



# Base & Precious Metals Center of Excellence



The world's largest mining producers continue to look for the best ways to produce and deliver copper safely and responsibly, with the minimum disruption to local communities and the environment.

Our Base & Precious Metals Center of Excellence in Santiago, Chile assists our customers by applying the latest technologies and innovations to the mining process in order to reduce water and energy consumption, preserve local supplies of these elements, and achieve maximum efficiency and productivity.

Bechtel's technical excellence in the base and precious metals field is demonstrated by the many studies and projects which have led to successful operating plants. Our proven ability to consistently provide reliable cost estimates and completion schedules gives our customers a sound basis for investment decisions regarding project feasibility, financing, and production scheduling.



## Expertise and Experience

Our global base and precious metals industry experience has allowed our experts to acquire a broad range of knowledge in the design and construction of minerals processing facilities, and with remarkable achievements specially for copper concentrators.

The team develops upstream solutions from conceptual studies to execution by combining best practices, leading technology with innovation, new sustainable processing facilities and supporting mining infrastructure, allowing Bechtel to provide our customers with pit-to-port solutions, regardless of the logistical challenges or locations.

We partner to deliver:

- Rapid ability to benchmark the project on multiple fronts
- State-of-the-art design in process flowsheets and equipment selection
- Easy access to a team of specialists conversant with state-of-the-art technology expertise and relationships with industry leaders in technology supply and technology-based equipment and systems
- Knowledge bank of technical and market information, and historical data of worldwide projects to support project activities
- Ability to complete trade-off and conceptual studies by drawing from Bechtel's design and construction database of copper concentrators.

Average  
**3 months**  
Ramp-up to nameplate capacity

Built  
**1mtpd**  
Cumulative ore processing capability globally

Built  
**60%**  
Global capacity over past 30 years

Delivered  
**42**  
major copper projects around the world

Over  
**230**  
studies from concept to startup



## Copper – the key to energy transition and electromobility

Copper has emerged as one of the most important elements underpinning the world's transition to cleaner energy and electromobility. It's crucial to technological advancement, digital connectivity and electricity transmission, powering the networks that enable modern society. As ore reserves deplete and ore grades decline, Bechtel is supporting our customers with designing and building the critical process infrastructure that will secure the supply of copper for decades to come.

From standard concentrator designs, to integrated concentrator, water, energy, pipeline and port solutions, our customers have access to our industry experts with experience in plant engineering, optimisation, constructability and operations. Together, Bechtel and our customers have built the majority of the western world's copper concentrators, including 10 in the past 15 years.

This extensive history has enhanced our ability to accurately estimate a project's costs and schedule, and to successfully implement aggressive programs for our customers, covering all aspects of project delivery – prefeasibility and feasibility studies, front-end engineering, project/construction management and direct hire construction.

Our team of industry recognized engineers, specialists, and consultants has wide-ranging experience in open pit, underground and block cave mining; construction; bulk materials handling; copper, gold and molybdenum processing; pipelines; pumping stations; desalination plants; transmission lines; and mine to port infrastructure.

### Cutting-Edge Concentrators

Over the last 25 years, concentrator capacity has consistently risen from 15,000 to 250,000 tpd and has been accompanied by an increase in unit equipment sizes. Bechtel is the industry leader in the design and construction of these high-capacity plants, and in expanding existing facilities across projects executed in Peru, Chile, Indonesia, and Australia.

A leading designer and constructor of high-capacity plants, Bechtel specialises in the installation of large diameter autogenous and semi-autogenous (SAG) grinding mills. The copper concentrator projects that we have built for our customers total a cumulative ore processing capability in excess of 1 mtpd. Best practices and lessons learned are incorporated from current projects in the design of copper concentrators.

## Gold – still the ultimate global standard

Gold remains one of the most valuable and versatile minerals mined on earth. It has a dual role as both a commodity and a currency. For centuries, it has served as a means of exchange and today it is still considered an important asset held by governments around the world as a foreign exchange reserve. As a commodity, it serves multiple purposes from jewellery to consumer electronics and it plays a role in multiple industries from medicine to dentistry and aerospace.

We have helped our customers to design, engineer, and build some of the world's largest and most challenging mines, utilizing technologies such as heap leaching, carbon-in-leach, carbon-in-pulp, roasting, bio-oxidation and pressure oxidation processing.

For more than 40 years, we have partnered with our customers on numerous gold and gold/copper projects in North and South America, Australia and the Middle East.

### A Focus on Sustainable Solutions

Bechtel applies sustainable development principles to all its projects worldwide and uses established approaches for protecting and conserving natural resources, enhancing eco-efficiency, minimizing waste, respecting the community, consulting with project stakeholders, hiring local people, and developing local businesses and materials.

## Value for our Customers

Innovative talent and technology	Cost effective and robust technical solutions
Cutting edge execution	Industry leading construction productivity
Capital efficiency	Value creation culture, preservation of plant performance, compact plant design
Customer-focused teams	Working closely with our customers to enhance business cases and apply best practices
Integrated EPC execution	Industry best delivery and plant ramp-up schedules
Energy efficiency and water recovery	Evaluating comminution technologies and circuit energy efficiency, together with optimization of water recovery

### Contact

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