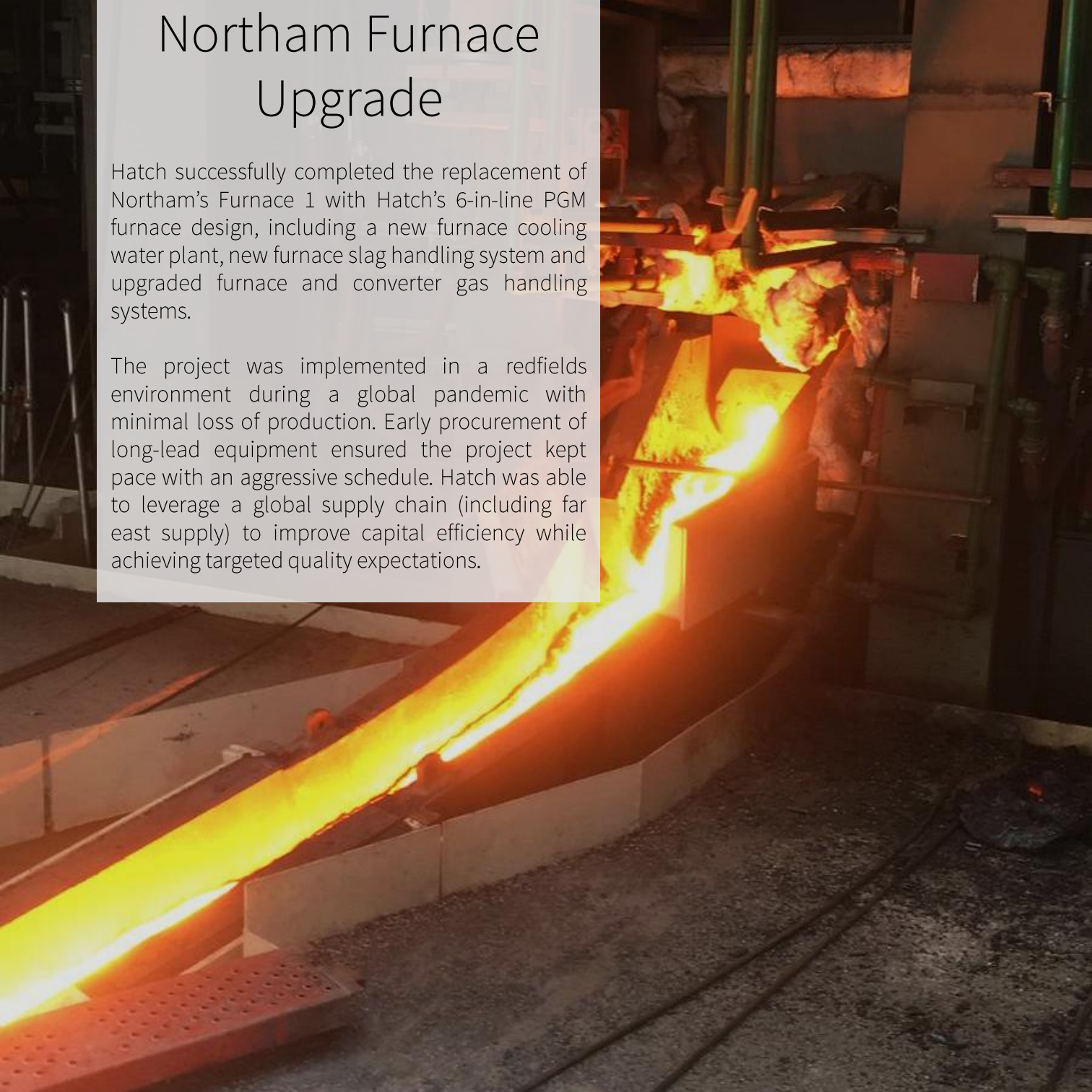
Since the late 90's Hatch and Zimplats have partnered to position the Selous Metallurgical Complex as Zimbabwe's "Smelter of Choice." In 2021, Zimplats launched the Smelter Expansion Project to both triple smelting capacity and meet global emission standards. The project aimed to achieve a throughput of 380ktpa, incorporating a new Hatch 6-in-line 38 MW furnace, two new Peirce-Smith converters, a new SO₂ abatement plant using Topsøe's WSA process and all associated utilities for the expanded smelter and SO₂ abatement plant. Hatch was single-sourced for the pyrometallurgical equipment and provided all EPCM services for the \$520 million capital project, ensuring integrated design and execution across all phases.

A three-fold increase in smelter concentrate throughput capacity, installation with minimal disruptions to operation, and 3.6 million lost time injury (LTI) free hours are a few of the key project highlights.

Northam Furnace Upgrade

Hatch successfully completed the replacement of Northam's Furnace 1 with Hatch's 6-in-line PGM furnace design, including a new furnace cooling water plant, new furnace slag handling system and upgraded furnace and converter gas handling systems.

The project was implemented in a redfields environment during a global pandemic with minimal loss of production. Early procurement of long-lead equipment ensured the project kept pace with an aggressive schedule. Hatch was able to leverage a global supply chain (including far east supply) to improve capital efficiency while achieving targeted quality expectations.





Valterra Platinum ACP-A Rebuild

Valterra Platinum, the world's leading primary producer of platinum, engaged Hatch through a sole-source agreement to deliver full EPCM services for the emergency rebuild of their ACP-A converting unit.

As part of the fast-tracked execution schedule, Hatch conducted a comprehensive root-cause analysis to inform the rebuild strategy.

In parallel, Hatch advanced engineering design and procurement activities, incorporating critical input from the operational site team to ensure alignment with plant requirements.

Hatch facilitated global sourcing and coordinated expedited delivery, enabling rapid mobilisation and execution in support of Valterra's operational continuity.



Impala Platinum Furnace No. 5

In 1989, Hatch was introduced to Gencor and Impala Platinum, who were impressed by Hatch's advancements in electric furnace technology. Following a site visit to Falconbridge in Sudbury, Hatch was awarded an engineering study for a new No. 5 furnace to expand Impala's smelter in Rustenburg. A multidisciplinary team from Hatch developed a pioneering 40 MW furnace design, exceeding the combined output of the existing four furnaces.

Innovations included water-cooled sidewalls, advanced tap block cooling, and custom electrode systems. The project was completed on time and on budget within 16 months. Post-commissioning, No.5 furnace delivered exceptional performance: triple the throughput of its predecessor, 25% lower power consumption per tonne, and 35% reduced electrode wear. This project marked a turning point for Hatch, revolutionizing platinum smelting and leading to further collaborations with Sibanye, Valterra Platinum, and Hartley.

Sibanye Stillwater Furnace No.1 Detail Design

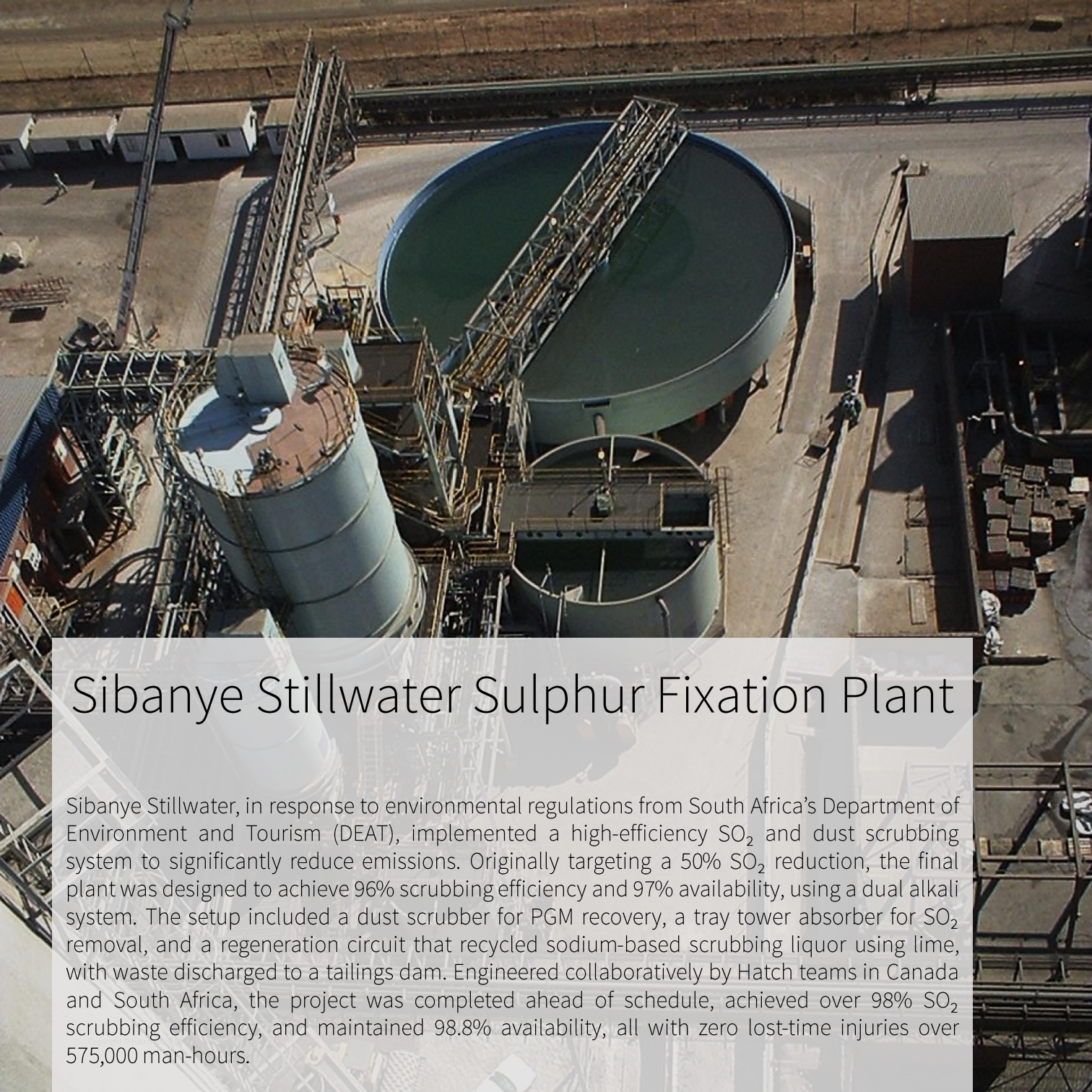
Sibanye Stillwater (then Lonmin) gave Hatch Africa the EPCM assignment to build a new Brownfield PGM smelter using one Hatch-designed circular furnace equipped with waffle cooling of the furnace sidewalls below the slag-line. The furnace design featured technology suited for high-chrome platinum concentrates. The project included full design, procurement, and construction management, and was completed with 1.6 million man-hours on site without a single lost-time injury.



The background image shows a close-up of an industrial structure. A prominent feature is a large, bright red, textured wall or panel. To the left, there are yellow structural elements, possibly part of a crane or lifting mechanism. The overall scene suggests a heavy industrial environment, likely a granulation facility.

Sibanye Stillwater Dry Granulation Facility

The dry granulation project was delivered by Hatch through a full EPCM approach with a CAPEX of ZAR 120 million. This project showcases a fast-tracked, high impact solution replacing the existing water granulation plant. The project features innovative safety enhancements, such as steam explosion mitigation, granulated material cooling sprays, a scull breaker on the ladle tilter, and reduced dust carry-over via improved ventilation. Utilising pre-cast foundations and modular components, the plant achieved rapid construction and commissioning, setting a benchmark for efficient and safe granulation in the PGM industry.



Sibanye Stillwater Sulphur Fixation Plant

Sibanye Stillwater, in response to environmental regulations from South Africa's Department of Environment and Tourism (DEAT), implemented a high-efficiency SO_2 and dust scrubbing system to significantly reduce emissions. Originally targeting a 50% SO_2 reduction, the final plant was designed to achieve 96% scrubbing efficiency and 97% availability, using a dual alkali system. The setup included a dust scrubber for PGM recovery, a tray tower absorber for SO_2 removal, and a regeneration circuit that recycled sodium-based scrubbing liquor using lime, with waste discharged to a tailings dam. Engineered collaboratively by Hatch teams in Canada and South Africa, the project was completed ahead of schedule, achieved over 98% SO_2 scrubbing efficiency, and maintained 98.8% availability, all with zero lost-time injuries over 575,000 man-hours.

Valterra Platinum Rustenburg BMR Expansion

This expansion project is an example of Hatch leveraging its international hydrometallurgical expertise to facilitate the refinery complex expansion.

A world-first fully automated nickel electrowinning tankhouse, which incorporates state-of-the-art mist elimination technology and complete automation of the cathode harvesting process, was implemented by this project.

The project was a multi-billion Rand expansion with complete commissioning and handover in 29 months.





Zimplats BMR Refinement

The Zimplats Selous Base Metal Refinery (BMR) was refurbished by Hatch, using streamlined, simplified flowsheets, to treat 32tpd converter matte.

The key challenges faced included the brownfield nature of the site which was under care since 1999, assessing equipment conditions for reuse, replacement, refurbishment, or new acquisition, simplifying complex piping using on-site 3D modelling to assess required modifications, as well as the fast-tracked process schedule.

By collaborating with our High-Pressure Metallurgy (HPM) specialists, extensive bench-scale and continuous pilot testing, as designed and overseen by Hatch, was completed – and ensured a smooth and risk managed execution to successfully deliver the project.



Seneca PMR

Hydrometallurgical Procedure Support and Commissioning

Hatch provided technical hydrometallurgical support and commissioning services for the new Precious Metal Refinery.

Major project outcomes included the successful use of equipment and standard operating procedures during commissioning activities and standard operation, as well as the evolution of Hatch's involvement from hydrometallurgical support on procedures to hydrometallurgical support on PMR commissioning.



+ Core Services



Mining

Hatch has over 65 years of experience in the mining sphere and provides a wide range of services to maximize mining operational efficiency and profitability. One of our core strengths is our ability to work closely with our clients, providing customized solutions to meet their specific requirements. We pride ourselves on our collaborative approach, which ensures that we understand your goals and priorities, and that we work together to achieve them.

Enhancing
Mining
Safety



Optimization
and Design of
Open Pit and
Underground
Mines



Planning and
Scheduling For
Volatilities



Innovation
that
Transforms



Effective
Infrastructure
Networks

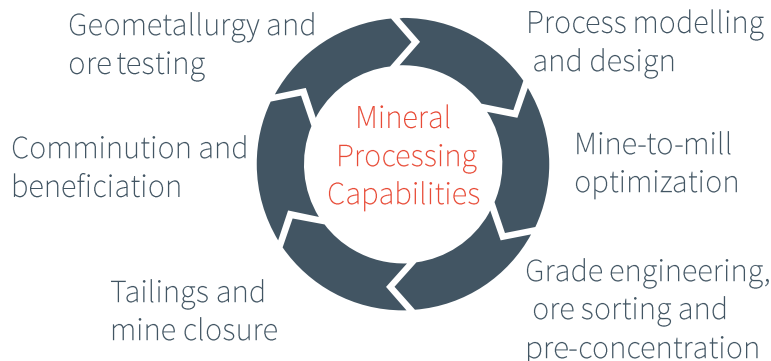


Dynamic
Simulation and
Debottlenecking



Mineral Processing

Our team brings **exceptional operational expertise** and a proven track record of delivering **innovative, forward-thinking solutions** tailored to the modern demands of the industry. With a strategic focus on **maximizing energy efficiency** and **optimizing water usage**, we integrate sustainability into every facet of our work. This commitment drives the evolution of our projects, ensuring they are not only environmentally responsible but also **economically viable**, resilient, and aligned with the future of smart infrastructure.





Pyrometallurgy

Non-ferrous smelting faces increasing demands to improve **process efficiency**, maintain or **increase production levels**, **reduce operating costs**, and meet ever stricter **environmental emission targets**. At the same time, ore and concentrate grades are falling and problematic impurities are on the increase.

Our **pyrometallurgy group** understands the pressures faced by our clients and takes a fundamental approach to projects starting with a thorough understanding of the **process metallurgy and project drivers**.

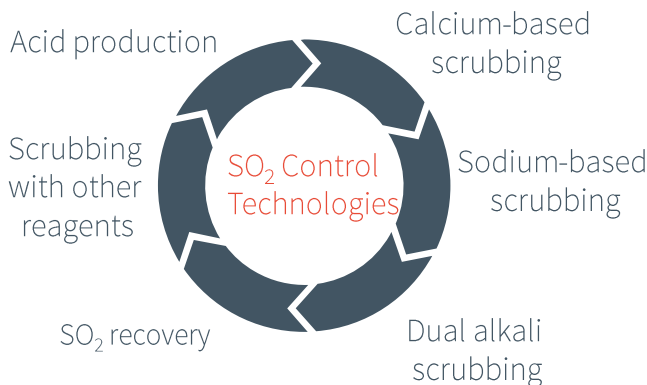
Alongside our comprehensive **pyrometallurgy process design capabilities**, Hatch is at the forefront of PGM smelting technologies.

Hatch has designed both new and rebuilt or upgraded furnaces and ancillary equipment for PGM smelters in various parts of the world.

Our furnaces incorporate **proprietary technologies** that have been proven on numerous furnaces worldwide. Features include water-cooled copper elements, custom-designed electrics to suit particular ores, simple electrode columns, and robust adjustable binding systems that increase furnace life and productivity and reduce maintenance.

Industrial Clean Technology

The Industrial Clean Technology sector practice is dedicated to developing and implementing **advanced solutions** for the capture and treatment of gases produced from various unit operations. Industrial Clean Technology's primary objectives are to mitigate harmful pollutants, ensure compliance with stringent environmental regulations and **enhance the plant hygiene** and workplace environment.



Hatch is acutely aware that the industry is continuously changing and must recognize and address the increasingly stringent **environmental limits**, while remaining competitive. Limits on sulfur dioxide (SO₂) and particulate emissions is a major focus in the **PGM industry**, and Hatch employs its experience in SO₂ control technologies to provide **powerful and sustainable** solutions to SO₂ and particulate matter problems.

Hydrometallurgy

The hydrometallurgical team employs its extensive experience and state-of-the-art technical tools to **design custom equipment and unit operations** for the full range of hydrometallurgical flow sheets and process steps.



Hatch offers global expertise for the construction and operation of **base metals facilities**. Our professionals have partnered with companies that operate chemical and metal production plants for many decades, working along them to engineer, design, operate, improve, and maintain their facilities.

Advanced design and specification of equipment types used in **base metal refining** projects are handled by our specialist technology groups.

Hatch has conducted **global capacity reviews** and analysis that has provided us with unique experience and know-how.





+ Business Practices



Advisory

At Hatch advisory, we believe that sustainability is not just a goal—it's a **journey**. Leveraging our platinum group metals expertise, we deliver **transformative projects** running from diagnostic to implementation phase that is built on strategic initiatives designed to drive **long-term value** and **operational efficiency**.



Business Readiness and Maintenance

Transformation Services
Asset and Maintenance Management
Risk Management



Deals and Transactions

Transaction Due Diligence
Value Targeting and Capture



Strategy and Planning

Strategic Effectiveness
Capital Agenda
Organizational Effectiveness



Environmental Services

Environment and Social Governance “ESG” and Climate Change are some of the **toughest challenges** facing our clients. We are **passionately committed** to the development of a future shaped by a **sustainable global society**. We recognize that climate change is largely caused by human activity and hinders this vision by negatively affecting natural ecosystems, economic returns, and community development. The resolution of this complex global problem will require multiple **simultaneous strategies** that we offer.



Climate Change

Greenhouse Gas Inventories

- GHG Reporting
- Life-Cycle Assessment
- Product Carbon Footprint



Operations management

- Emissions Inventory
- Supply Chain Analysis
- Emission Reduction



Sales & Marketing

- Competitor Benchmarking
- Product Positioning Strategy



Decarbonization Implementation

- Decarbonization Strategy
- Decarbonization Roadmap
- Program Management Support
- FEL Studies



Technology & Innovation

- Technology Investment Strategy
- Due Diligence
- Commercialization
- R&D Projects



Climate-Related Risk

- Internal Carbon Pricing Strategy
- Transition Risk Assessment
- Physical Risk Assessment



Technologies

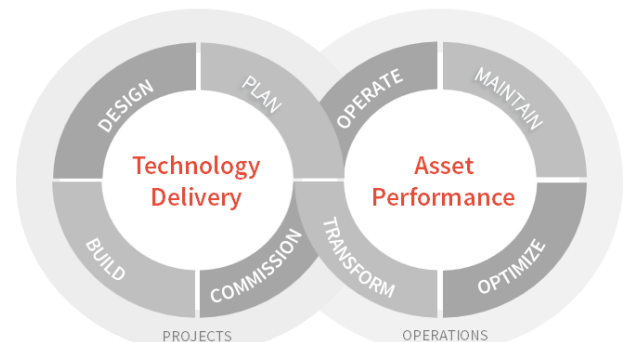
Hatch PGM Furnace Technology

The vast majority of PGM furnaces were designed by Hatch while the remainder incorporate Hatch design components and/or are supported by Hatch's engineers



Development and delivery of customized solutions

Our global team of dedicated engineering and commercial specialists holds more than 200 patents in 40 technology areas of expertise across our core business sectors. We provide technology commercialization, specialized know-how, mature technology solutions, as well as world class project execution services for each of our client industries. We offer full life cycle support with process development, custom equipment and technology design and supply, full portfolio of project services, and operations and maintenance services. By partnering with our clients we create unprecedented outcomes, developing better ideas and applying new and improved technologies to overcome complicated engineering problems.



Digital





Our digital solutions combine our deep understanding of our clients' technologies, businesses, and operational processes with our world-class capabilities in **information technology**, **execution technology**, and **operation technology**

An independent & **agnostic technology integrator** that is always seeking the best solutions for our clients

Helping **transform** the metals, energy, and infrastructure industries by solving previously intractable challenges with **advanced digital solutions**



Full **digital twin** implemented for Rougher and Scavenger circuits for MM Dugald River. Ready for **scale-up** across the entire flotation flowsheet with ongoing development





About Hatch⁺

Whatever our clients envision, our engineers can design and build. With seven decades of business and technical experience in the mining, energy, and infrastructure sectors, we know your business and understand that your challenges are changing rapidly.

We respond quickly with solutions that are smarter, more efficient, and innovative. We draw upon our 10,000 staff with experience in over 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

hatch.com

Contact:

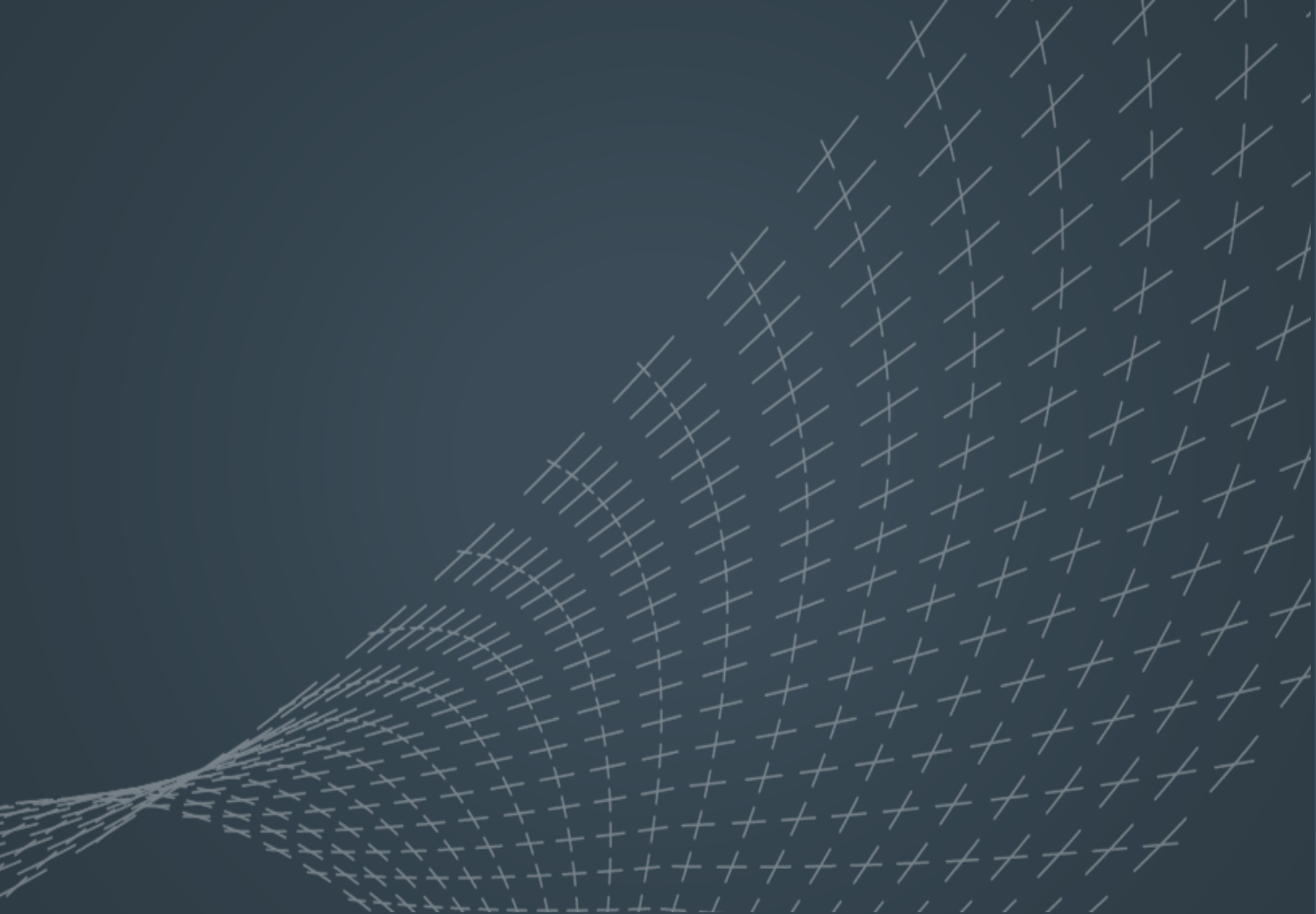
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HATCH

GROUP



HATCH

