

HATCH

# Performance **INNOVATIONS**

Delivering projects. Building partnerships.

Shaping the future.



The world is changing. Shifting trade policies, evolving economics, and geopolitics are affecting the way we approach business. But within this disruption lies immense opportunity to respond. We see the possibilities before us to shape the world we need.

Partnering with our clients, we turn possibility into reality. You bring us the complex work that powers our technical excellence, grounded in business acuity.

Together, we're creating positive change today and for years to come.



Let's build positive change, together.



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**John Bianchini**  
Chair and CEO

# Responding to the challenges of today

For 70 years, it's been a privilege to be your trusted advisors, working alongside you to create positive change.



As you work to meet the challenges of today, we know you're relying on us to bring our best ideas. We listen, learn, and collaborate with you, helping you respond with confidence. For those with advancing capital projects, we're delivering smarter strategies to help you do so by lowering the required amount of capital. And for those focused on optimizing existing operations, we're leveraging our technical expertise and combining it with solid business principles to maximize value.

Speed to market is now a top priority for many. As we rise to meet what the world demands of us, we must proceed with determination and embrace unfamiliar approaches. It's a privilege to help you take informed, strategic steps to fulfill your vision.

While you're responding to the challenges of today, we're working on your solutions for tomorrow. Artificial intelligence (AI) has galloped onto the scene and demands thoughtful response. While there's overwhelming discussion and it's often difficult

to cut through the noise, we have narrowed our focus on real world uses that will advance our industries. We've unlocked what we believe is a game-changer for the use of AI in mineral processing and we know this is just the tip of the iceberg, with our teams already looking forward at expanded use. We've shared details of this exciting advancement on page 38.

Regardless of changing market conditions, a truth remains: We have a duty to develop responsibly with the well-being of the environment, people, and places top of mind. The projects we build today create tomorrow's future.

The project stories we feature in this edition of *Performance Innovations* are a powerful demonstration of the meaningful work you bring to us at Hatch. It's our raison d'être: creating unprecedented outcomes as we pursue a better world through positive change.

**John Bianchini**  
Chair and CEO



## Partnering for exceptional project delivery

For seven decades, we've delivered successful projects based on the values that our founder Gerry Hatch instilled in us—do your homework, understand people, deliver excellence. In these 70 years, we have seen governments, markets, and circumstances evolve, yet our project challenges have remained remarkably the same: rising costs, lower margins, and sustainability and safety standards requiring additional investment. Today, the speed of progress is increasing pressure. How we respond is critical to future success.

# East Harbour Transit Hub

**Reshaping transit.  
Improving lives.**

Construction of the new multimodal East Harbour Transit Hub is underway to serve as a major interchange in Toronto's east end, connecting passengers to the regional GO Transit network and future Ontario Line services. While Union Station remains Canada's busiest transportation hub with more than 300,000 daily passengers and connections to subway, bus, streetcar, and regional rail services, East Harbour is being developed to relieve pressure from Union Station by an estimated 14% and is anticipated to be the second busiest train station next to Union Station.

**100,000**  
daily riders



**2<sup>ND</sup>**  
**busiest**  
station in  
Canada

Part of the City of Toronto's SmartTrack Stations program, the East Harbour Transit Hub will provide a greater choice of reliable and convenient transit options to shorten commutes and increase quality of life for locals and visitors alike.

We're proud to have been part of the journey since the beginning. In the project's early study phases, we worked with real estate developers First Gulf and Cadillac Fairview to advance the business case and economic strategy and undertake key stakeholder engagement and urban planning.

The East Harbour Transit Hub will be an economic catalyst for the surrounding development area, located directly south of the station. It will serve as a gateway to the Port Lands redevelopment, which will create new housing and employment. The transit hub is integral to the new adjacent transit-oriented community (TOC), which includes 13 million square feet of new residential and commercial space, community amenities, and green space, making it one of the largest commercial developments currently underway in Canada.



As part of the developer team, we provided strategic analysis and design for the East Harbour Transit Hub's preliminary layout and configuration. These early activities identified key benefits and opportunities at East Harbour, and secured multi-level stakeholder buy-in to advance the TOC segment of the project.

Changing requirements necessitated a project transition from developer-led to Metrolinx-led, a government agency responsible for coordination and integration of all modes of transportation in the Greater Toronto and Hamilton Area. Metrolinx, Hatch, and Rail Connect Partners (RCP) entered into an alliance contract delivery model to effectively drive progress and mitigate risk on the East Harbour Transit Hub project. An alliance delivery model is a collaborative contract, wherein participants work together, with mutual risks and responsibilities throughout project delivery. This type of contract creates a collective, cooperative culture, promoting enhanced team alignment, risk and reward sharing, and informed decision-making across all parties.

Within this model, we are the design participant and continue to be the Engineer/Architect of Record for the East Harbour station, providing project management, architectural and detailed design, detailed engineering, and construction design support services.

With safety and passenger experience at the forefront, the design will be consistent with the Metrolinx transit network. We are developing new and upgraded infrastructure elements, including the new Eastern Avenue Bridge, the Broadview Avenue bridge and road extension, railway retaining structures, tracks, and the facilities within the transit hub itself.

The East Harbour station will offer four new tracks for GO trains and two for the Ontario Line subway, as well as new passenger amenities, accessible drop-off areas, and connections to the future road networks.

Combined with Ontario Line passengers and expanded GO service, East Harbour is expected to serve an estimated 100,000 daily riders, with trains arriving as frequently as every five minutes during the busiest travel hours. With new light rail, cycling, and pedestrian connections, the transit hub will significantly alleviate gridlock in the downtown core and transform commutes for millions of people across the province.

Those living in Toronto's east end can soon say goodbye to congested Union Station. Under the alliance delivery model, the East Harbour Transit Hub project is reshaping the landscape of transit in the region and transforming the way infrastructure projects are conceived, constructed, and delivered.



# Efficiency by design: Delivering capital projects in today's markets

Projects in mining, energy, and infrastructure are undergoing a profound transformation. Development in the 19<sup>th</sup> and early 20<sup>th</sup> centuries was defined by government-led mega-projects, vertically integrated supply chains, and a singular focus on industrial growth. Today, global interdependence, ever-changing supply chains, capital efficiency, and the imperative of sustainable, inclusive development drive project delivery.

This shift has elevated the role of project consultants, whose expertise extends beyond technical design to encompass procurement intelligence, supply chain navigation, and project delivery and execution expertise. As nations pursue the energy transition and broader infrastructure renewal, success depends on vision, reduced capital intensity, and the integration of strategic engineering insight into project delivery.

Modern supply chains are intricate webs of global interdependence. While this complexity allows for unprecedented efficiency and scale, it also creates vulnerability. A port closure, a geopolitical dispute, or a cyberattack can ripple across industries in ways unthinkable a century ago.

At the same time, the goals of major projects have evolved. No longer is it enough to simply lay down steel and concrete. The new mandate is to enable sustainable, inclusive growth, and circular economies. Mining is reframed as a pathway to securing critical minerals for the energy transition. Infrastructure now encompasses more than roads and bridges; it's also broadband and data centers. Energy projects are measured not just by output, but by their carbon footprint and their ability to integrate renewables.

Today's major projects require partnerships. Governments, private investors, multilateral institutions, Indigenous communities, and civil society must find alignment. Securing a "social license to operate" is as essential as securing financing or permits. And in today's connected world, public scrutiny has never been more prevalent.

Amid this complexity, we believe four principles guide how to build efficiently from day one:

1. Rely on robust procurement strategies
2. Design for speed
3. Think globally and act locally
4. Employ the best people, methodology, and tools.

## **Relying on robust procurement networks**

We provide critical insights into procurement networks, identifying which services, materials, and technologies can be sourced locally, regionally, or globally, and which components are available off the shelf versus custom designed.

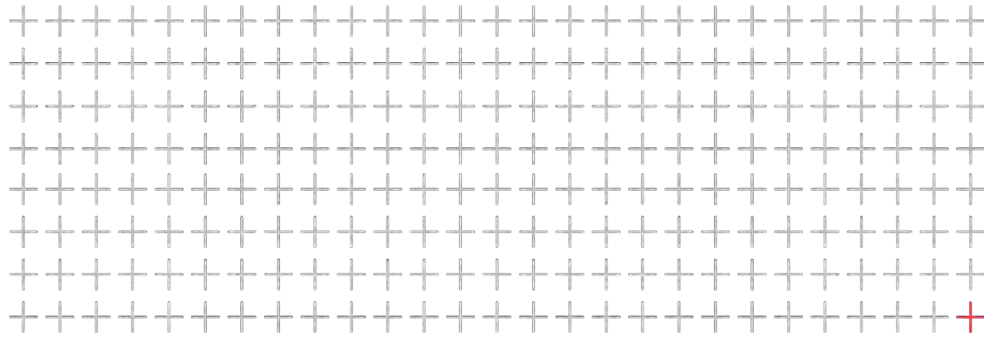
With approximately US\$5 billion in equipment, materials, and services procured each year, we don't take chances by making procurement decisions based on speculative data. We manage every project with our proprietary digital platform, which provides real-time visibility into pricing trends, lead times, and vendor performance, helping us manage long-lead or high-volatility items, align designs to available components, and leverage just-in-time delivery strategies. This capability is especially crucial when navigating market shortages, protectionism, and rapidly shifting trade flows.

The Zimplats smelter expansion project in Zimbabwe was fast-tracked to meet growing demand and the overarching business plan, and we were entrusted to lead the way. The project moved from the feasibility study in 2021—without any preceding phases—to execution in less than a year and final hot commissioning was completed in December 2024.

Success hinged on precise logistical planning, early engagement with key technology partners, and close collaboration between the Hatch and Zimplats teams. Hatch and Zimplats worked closely with suppliers to optimize engineering, fabrication, and delivery schedules. We sole-sourced and appointed technology partners as early as the feasibility study, allowing for overlapping project phases and seamless coordination of construction and commissioning.

## **Designing for speed**

Capital project efficiency must be engineered at the drawing board. This means designing with delivery in mind and embracing shared responsibility across the entire life cycle. By bringing contractors to the table during design, decisions consider real-world pricing, supply chain realities, and constructability constraints.



Contractor feedback can flag access, sequencing, or installation challenges before they're built into the model. This approach shortens procurement cycles, reduces rework, and results in a design that's technically sound, commercially intelligent, and build-ready.

We've embraced advanced work packaging, which regiments construction planning in the early stages of a project and aligns engineering and procurement work packages to flow into construction work packages that contractors can use. With skyrocketing costs in construction, this approach should be considered best practice.

### **Thinking globally, acting locally**

When speed to market matters, projects can't only operate 9–5. What sets us apart is our ability to pick the best people from around the world to deliver around the clock, if necessary. Our competitors will tell you the same, but their structure doesn't allow for efficiency.

We have purposely organized ourselves for the best response, anchoring experts in all regions around the world and building capacity in each of those regions to offer the right solutions no matter where the project is located. This allows us to achieve project objectives through optimized resource load-balancing. We also leverage a diverse range of experiences and perspectives, fostering inclusivity and representation in design. As a result, we accelerate the design process by enriching solutions with innovative insights from varied viewpoints.

### **Employing the best tools for maximum efficiency**

In recent years there has been a culture shift in how projects produce and consume information. Data-centric model-based deliverables have become a reality with advances in engineering platforms and tools, resulting in efficiency gains over traditional document-based deliverables.

We've transformed our organization to enable productivity and have fundamentally changed the way we work through innovation and technology. At the core of this transformation is an integrated systems environment that ensures secure, high-performance access to critical systems and data—seamlessly connecting delivery partners including owners, contractors, and suppliers.

This environment leverages the latest engineering and project management systems, supported by centralized data management tools, processes, and procedures. Designed for maximum efficiency, it is accessible across all of our global offices, enabling consistent execution and collaboration at scale.

By unifying design, execution, and data into a single secure ecosystem, we simplify the complexity of capital project delivery. All functions—engineering, procurement, project controls, construction, and commissioning—are connected through trusted, verified data available via multiple interfaces.

This data-centric approach enhances collaboration, improves deliverables, and enables real-time analytics for faster, more informed decision-making. Crucially, it also streamlines handover by ensuring continuity and integrity of information across all project phases, reducing risk and accelerating operational readiness.

The Nemaska Lithium integrated project in Québec, Canada, is just one example of a project benefiting from our data-centric approach. The project is being executed on a vast scale, with an inclusive team approach that, at peak, includes 400 experts from 39 Hatch offices worldwide. To ensure that this large, global team can deliver as promised, we're using custom system integration, templates, and workflows to allow people to work in parallel.

The project is making full use of our digital project delivery platform to manage information. Overall, we have 120 procurement packages to oversee with more than 75,000 documents. Collaborating in a shared data environment enables

the Nemaska Lithium team to fully engage with the Hatch team, increasing accuracy and limiting potential rework.

### **Delivering successfully**

The future of successful project delivery hinges on the ability to deliver with precision, speed, and resilience. We stand at the forefront of this transformation, redefining how capital projects are conceived and executed. By integrating strategic procurement, agile design, global-local delivery models, and cutting-edge digital tools, we help our clients navigate complexity and deliver as promised. As the world demands infrastructure that is built to both last and uplift, we play a pivotal role in translating ambition into delivery. Our value lies in our cross-sector expertise, technical design, and our deep understanding of the realities of modern supply chains and project delivery.

# AP60 Expansion Project

**A major step toward  
a more sustainable,  
low-carbon future for  
the metals industry**

The Hatch partnership with Rio Tinto stretches back to the 1950s, when our founder, Gerry Hatch, left his job at Québec Iron and Titanium's (QIT) UGS plant (now part of Rio Tinto Iron and Titanium) to start his own engineering consulting firm. For more than 70 years, we've worked with Rio Tinto on their landmark projects; the AP60 aluminium smelter expansion is just the latest.

Rio Tinto's AP Technology™ is a leap toward sustainable, low-carbon aluminium production. It is among the most efficient and lowest carbon technology currently available at commercial scale. It generates one seventh the greenhouse gases per tonne of aluminium when compared to the industry average and when combined with hydroelectricity.

**300,000  
tonnes**  
of CO<sub>2</sub> reduced  
per year



**A**luminium is lightweight, sustainable, and fully recyclable. It's an indispensable metal in almost every industry and a key element in the global transition to cleaner energy solutions. In 2023, aluminium demand was at 69.9 million tonnes a year<sup>1</sup>. By 2050, Rio Tinto estimates global demand will rise by 40–50% and will outstrip supply by 20%<sup>2</sup>.

In the early 2010s, Rio Tinto's research and development teams in France and Canada created something almost miraculous. Operating at 600 kiloamperes, their proprietary smelting technology could produce up to 40% more aluminium per pot compared to conventional methods. In 2012, they started up their AP60 pilot smelter to prove this technology could work at a commercial scale.

We were among the partners who provided complete engineering, procurement, and construction management services for the pilot smelter, a greenfield plant with 38 reduction cells that produces 60,000 tonnes of aluminium annually.

With their AP60 technology now tried, tested, and proven, Rio Tinto knew it was time to expand operations to meet ever-growing demand. In 2023, they announced an investment of C\$1.4 billion to expand the smelter, adding 96 new pots to the 38 in operation. In addition to increasing its smelting capacity, the expansion will significantly support Rio Tinto's goals to reduce its emissions by 50% by 2030 and achieve net zero by 2050.

But this wasn't a greenfield project. The Arvida complex in Québec, Canada, is a fully operational site including an alumina refinery, the original Arvida reduction lines,

and the more recent 38-cell AP60 pilot plant. Space is extremely limited, meaning the project involved much more than the simple addition of new reduction cells. It needed clever pre-assembly and modularization strategies and precise logistic planning to navigate the tight space and ensure no disruptions to the existing operations.

As Rio Tinto's integrated delivery partner, we are managing the full scope of engineering, procurement, project controls, and construction coordination on the ground. The project is complex, involving a large greenfield element as well as numerous brownfield modifications and tie-ins, each requiring intricately timed construction sequences. To feed those construction work fronts, we've leveraged our global network of suppliers to secure crucial equipment and diversify procurement sources. From Québec to Europe, Bahrain, and China, the project's reach is significant.

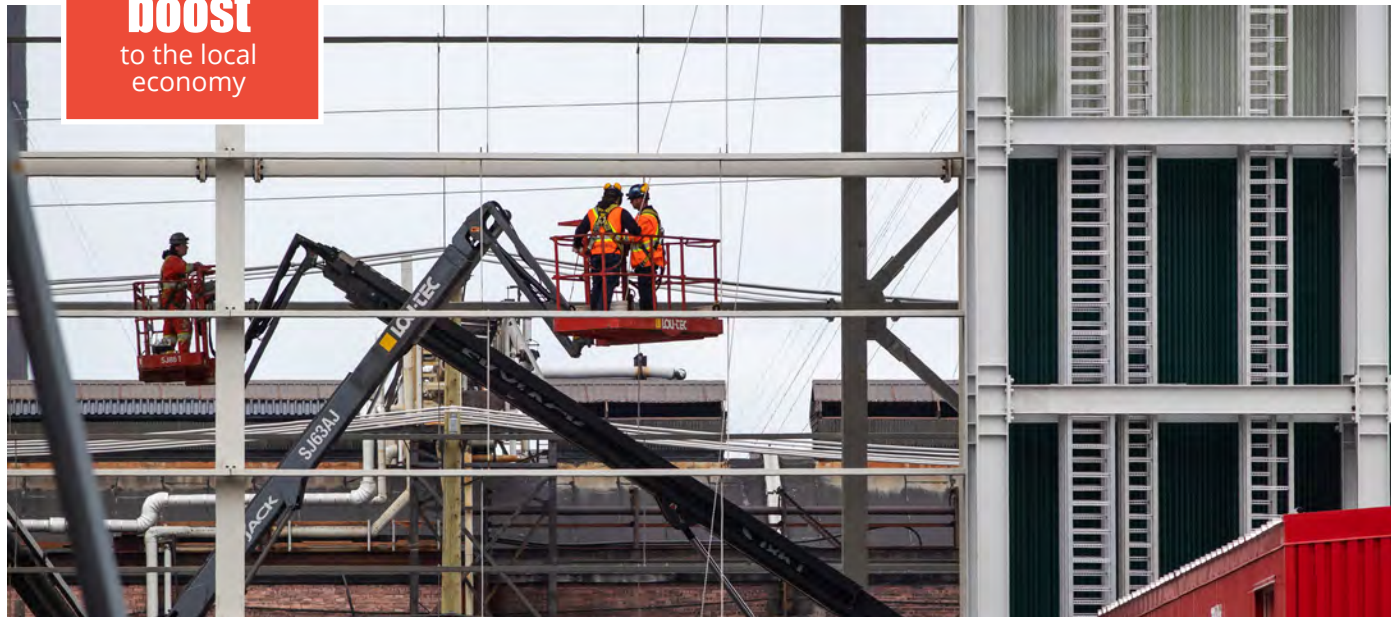
Rio Tinto is deeply committed to the Saguenay—Lac-Saint-Jean region; its privileged access and proximity to hydroelectric power make it a highly strategic location for the company's aluminium operations. But more than that, generations of families have worked at the long-established Arvida facility, which the AP60 smelter will gradually replace. With a wealth of generational knowledge in the area, Rio Tinto has a deep commitment to giving back to the community that helped build the backbone of its aluminium operations in Canada.

More than 70% of the approximately 1,000 workers, contractors, suppliers, and consultants involved in the AP60 smelter expansion are from Québec's regional workforce, creating a boost to the local economy of nearly C\$1 billion.

As of September 2025, the project is more than 70% complete and on track to achieve first hot metal by March 2026. When complete, the facility will reduce CO<sub>2</sub> emissions by approximately 300,000 tonnes per year and fine particles by almost 90%.

Reflecting the long-standing collaboration between Rio Tinto and Hatch, the AP60 smelter expansion project is a major step toward a more sustainable, low-carbon future for the metals industry, the end-use sectors, and, importantly, the surrounding community of Saguenay—Lac-Saint-Jean, which helped build it from the ground up.

**\$1B**  
**boost**  
to the local  
economy



**40%**  
more  
aluminium  
per pot

1. "Aluminum facts – National Resources Canada," Government of Canada, last modified February 24, 2025, Aluminum facts - Natural Resources Canada  
2. "Our Commitment to Québec," Rio Tinto, last modified December 18, 2023



# Ushering in a new era of intelligent risk-based decision-making in construction

In recent years, there's been a rapid adaptation of risk-based decision-making tools that are reshaping how we live. Take insurance apps, for example, that track driving habits to analyze in real time and generate reasonable projections of the risks tied to behavior behind the wheel. Companies are relying on these technologies to help them assess and manage their risks, driven by data and powered by advanced computational modeling.

What's fascinating is that this same revolution is unfolding in the project world. Formula One teams rely on hundreds of sensors to transmit live data back to engineers, who process it instantly to make strategic race decisions in real time. The question now: Is this revolution reaching the construction industry? And if so, how can it elevate project efficiency and predictability?

Over the past decade, both the construction industry and academia have made substantial investments in digital project delivery and the adoption of integrated, data-driven tools that strengthen collaboration and communication among project stakeholders, while enabling the early resolution of risks and identifying opportunities.

As one of the core elements of digital project delivery, we are among the earliest adopters of the digital twin concept, where our engineers create a bespoke, dynamically evolving model of physical assets allowing the end users to monitor the health and safety status of the asset throughout operations. It's a game-changing tool that empowers end users to take preventive action on a real-time basis—when and where it's needed.

We've recently developed a digital twin for an iron and steel client that uses a modified Bernoulli's equation and a mass balance model to provide real-time guidance for casting operators, considering taphole geometry, blast pressure, liquid head, and friction factor assumptions.

The digital twin offers several benefits to iron and steel plants, significantly improving blast furnace operations and reducing the variation in bosh pressure differential, cast duration, casting gap time, and other factors by 10–20%. The model improves furnace stability, leading to better hot metal quality and reduced unplanned shutdowns and operational risks due to high accumulation of furnace hearth liquid.

But imagine applying the digital twin concept earlier, during the design and construction phases when project changes are rapid and frequent. Instead of modeling the twin of a physical asset, we model the twin of the project itself and its related functions. The result? A dynamic and integrated project management framework that enables real-time scenario analysis and forecasting, informed by data, giving stakeholders the insight they need to make smarter, faster decisions throughout the project life cycle.

Hatch is proud to have developed a first-of-a-kind proof of concept called project twin, a visionary, intelligent decision-analysis tool built on four foundational pillars: information, integration, intelligence, and interaction.

- 1. Information**—We apply advanced AI-driven algorithms to learn from the historical project data and extract meaningful insights, creating a source of truth that is objective and less prone to bias.
- 2. Integration**—We connect data sources to build a cohesive, integrated plan that accounts for the interdependence among project functions. In both academic literature and the broader market, most research and solution providers in risk-based decision-making tend to focus heavily on integration.
- 3. Intelligence**—We simulate the decision-making process to generate optimal solutions in response to project changes

and constraints. When a change occurs, the system rapidly calculates its impact across key project objectives from budget ("How much will it cost?") to schedule ("How long will it take?"). This empowers the decision-making team to conduct risk-based scenario analyses in real time, enabling them to validate the viability of their vision and deliverables.

- 4. Interaction**—Teams come together to review the scenarios generated during the Intelligence phase and ensure that the chosen solution for execution is the optimum solution. The project twin concept represents the next generation of quantitative risk analysis tools, which will enable the full integration of risk as a new dimension within intelligent 3D models, alongside the fourth dimension of time, and the fifth dimension of cost.

Intelligent risk-taking is about embracing risk. It's about understanding its rhythms, anticipating its shifts on a real-time basis, and finding innovative ways to turn it into opportunities. It's about creating fact-driven alternatives informed by data that help our clients get to market faster, safer, and cheaper, without compromising the fundamentals.

# insights

# Zimplats Smelter Expansion

## A smelter expansion powering progress for Zimbabwe

From the cars in our driveways to life-saving surgical technologies, platinum group metals (PGMs) are essential to modern life. And in Zimbabwe, Zimplats, a proud subsidiary of the Implats Group, has emerged as the country's leading PGM producer.

With a deep commitment to sustainability, community development, and operational excellence, Zimplats embarked on a transformative journey to expand the smelting capacity and implement a new SO<sub>2</sub> abatement plant at its Selous Metallurgical Complex (SMC), located 80 kilometers southwest of Harare. At the center of this initiative was a state-of-the-art 38-MW Hatch furnace, which tripled the smelting capacity and positioned SMC as the PGM processing facility of choice in Zimbabwe.

**2<sup>ND</sup>  
largest**  
PGM furnace  
in the world



As a long-standing partner of Zimplats for more than 25 years, we brought deep knowledge of the smelter and world-leading expertise in PGM smelting and SO<sub>2</sub> abatement. We delivered project management, controls, risk management, engineering, procurement, quality assurance, health and safety management, construction management, and commissioning services, overseeing every phase of the expansion.

Space at the existing SMC smelter was limited and the upgrade had to be executed and integrated without halting production. Accounting for these complexities, we developed

a tailored approach for the layout and flowsheet as well as construction and commissioning activities to ensure minimal interference. And with the smelter operators actively working in the producing plant, we also established a plan to train those same operators on the new plant, highlighting differences between the old and new operations, and accounting for hand-over between the commissioning and operations teams.

The US\$400-million smelter expansion consisted of a wet concentrate feed system, a 45-tonne-per-hour flash dryer, a 38-MW Hatch furnace, two 12' by 24' Peirce-Smith converters, a new compressor house to supply

plant and instrument air to the expanded smelter, a cooling water plant to provide cooling water to the furnace and other plant users, raw and potable water storage and distribution plants, a slag granulation system for the new furnace and an integrated slag handling system for both the old and new furnaces, and a converter aisle extension to allow for optimal production and maximized redundancy between the existing furnace and converters and the new ones.

Zimplats required that the project be fast-tracked to meet their growing demand and overarching business plan, and we were entrusted

to lead the way. The project moved from the feasibility study in 2021—without any preceding phases—to execution in less than a year and final hot commissioning was completed in December 2024.

Success hinged on precise logistical planning, early engagement with key technology partners, and close collaboration between the Hatch and Zimplats teams. Hatch and Zimplats worked closely with suppliers to optimize engineering, fabrication, and delivery schedules. We sole-sourced and appointed technology partners as early as the feasibility study, allowing for overlapping project phases and seamless coordination of construction and commissioning.

The global COVID-19 pandemic was at its peak during project initiation and feasibility study. With teams spread across South America, Canada, and South Africa, all design reviews and execution planning had to be conducted virtually. It wasn't until January 2022 that the team met on site for the first time to begin execution.

Global supply chain disruptions, geopolitical tensions, and rising steel prices added further complexity. In September 2023, Zimplats made the strategic decision to defer Phase 2 of the SO<sub>2</sub> abatement plant to 2028, focusing efforts solely on the smelter expansion. This required agile planning to reconfigure shared utilities and implement interim emissions control measures.

With full focus on the smelter, we delivered the furnace, flash dryer, Peirce-Smith converters, and all supporting systems. The result

**5M** site hours  
**>1,000** local jobs



is a near threefold increase in smelting capacity from 135,000 to 380,000 tonnes of concentrate per annum, enabling Zimplats and the Implats Group to meet future production targets.

Throughout the project, our integrated digital delivery tools ensured real-time tracking of engineering, scheduling, estimating, and construction.

Despite the odds, the project moved from board approval to first matte tap in just under three years, logging more than 5 million site hours with only one lost-time injury, a testament to ours and Zimplats' shared commitment to safety and excellence.

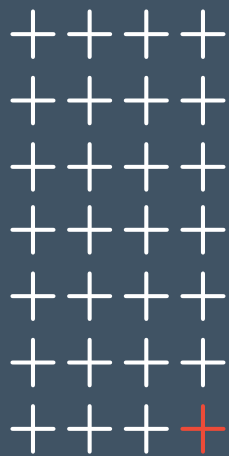
The new furnace has operated at the required operating factor since commissioning with no concentrate

stockpiles or exports. The expanded smelter now stands as a technological legacy powered primarily by solar and hydro energy, and representing the future of sustainable mining in Zimbabwe.

The project created more than 1,000 construction jobs for local communities and reinforced Zimplats' role as a catalyst for economic development. Looking ahead, Zimplats and Hatch are preparing for the next phase: construction of the SO<sub>2</sub> abatement plant, scheduled to be in operation by the end of 2028. Once operational, it will produce high-strength sulphuric acid for local fertilizer production, supporting Zimbabwe's agricultural sector and reducing environmental impact.

**135,000 to 380,000 tonnes** of concentrate per annum





# Contractor delivery for successful project outcomes

Global research indicates that only 10% of projects deliver on time, 10% on budget, and 10% on the desired benefits<sup>1</sup>, translating to a 1/1000 probability of achieving all three for a successful project.

The causes of these failures are many: not enough front-end planning, contracting strategies that lead to misallocation of risk, and work done in silos, unnecessarily triggering adversarial relationships.

Recognizing the importance of aligning project delivery solutions in the infrastructure, energy and metal sectors, Hatch has evolved an approach to project delivery that engages contractors and clients as partners.

## Complexity and changing market demands

Often clients link cost and schedule certainty to contract style, especially construction contractor-delivered projects. This is a fallacy—80% of projects are delivered late<sup>2</sup> with a 4.6% increase in project costs for every year delay<sup>3</sup>. That's US\$400 billion in annual schedule impacts. With 90% of projects experiencing cost overruns<sup>4</sup> and an average overrun of 43% for mining<sup>5</sup>, 70% for infrastructure, and 46% for oil and gas<sup>6</sup>, that equates to an estimated US\$14 trillion in overruns for projects underway. In an era defined by compressed schedules, geopolitical undercurrents, and rising social expectations, owners need a smart, aligned approach to contractor delivery. One that begins with trust and ends with successful outcomes. This starts with how we choose to work together with contractors.

## A new approach to contractor delivery

We have responded to these challenges by establishing a new Contractor Delivery practice.

### What is it?

Comprised of experts with years of experience delivering complex multidisciplinary projects, the team leverages its construction and contracting knowledge, its technical excellence, and its digital delivery expertise to bring efficiency and predictability, creating value for contractors. The team's vision is to become the partner of choice for selected contractors in the metals, energy, and infrastructure sectors.

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### **Why establish a Contractor Delivery practice?**

Capital projects in the industrial space are characterized by large scopes, involving multiple stakeholders, and often with lump sum fees that can exceed hundreds of millions of dollars.

We often see failure when either the owners set up inappropriate contracting strategies or they're not getting what they need from the contractors. This includes the following:

- Misaligned design and construction schedules
- Construction while design is being finalized, resulting in rework when design changes occur
- Construction teams requesting late design changes during engineering to reduce costs based on market feedback
- Misaligned design and construction roles and responsibilities.

### **How are we addressing this?**

We've developed a methodology to improve contractor delivery.

We believe in the fundamentals of front-end loading and establishing the correct contracting strategy with like-minded partners from the beginning. Success is more likely when the owners, contractors, and designers are at the table early on.

We believe that success is more likely when organizations share the same values and we seek contractor partners whose values align with our own. It all comes down to behaviors.

Our approach ensures that what's designed can be built, that what's built aligns with the client's business case, and that all parties stay on course, even as conditions shift. We do this by adopting processes that we have developed and implemented successfully across our sector industries.

These processes include:

#### **De-risking projects through foresight:**

By leveraging 3D modeling, BIM, and space proofing, we identify systemic risks early, benchmark performance, and inform scenario modeling and decision-making, helping stakeholders understand the knowns and unknowns. Adoption rates are increasing but contractors lag behind in the use of BIM. That's where we can help. Our experience with digital solutions can bridge the gap.

**Synchronizing partners:** From utilities and government regulators to modular fabricators and local communities, we ensure that every piece of the delivery puzzle moves in sync.

**Empowering digital delivery:** We integrate digital systems, ensuring tools are connected, current, and used for real-time decision-making across stakeholders.

**Trust across boundaries:** We understand that successful delivery hinges on relationships. We foster behavioral alignment across teams early on, creating the conditions for a "shared pain, shared gain" work model by reducing change orders and disputes, improving schedule certainty, and encouraging innovation and problem-solving.

In today's increasingly complex project landscape, success demands more than traditional contracting models—it requires a fundamental shift in how owners and contractors collaborate. Our Contractor Delivery practice represents this shift, offering a proactive, integrated approach that aligns stakeholders from the outset, leverages digital innovation, and fosters trust-based partnerships. By focusing on front-end planning, behavioral alignment, and shared accountability, Hatch is redefining contractor delivery to drive predictable outcomes, reduce risk, and unlock long-term value. The result is projects that are delivered on time and on budget, while achieving the benefits they were designed to deliver—raising the bar for what success looks like in the infrastructure, energy, and metals sectors.

### **Our services**

- Global procurement of equipment, bulk materials, systems, and services
- Assurance, procurement support, and requirements adherence
- Design management
- Technical management systems
- BIM "digital twin" integration design models
- Complete construction joint venture document control system
- Testing, commissioning, start-up, and ramp-up services
- Operational safety
- Construction support
- Commercial and contractual management
- Estimating using Hatch's proprietary suite of tools
- Expertise in pre-assembly, modular and precast concrete design, logistics, and construction
- Systems integration.

# Hunter Power Project

## Stabilizing Australia's energy grid

In the heart of New South Wales' Hunter Valley, a new chapter in Australia's energy story is unfolding. The Hunter Power Project, led by Snowy Hydro, is more than a power station. It's a strategic bridge between the country's fossil fuel past and its renewable energy future.

As Australia accelerates the retirement of aging coal-fired power stations, the national grid faces a growing challenge: how to keep the lights on when the sun isn't shining and the wind isn't blowing. That's where the Hunter Power Project comes in, an important part of the federal government's Future Gas Strategy, which plans to use gas as a transitional fuel while Australia scales up its renewable capacity.

**6M**  
tons of CO<sub>2</sub>  
emissions  
per annum  
eliminated



### A peaking plant with a purpose

The Kurri Kurri-based facility, a former aluminium smelter site, is a peaking power plant, designed to operate during periods of high electricity demand, such as hot summer afternoons or during unexpected outages. Unlike baseload plants that run continuously, peaking plants are nimble, firing up to inject power into Australia's grid when it's needed most.

The Hunter Power Project is not a step back from renewables. It's a firming solution. As wind and solar become dominant sources of clean energy, their intermittency creates volatility. The gas turbines at Kurri Kurri provide dispatchable energy, meaning they can be turned on quickly to balance the grid when renewables dip.

The plant will deliver up to 660 MW, enough to stabilize the grid during peak demand and support the integration of 1,500 to 2,000 MW of renewable energy.

It will also eliminate approximately 6 million tons of CO<sub>2</sub> emissions per year.

### Engineering excellence, the people and planning behind the power

Behind the scenes, a highly coordinated, integrated project team of more than 750 workers—including engineers, construction crews, environmental specialists, and government stakeholders—has brought the Hunter Power Project to life. The team has already successfully

achieved major milestones, including commissioning of the gas generator 1 turbine and initial power generation.

To ensure this complex infrastructure delivers on its promise, we have played a pivotal role in supporting Snowy Hydro across engineering, quality assurance, commissioning, and operational readiness. Leveraging our deep expertise in complex infrastructure and energy systems, we have contributed niche capabilities in high-voltage protection, functional safety, control systems, and mechanical commissioning. From leading the quality team and managing project-wide documentation handover, to coordinating generator connection studies and compliance with the National Electricity Rules,

our integration into the project team has ensured technical excellence and regulatory compliance.

We have also developed detailed operational test procedures, alarm response manuals, and isolation schedules to support safe and efficient commissioning. Through our structured Operational Readiness program, a critical component that bridges the gap between construction and day-to-day operations, we are managing discrete work packages and deploying our proprietary Ready operational readiness management system to support a smooth transition from construction to operation.

The Hunter Power Project stands as a symbol of balance between old and new, reliability and innovation, and the urgent need to act while building a sustainable energy future.



**750**  
workers



**660**  
MW



## Partnering for operational excellence

Industry success isn't just about building. It's about enhancing investment and ensuring outcomes. Operations support is a powerful driver of long-term success. When engineering partners are deeply embedded, they bring critical insight, agility, and resilience. The future belongs to those who treat operations as a strategic foundation, combining human expertise with innovation to unlock the full potential of their assets.



## Are you leaving value on the table after the build?

In the metals, energy, and infrastructure sectors, capital projects often take center stage. New facilities, major upgrades, and expansions are seen as the headline-makers—the moments that define progress. But the real story begins after the ribbon is cut.

Operations support is too often viewed as a secondary service, a reactive measure to keep things running. But this mindset leaves value on the table. In reality, operations support is a strategic lever for asset owners. Typically, 10% of an asset's life-cycle cost is in the design and construction, while 90% comes from operations, maintenance, energy, and support. Operations support protects this investment and ensures long-term resilience. When integrated thoughtfully, operations support complements and enhances capital investments, turning good projects into great ones.

The benefits of operations support are found in the avoided failures, the extended asset life, the smarter decisions made in real time. These are the wins that may not make headlines, but that ultimately define the long-term success of a project.

Much of the focus in operations support has turned to the integration of digital tools and AI to find efficiencies or incremental improvements in procurement or supply chains. But without the right partners to understand the specifics of each site, these tools provide limited value. At the end of the day, it's about the operators. About people. About getting back to the basics of building the right teams and partners with the right intelligence and insights. No machine can replace that.

The best engineering partners are constant collaborators. When experts are embedded in your operations, they gain a deep understanding of your ecosystem: your processes, your constraints, your goals. This proximity leads to smarter design decisions, faster problem-solving, and more effective interventions.

A notable example of our enduring client relationships is our multi-decade collaboration with a leading metallurgical organization.

Hatch operates a permanent office near one of the complexes, providing integrated support across operations,

sustaining capital initiatives, and major capital projects. This embedded services model enables us to remain closely aligned with the organization's strategic and operational priorities, fostering deep relationships and responsiveness.

Our collaborative approach includes the deployment of structured methodologies, which establishes annual performance objectives and cost-efficiency targets for all project phases. Through rigorous evaluation of design alternatives, scope optimization, material selection, and schedule refinement, we consistently identify opportunities to reduce total installed costs.

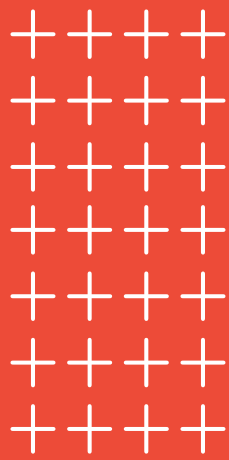
In 2024 alone, we executed 46 FEL1-FEL3 studies, 45 FEL4 implementations, and more than 150 technical assistance mandates.

These efforts have yielded substantial value, with implemented cost-saving and cost-avoidance strategies typically saving up to 20% of the annual capital plan.

This example illustrates a powerful truth: operational intelligence protects asset value. And when these insights are considered during the design phase, they lead to smarter, more resilient infrastructure from the start. Engineers who understand how assets behave over time bring a practical edge that elevates design from theoretical to truly functional.

Our approach delivers tangible benefits, reducing the learning curve for new projects, accelerating response times, and ensuring that every decision is informed by deep operational knowledge. And when it's time to use digital tools and AI, we incorporate that deep operational knowledge to build systems that work and provide real value. The successful implementation at MMG's Dugald River, where we implemented groundbreaking AI-assisted process control, is a perfect example. Guided by operational, process, and machine learning expertise, we developed and deployed a closed-loop AI system capable of accurately modeling flotation behavior and autonomously selecting optimal setpoints, all in real time and completely integrated into the control layer.

The future of industrial performance will not be shaped by isolated fixes or short-term gains. It will be defined by bold, integrated strategies that connect design, operations, and transformation. As industries evolve, the winners will be those who treat operations as a foundation for innovation. They will choose partners who understand the full life cycle of their assets, who bring both technical depth and strategic foresight, and who are willing to stand shoulder-to-shoulder through every challenge.



# AI breakthrough in mineral processing

Global mining and processing operations are under intense pressure. Ore grades are declining, operating costs are increasing, mineralogical complexity is rising, and a new generation of operators is entering the workforce just as process experts are retiring. For operators and metallurgists, these realities play out in control rooms every day: changing ore bodies, frequent disturbances, and lost revenue when setpoint decisions are not optimal.

While geometallurgical variability remains a dominant driving force for downstream performance, our experience across many operations suggests that 5–20% of process variability and metal losses in minerals processing circuits can be traced directly to sub-optimal setpoint selection. In an industry built on thin margins and volatile markets, that's the difference between a mine that thrives and a mine that merely survives.

Conventional advanced process control (APC) solutions, such as fuzzy logic and matrix model systems, plateau in variable, complex environments where the rules of the game keep changing. When coupled with operator limitations, value is left on the table. This is where AI-assisted process control steps in.

Artificial intelligence offers enormous promise. But in complex industrial environments, AI cannot deliver value in isolation. At least, not yet. To be effective, it must be rooted in clear problem definition, accurate process models, and, importantly, in operator experience that gives context to the data. Yes, algorithms are essential, but first, understanding the problem and the desired outcome is the critical challenge.

Hatch has developed a groundbreaking AI-assisted process control—a new control paradigm that combines first-principles models, process knowledge, and adaptive neural network technology to continuously support operator decision-making in real time. It's embedded intelligence, built directly into the asset, enabling plants to run better, faster, and more consistently. More than a simulation or digital overlay, it is intelligence that lives inside the operating asset, augmenting operators and unlocking new levels of performance.

## Applying Hatch's AI-assisted process control

MMG's Dugald River Mine is one of the world's highest-grade zinc deposits. From commissioning, the mine's operators had built a culture of continuous improvement and strong baseline zinc circuit performance, with rougher-scavenger recovery averaging ~96%. Despite multiple improvements, the Dugald River team were still experiencing recovery variability associated with changing feeds and setpoint decision inconsistency. They began looking toward process-centric AI to autonomously optimize "treatment recipes" as the plant feed dynamically changed.

Following an extensive market scan, MMG partnered with Hatch to take a fundamentally different approach to process automation, grounded in process-first engineering and purpose-built AI. Guided by deep operational, process, and machine learning expertise, we developed and deployed a closed-loop AI system capable of accurately modeling flotation behavior and autonomously selecting optimal setpoints, all in real time and completely integrated into the control layer. Commissioned in January 2025, this AI-assisted flotation controller is one of the first applications of autonomous neural networks in mineral processing.

MMG's AI implementation targets maximum net smelter return (a net-revenue objective) on each short-interval decision loop. Without a single physical modification to the plant, this objective aims to achieve measurable, sustainable improvements in the grade-recovery position of the process, reagent consumption management, and stable, autonomous plant control.

Based on the efficiency of our deployment, the payback period will be measured in weeks and months, not years.

This closed-loop technology took what was initially an idea to encode great operator decision-making, and is creating a paradigm shift. It is proof that the technology works in production, and it provides the confidence to extend the technology across a range of other metallurgical processes within concentrators, hydrometallurgical plants, and smelters.

## Taking it forward

Unlike black-box AI models, our solution is built with high transparency. It doesn't just recommend setpoints, it exposes critical operational relationships, reports its errors, encodes knowledge, and validates decisions against process heuristics, moving beyond known limitations of advanced process control and model predictive control. It mimics existing operational concepts and makes them more easily accepted by operators. No AI system succeeds if the operators on the ground don't believe in or understand its recommendations.

Hatch's AI-assisted process control is built to solve:

- Multivariate decisions with many inputs and many outputs
- Decisions made on a minute-by-minute timescale where operators still intervene frequently
- Complex or nonlinear relationships between inputs and outputs
- Areas where small incremental improvements generate large economic gains (throughput, recovery, energy, asset life).

The success at Dugald River resulted from a combination of human expertise and system design, merging decades of metallurgical knowledge with machine learning capabilities to create a unique solution. It's an important leap toward full bidirectional process automation and marks a turning point in mineral processing not yet seen before. The potential of AI to transform how the mineral processing sector operates is enormous. It's an adaptable paradigm with flotation as just the first successful application. And it's only the tip of the iceberg.

A low-angle, blue-tinted photograph of two industrial workers. They are wearing hard hats and high-visibility safety vests. The worker on the left is holding a tablet and looking up at a complex piece of machinery. The worker on the right is also looking up and has one hand raised towards the equipment. The scene is filled with metal beams, pipes, and mechanical components, creating a sense of scale and industrial activity.

# Partnering for progress

We are profoundly obligated to sustain our world. To design and build, to nurture and protect. Progress happens when innovation and stewardship go hand in hand to protect the environment, people, and places. This is how we ensure that communities flourish while we safeguard natural environments for future generations.

# The faster, the better? The intersection of rapid delivery and responsibility

Global relationships and markets are shifting. Governments around the world are responding to an evolving geopolitical landscape and trying to figure out how to weather what some would describe as a storm. They've turned inward, enabling policies that support independence and drive economic growth.

In response, they're also shifting their regulatory landscape, easing bureaucracy to facilitate expedited project development. Critical minerals. Energy generation. The projects that build nations and strengthen internal supply chains. Governments are working to build at home quickly and reduce reliance on global markets.

As regulatory environments ease, responsibility shifts. While relaxed regulations may remove barriers to project approvals, they may inadvertently cause risk to the very places and people that policy is intended to protect.

But public expectations remain regardless of policy, as does the need to ensure that projects are planned, executed, and operated with respect for the communities in which we live and work. There's an obligation to develop projects that have long-lasting benefits for generations to come.

We have to build a future we can sustain. While we keep people-led design in our sights, ultimately, we must develop projects that make for thriving businesses and economies.

It's about balancing rapid delivery with responsibility.

At Hatch, we're staying the course with strategies that we know work. We're working alongside our clients, responding to these changing regulations by relying on the building blocks from design through execution, ensuring health and prosperity. We thrive on the complexity of challenges.

It is in our corporate mission. On the wall of every one of our offices. We are compelled to bring solutions to the world's challenges to build a better future for the environment, the people who live there, and the places they call home. That's positive change.

## Environment

Global expansion of the extractive and energy sectors has made development projects more visible, triggering the growing interest, demands, and assertiveness by host governments, communities, investors, and civil society, especially when there is perceived environmental risk.

All of these environmental considerations drive how we develop and deliver projects. We design with these realities in mind to mitigate risk in the planning stages and as we move into project development and operation, we help our clients respond when the unexpected crops up.

When Newmont Corporation identified an unexpected water management issue at their gold mine in Cajamarca, Peru, they responded expeditiously by reaching out to Hatch for our experienced advice. Together, we developed a proactive water management approach to protect local communities in a very short period of time without compromising the environment.

## People

Recent studies show that projects with structured early community engagement are 30% more likely to meet timelines and budget targets. A proactive approach helps prevent opposition, reduces delays, and strengthens relationships that are essential for long-term success.

Prosperity is more than economic growth; it's about creating enduring benefits for people, communities, and ecosystems. Early involvement helps projects become engines of inclusive development, ensuring that prosperity is shared and sustained. Metals and energy projects, when responsibly developed, play a vital role in this transformation—providing the essential resources the world needs while creating jobs, supporting local businesses, and investing in infrastructure, education, and health. These projects can be powerful catalysts for community upliftment.

The Wataynikaneyap Power Project in remote Canada is a shining example of the prosperity that can come from community-led project development. The largest Indigenous-led electricity project in Canadian history, its 1,800-kilometer transmission lines and 22 substations connect 17 remote First Nations communities to Ontario's electricity grid and eliminate the need for the

emissions-pumping diesel generators. With reliable power flowing, new schools, housing, and medical facilities are now viable and there's opportunity for growing industry in the region. Positive change like this provides hope and prosperity for today's people and for generations to come.

## Places

Good design and execution has the power to transform ordinary places into great places that people can love, attracting investment and empowering a positive community.

We bring vision with an implementation mindset. We collaborate to shape shared visions that are responsive, relevant, buildable, and pragmatically innovative. Our approaches draw from a deep understanding of place, how communities adapt to change, seeing strategic opportunities, and delivering solutions that are local, sustainable, and appropriate.

When done right, communities thrive, now and into the future. Delivering infrastructure that enables a healthier, more sustainable and fulfilling future starts with creating a vision we can build together. We align stakeholders in communities with regional authorities, governments, and financiers around a common implementable future.

In the past 25 years, Sound Transit has springboarded from a small transit corridor to an expansive transportation network that, in 2024, carried a total of 41.7 million passengers and averaged more than 134,000 weekday riders. It's hard to find a corner or corridor of Sound Transit's network that Hatch hasn't touched. We've helped write technical specifications for procuring vehicles, supported contract negotiations, and overseen all design reviews, manufacturing inspections, and on-site testing. And we've even supported Sound Transit's Sounder commuter rail, managing locomotive overhaul programs and performing equipment valuations.

The landscape of the Puget Sound area is forever changed, with people at the forefront.

## A vision for the future

As the world navigates a new era of geopolitical and economic transformation, the imperative to build responsibly has never been clearer. The projects we undertake today must do more than deliver resources—they must uplift communities, protect ecosystems, and create enduring value for generations. At Hatch, we are committed to leading with integrity, innovation, and collaboration. We design with purpose, execute with precision, and partner with clients to turn complexity into opportunity.

We cannot only talk about the future—we have to build it. Strong communities. Bright futures. Rich, biodiverse environments—all things that lead to us calling a place home. It's our collective legacy.

# Yanacocha Water Transition Projects

## A model for sustainable mine closure

Yanacocha is a gold mine located north of the city of Cajamarca in Peru. Owned by Newmont Corporation, the mine has played a significant role in the economic development of the region since its inception in 1993.

In 2021, Newmont needed a different water management treatment solution to handle acidic flows on site during an emergency situation. With little time to act, Newmont turned to Hatch to partner on an urgent response.

**42** KM  
pipeline





**A**t its peak of operation, Yanacocha was the second largest gold mine in the world and quickly rose to prominence as one of the most productive gold mines in South America. More than 40 million ounces of gold have been produced to date.

After years of operation, the mine is reaching its end of life and is transitioning toward closure and reclamation. However, Newmont is still looking for opportunities to extract minerals throughout the transition. One such opportunity is injection leaching, which could extend operations.

Gold and other minerals are extracted from leach pads of crushed rock. As the pads at Yanacocha began reaching end of life, the water chemistry in the pads changed, and as a result, the water from the pads turned acidic. Unusually heavy rainy seasons with the acidification of some pads, resulted in Newmont needing to find water treatment and management solutions. Newmont responded to these changing conditions by reaching out to Hatch for our expertise in water treatment to protect the people and communities downstream.

**\$2B**  
invested

During the dry season, Yanacocha stores water and gradually releases it into local watersheds. Thousands of people in the local towns and cities rely on this water and with this in mind Hatch quickly engaged with the Yanacocha site team. Together, we found a solution to staunch the flow of acidic water and developed a treatment process for future prevention.

The project moved from conceptual design to construction and commissioning in just over a year with 15 process options developed, reviewed, and evaluated. In the short term, the focus was on adding capacity for treating acid flows from different areas, repurposing and refurbishing existing idle equipment, and adding new equipment. The solution: a site-wide water flow rebalancing strategy to manage acid flow and the on-site disposal of sludge. This ensured the treatment process itself remained environmentally compliant.

We modified three out-of-commission water treatment plants to treat highly acidic water and installed 42 kilometers of pipelines, with plant flow capacities of 1,500 cubic meters per hour.

### The details

The execution of detailed engineering began immediately upon the selection of the process. We engaged resources from four of our offices in North and South America and ramped up to more than 40 engineers and designers in one month to support the engineering effort, starting with the design, specification, and procurement of long lead equipment, such as pumps, new clarifier internals, electrical equipment, and pipeline materials.

During the construction phase, Newmont, being conscious of the local communities, requested we specifically develop the construction packages to fit the capabilities and capacities of the local contractors.

This project faced several challenges due to its proximity to the production area, requiring detailed planning to minimize operational disruptions. Demolition had to be carefully coordinated to avoid impacting adjacent operations. Several design changes were made during engineering and construction to accelerate equipment delivery amid COVID-19-related shortages.

Newmont supported us at every step, providing site information and documentation, valuable insight on the facility and status of the existing equipment, all while approving engineering deliverables quickly. Despite the aggressive project schedule, the integrated team met all project milestones within a compressed eight-month schedule.



**1,500**  
**m<sup>3</sup>/hr**  
plant flow  
capacities

A defining factor in the project's success is how the team prioritized problem-solving over process. From the initial urgent request to the COVID-19 pandemic, nothing about the Yanacocha mine project was conventional. By focusing on quick adaptation, effective communication, and going the extra mile to meet the demanding schedule in a brownfield environment, we established ourselves as a trusted and vested partner.

It's been four years since the initial urgent request came from Newmont. One very complex conceptual project has evolved into a series of three major projects from conceptual design through detail engineering and construction support. The success of each project has strengthened the relationship between Hatch and Newmont.

With US\$2 billion invested, the Yanacocha site now has a proactive water management approach. Our emergency interventions have laid the groundwork for the future of the mine and enabled it to transition toward closure with integrity.

And downstream, clean water continues to flow from the Yanacocha stores to the communities and people who need it.

# Wataynikaneyap Power Transmission Project

## Uplifting and empowering communities for generations to come

In Indigenous teachings, decisions are often made with the next seven generations in mind. The Wataynikaneyap Power Transmission Project embodies this principle fully. At its heart, it's about more than electricity. It's about energy sovereignty.

Wataynikaneyap means “line that brings light” in Anishiniimowin. Born from the vision of 24 First Nations, who partnered for the betterment of 17 communities, came the construction of 1,800-kilometer transmission lines that would power some of Canada’s most remote areas with clean, reliable energy. Acting as Owner’s Engineer, Hatch played a critical role, ensuring the success of the project.

*Hatch provided their professional expertise and support to Wataynikaneyap, which enabled the vision of our People to build the infrastructure that connects remote First Nations to clean, reliable power. This is a success story of one of the largest Indigenous-led projects in Canada. Miigwetch to Hatch for being our eyes and ears on this project.*

—Margaret Kenequanash,  
CEO, Wataynikaneyap Power



**1,800** KM  
transmission  
lines

**22**  
substations

**A**cross northern Ontario in the late 1990s, the homes, schools, and businesses of more than 18,000 people were at the mercy of rolling power outages from costly, unreliable diesel generators. The Independent Electricity System Operator (IESO) estimated cost of diesel generation in Ontario's remote First Nations at C\$90 million per year. But the community cost was far steeper, with unreliable power leading to school closures, food spoilage, constraints on construction of new homes and facilities, and limited access to medical care.

By 2009, the energy forecast map of Ontario's IESO indicated that there were no plans to service their Homelands. First Nations leadership stepped in to take control of their communities' energy futures. They gave the original Central Corridor Energy Group the mandate to pursue the planning and development of an electrical transmission line, owned by the First Nations, to connect 10 communities to the provincial electricity grid. The Wataynikaneyap Power Transmission Project is a direct and powerful realization of the vision set forth in the resolution. And it has sent ripples through the province's energy industry, forever altering how energy infrastructure is built in the province.

Wataynikaneyap is the largest Indigenous-led electricity project in Canadian history. Its 1,800-kilometer transmission lines and 22 substations connect 15 remote First Nations communities to Ontario's power grid and eliminate the need for the emissions-intensive diesel generators powering their communities. Ultimately, 17 communities will be connected.

In 2012, the 24 First Nations communities that originally came together negotiated a 51% ownership stake in the project, with the remaining 49% held by Fortis Inc. and other private investors. In a landmark agreement that sets a new precedent for Indigenous participation in energy infrastructure, the 24 First Nations communities have established a pathway for full ownership of the transmission line within 25 years—ensuring long-term control, equity, and economic empowerment supported by their partner.

*The Wataynikaneyap Power Project is a huge accomplishment for all 24 First Nations majority owners of the transmission system. We received our mandate from the Chiefs—bring clean, reliable power to the First Nations, and maintain ownership of any infrastructure on the Homelands. And we delivered.*

*The transmission system will improve quality of life and address the immediate needs of the communities.*

*Many parties needed to work together to make this happen. Hatch was an important part of the development and construction of the line. Miigwetch to Hatch for their expertise, support, and respect throughout.*

**—Frank Mckay, Wataynikaneyap Power General Partnership Board Chair**

First Nations leadership established Guiding Principles that set out expectations to ensure Indigenous protocols, rights, and ways of life were part of every aspect of the project's requirements. At Hatch, we were honored to be chosen as Owner's Engineer and trusted to

uphold these Principles with all parties working on the project. In parallel, we supported the creation and ongoing monitoring of Indigenous participation requirements.

We worked closely with Wataynikaneyap Power to develop the strategy for successful execution of the project. This included detailed contracting and risk management plans to safely navigate complex project challenges while also achieving the project's priority objectives in a cost-effective manner. We established technical specifications and requirements for the design and materials that considered the project's intricate logistical hurdles. We collaborated to establish detailed construction requirements and expectations, ensuring safe execution while fully respecting First Nations' communication protocols and environmental considerations.

To manage such a large scope, elaborate change control procedures, with hundreds of pages of pricing schedules, ensured that route adjustments and other changes were cost efficient and had minimal impact on the overall schedule. We also supported Wataynikaneyap Power in defining the commercial terms and conditions to ensure risks are reasonably mitigated.

The vast expanse of this project, coupled with the inaccessibility of these remote areas, required an intricate construction strategy. More than half of the 1,800-kilometer lines and 16 of the 22 substations were only accessible during winter when communities and First Nations members could build ice roads over land, frozen rivers, and lakes. What would normally be 12 months of

work was compressed into short winter periods of mere weeks. The project workforce increased from a few hundred to 1,400 workers during the winter months to maximize the work completed in such short seasonal windows. Materials planning was crucial to coordinate supply transport a year in advance of each construction season.

As construction commenced, the World Health Organization officially declared COVID-19 a global pandemic. Factory tests and verifications for equipment designs screeched to a halt and concerns grew over the number of workers traveling in and out of the First Nations communities that had limited medical resources.

Project leaders, First Nations representatives, public health officials, Hatch and the EPC contractor came together to create a comprehensive COVID-19 management plan—deeming the delivery of reliable power to the 17 remote communities as a critical and essential service. In response, the Hatch team created new tools and processes to enable remote testing and verification of equipment designs and provided on-the-ground support

to monitor contractor compliance with the new COVID-19 management plan and protocols. The management plan itself was revised multiple times as COVID-19 evolved over multiple years.

Every kilometer of transmission lines was built to code and to community expectations. By bridging our technical expertise with the communities' shared vision, the nearly C\$2-billion project, covering a largely unknown landmass nearly the size of Germany, reached completion despite COVID-19 and large forest fires.

The new transmission system eliminates an estimated 6.6 million tons of greenhouse gas emissions, the equivalent to taking 35,000 cars off the road. But more than that, the line brings new opportunities to the First Nations communities and has resulted in a new era of energy infrastructure development in Ontario. Hydro One, and other energy utilities, have made an official policy to offer First Nations a 50% equity stake in all new transmission lines valued over C\$100 million. And IESO, whose forecast map set Wataynikaneyap in motion in 2009, has set aside a dedicated fund for northern Ontario energy projects.

## A tangible legacy

Lighting the way for seven generations and beyond, this is more than a power transmission project. It's a lifeline. A symbol of what's possible when technical excellence meets cultural respect. And a hopeful future for generations who will grow up in communities that are connected and empowered.

17

First Nations communities



# Sound Transit's System Expansion

## Changing the fabric of the Puget Sound region

From a small streetcar corridor to a first-of-its-kind system over Lake Washington's I-90 floating bridge, it's impossible to travel around the Puget Sound region without seeing Hatch's engineering excellence at work.

Since 1998, we've been trusted partners of Sound Transit, metropolitan Seattle's public transit agency. The outcomes of our partnership have set the region up for success for decades to come.

**25**  
YEAR  
partnership

**41.7M**  
passengers



In the late 1990s, Sound Transit had a vision for Seattle's public transit system. They brought on Hatch (then LTK Engineering) to develop a streetcar line in Tacoma, known today as the T Line, to help alleviate traffic congestion in the area.

We led every aspect of the original design and engineering for the T Line, and returned years later to help extend the line, modernize the maintenance facility, and expand its yard capacity in the process. But the work didn't stop there.

The T Line laid the groundwork for the region's broader transit future, and Sound Transit knew they needed Hatch's expertise to ensure success. What springboarded from that first small transit corridor would launch a 25-year partnership and change the landscape of transit in the Puget Sound area forever.

On the heels of the T Line's success, Sound Transit turned its attention to improving transportation in central Seattle, but that was a more complicated task. The Downtown Seattle Transit Tunnel (DSTT) was originally designed for buses and trains. The platform heights and systems for stray current mitigation and track isolation needed to be rebuilt to accommodate modern low-floor light rail vehicles (LRVs), enabling level boarding for improved rider accessibility.

We designed and engineered corrosion control, communications, rail signal, and traction power engineering systems, and led vehicle specification and commissioning. All the while, we ensured that the new and repurposed infrastructure adhered to the region's rigorous safety and performance standards.

With LRVs now on the move through central Seattle, Sound Transit knew that connecting the surrounding communities was the next logical priority.

We supported expansion of the 1 Line connecting to SeaTac Airport south of downtown Seattle, then north to the University of Washington, Northgate, and Lynnwood. Then, we worked to connect communities east of Lake Washington with the 2 Line, starting in Bellevue and extending northwest to Downtown Richmond. In total, this represents more than 40 miles of track, serving an average of 80,000 weekday riders.

The 1 and 2 Lines needed to be linked via the I-90 floating bridge over Lake Washington, posing another unprecedented challenge. To connect the lines along the bridge, we had to reimagine the design and installation of the overhead contact system (OCS), which delivers electrical power to vehicles on the line.

The floating bridge can shift up to 7 feet laterally and can rise and fall several feet as lake levels change. To accommodate this type of dynamic movement, we designed a first-of-its-kind expansion joint to safely deliver power to the trains moving across the bridge.



**134,000**  
weekday  
riders



The Seattle region has unique constraints such as seismic vibration limits at the University of Washington and electromagnetic interference thresholds along the track. We implemented innovative solutions to meet these strict requirements.

From a small streetcar line to the procurement of new LRVs, Sound Transit has trusted our expertise at every stage. We supported the design, construction inspection, testing and commissioning delivery of the original 62 Kinki Sharyo cars on the Link 1 Line, and since 2016, we've provided the same project support for more than 160 new Siemens LRVs, ensuring every component, from propulsion systems to signage, meets operational needs.

It's hard to find a corner or corridor of Sound Transit's now expansive transit network that Hatch hasn't touched. We've helped write technical specifications for procuring vehicles, supported contract negotiations, and overseen all design reviews, manufacturing inspections, and on-site testing. We've supported Sound Transit's Sounder commuter rail, managing locomotive overhaul programs and performing equipment valuations.

In 2024, Sound Transit services carried a total of 41.7 million passengers and averaged more than 134,000 weekday riders, all of whom have witnessed Hatch's engineering excellence in action, whether they know it or not.

From concept planning to boots-on-the-ground testing, we remain Sound Transit's partner of choice and an embedded resource in their mission to deliver sustainable and affordable transit for their growing region—a mission that isn't focused solely on infrastructure, but on connecting people, building communities, and delivering reliable, accessible transit solutions.

# HATCH

## About us

Whatever our clients envision, our professionals can design and build. With seven decades of business and technical experience in the mining, infrastructure, and energy 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 rely upon our 11,000 staff with experience in more than 150 countries to challenge the status quo and create positive change for our clients, our employees, and the communities we serve.

[hatch.com](https://hatch.com)



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## Performance Innovations 2025

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