




## Capability Statement




Process Engineering | Feasibility Studies | Client Representation | EPCM | Project Management



Zenito is a **multidisciplinary engineering consultancy** specialising in the design of **mineral processing plants** and associated **infrastructure**. Every project is different, and Zenito's **boutique engineering team** lends itself to flexible and efficient working. This means that specific client requirements can be delivered **on time** and **on budget**, while retaining **safety** and **quality**.

Zenito is **independent**. By having no affiliations with any other consultancies, equipment suppliers, or laboratories, we can tailor our technical solutions to whatever is the most advantageous for each project, and satisfies our client's requirements.





## Who we are

Zenito is a privately owned, independent multi-disciplinary consultancy, with considerable international experience at every stage of project development.

The Zenito team includes metallurgy/process, mechanical, civil/structural, electrical instrumentation & control engineers and CAD designers supported by project controls, procurement, and site engineers/supervisors, and led by professional project managers.

Zenito specialises in all phases of project delivery, from scoping, preliminary and definitive feasibility studies, through to basic and detailed engineering execution as an Engineering, Procurement and Construction Management (EPCM) contractor.

Zenito acts as client's representative to monitor and report on all aspects of a mining project during the project life cycle including metallurgy, process plants and infrastructure.

Zenito produces practical and cost effective solutions to optimise a project's economic viability, for greenfield and brownfield projects. A key Zenito strength is our large network of experienced professionals based in the UK, and around the world, who provide technical and management expertise for our clients' minerals projects.



## Key People

### Joe Russell — Managing Director

Joe is a Chartered Mechanical Engineer and qualified Project Manager with over eighteen years industrial experience as an engineering manager, project manager, project engineer and design engineer in Australia and on global projects while based in the UK.

His experience covers a variety of minerals including gold, copper, uranium, magnesium, and iron ore. His processing and plant experience includes crushing, milling, heap leach, leach CIP/CIL, bio-oxidation, flotation, dewatering, IX/SX, air/water plant services and cooling systems, wet and dry materials handling (slurry pumping, conveying, stockpiles, stacker reclaimers) and ore/product logistics (truck, train and shipping).

His mineral processing project experience is comprehensive covering project management, project engineering, detailed mechanical engineering, scheduling, risk, quality and cost control. He has been involved in all phases of project execution from scoping studies through to project execution via EPCM.

### Chris Stinton — Principal Process Engineer

Chris is a Chartered Mineral Process Engineer and has been practising mineral processing for over 35 years, with experience that includes mineral projects in Africa, Asia, Europe and America. He has successfully completed many studies for clients all around the world, including initial concept studies, pre-feasibility studies, and definitive feasibility studies. He is experienced in the full lifecycle of process plant design from conceptual through to basic and detail design. He has significant experience specifying and managing metallurgical test work programmes, and is an experienced commissioning manager.

Chris is a Qualified Person (or Competent Person, depending on the jurisdiction) according to the National Instrument 43-101 Technical Reports, JORC compliant reports, and Competent Persons/Mineral Expert under UK securities law, and has worked on due diligence for various banks considering financing mining projects.

### Zenito Team

Chris and Joe lead a dedicated team of Discipline Process Plant Engineers, Project Services Professionals, CAD Designers and Construction Management Site Specialists, all with extensive international experience in the minerals processing industry.



## | What we do

Zenito specialises in processing and infrastructure in the minerals industry, delivering professional services to companies of all sizes, across all segments of the minerals sector.

**Advisory** — Zenito's highly experienced team provides strategic advice and client services for various commodity mandates across a broad range of minerals, drawing from its deep experience built from years assisting mining companies of all sizes.

**Due Diligence** — Due diligence and competent person's assignments are carried out bringing together a broad base of expert personnel who have experience of different operations and processes, and can combine specialist knowledge to produce comprehensive assessments identifying gaps or fatal flaws.

**Feasibility Studies** — Zenito leads feasibility studies from scoping through to definitive studies for the minerals industry. Front End Engineering Design (FEED) packages are also completed. The inhouse team covers all aspects of processing and infrastructure, while subconsultants are engaged for geology, mining, and environmental work.

**Engineering and Execution** — Zenito engineering and procurement teams design and manage construction of plant and infrastructure as EPCM contractors. Basic and detailed engineering phases are project managed in the home office, before the site team is deployed to manage construction and commissioning activities internationally.

**Commissioning and Operational Support** — Plant audits, cyanide code compliance, plant optimisation and troubleshooting. Operating mines benefit from the project oriented approach of the specialist Zenito team.



## Zenito Capabilities

Zenito provides clients with value in the management and design process by clarifying their needs, challenging assumptions and developing solutions to achieve the highest level of design quality, sustainability and productivity.

Zenito is a multidisciplinary consultancy specialising in the process and infrastructure aspects of mining projects from concept through to commissioning and handover. This multidisciplinary nature leads to a well-rounded approach to project management and delivers an integrated system that works to the advantage of projects.

Zenito works closely with the client, together with specialists in geology mineralogy, geochemistry, mining, tailings disposal and environmental engineering, to provide the best process solution tailored to the specific requirements of the project and the client.

Zenito has a core group of full time process and mechanical engineers with experience in the development and evaluation of test work programmes, technical studies, flowsheet and plant design, process audits, plant debottlenecking and troubleshooting, and operations.

Where necessary, Zenito has access to a wide range of other engineering specialists through our network of subconsultants to ensure all disciplines are covered.

Zenito projects are supported by high quality certified Project Managers backed up by an experienced in-house Engineering Team, in order to provide innovative and cost effective solutions to your engineering problems. This Engineering Team has expertise across a range of engineering and related disciplines, including:

- Process Engineering and Metallurgy
- Project Engineering
- Mechanical Engineering
- Equipment Engineering
- Materials Handling Engineering
- Piping Engineering
- Civil Engineering
- Structural Engineering
- Electrical, Instrumentation & Controls Engineering
- Cost Estimating and Financial Modelling
- Project Management
- Project Controls
- Procurement
- Construction Management
- Commissioning

## Metallurgy and Process Engineering

The **Process Engineering and Metallurgy** team consists of chemical and mineral process engineers experienced in the design of comminution, beneficiation, and hydrometallurgical process across a range of mineral commodities. Process engineering is always central to Zenito's project execution, and interrogation of the process design via option studies and trade off studies is always a key aspect of Zenito's design methodology. This allows identification of optimal solutions from both a technical and economic perspective.

Through their careers in the mineral processing industry, Zenito's process engineers have encountered a wide range of unit operations, including **crushing** using jaw, cone and gyratory crushers; **grinding** using ball mills, rod mills, SAG/AG mills, HPGR and vertical mills; **classification** using screens and hydrocyclones; **flotation**, tank **leaching** and heap leaching using acids, alkalis, and cyanide; **adsorption/desorption**; **magnetic separation** using high and low gradient/intensity separators; **gravity separation** through spirals, tables and centrifugal concentrators; **ore sorting**; **dewatering** via thickening and filtration.

Unit operations experience, knowledge and understanding is applied to flowsheet design and metallurgical review for a wide range of precious metals, base metals and industrial minerals, including:

- Gold
- Silver
- Copper
- Lead
- Zinc
- Rare Earths
- Iron Ore
- Nickel
- Cobalt
- Uranium
- Manganese
- Graphite
- Lithium
- Phosphate
- Potash
- Tin
- PGMs
- Vanadium





## Discipline Engineering

**Multi-disciplinary Engineering** team of qualified and experienced engineers.

The **Mechanical Equipment Engineering** team have a depth of knowledge in current processing technology, and lead the development of equipment specifications and plant layout.

Layout development is assisted by **Materials Handling Engineers**. Conveyors, chutes and platework are all designed for bulk materials handling systems.

The **Piping Engineering** team is experienced in fluid and slurry transport systems conforming to regional standards, and in producing piping specifications suitable for the required duties.

**Civil and Structural Engineers** are responsible for the design of structures such as building and equipment foundations, retaining walls, storage bins and heap leach pads. Infrastructure items such as roads and drainage systems are also designed by the team who are experienced in the implementation of international and regional design standards.

The design of electrical generation and distribution systems is undertaken by the **Electrical Engineering** team, which is familiar with both conventional and renewable sources of power.

**Instrumentation and Control Engineers** complete the design and selection of control, monitoring and automation technologies, as well as the implementation of communication networks.



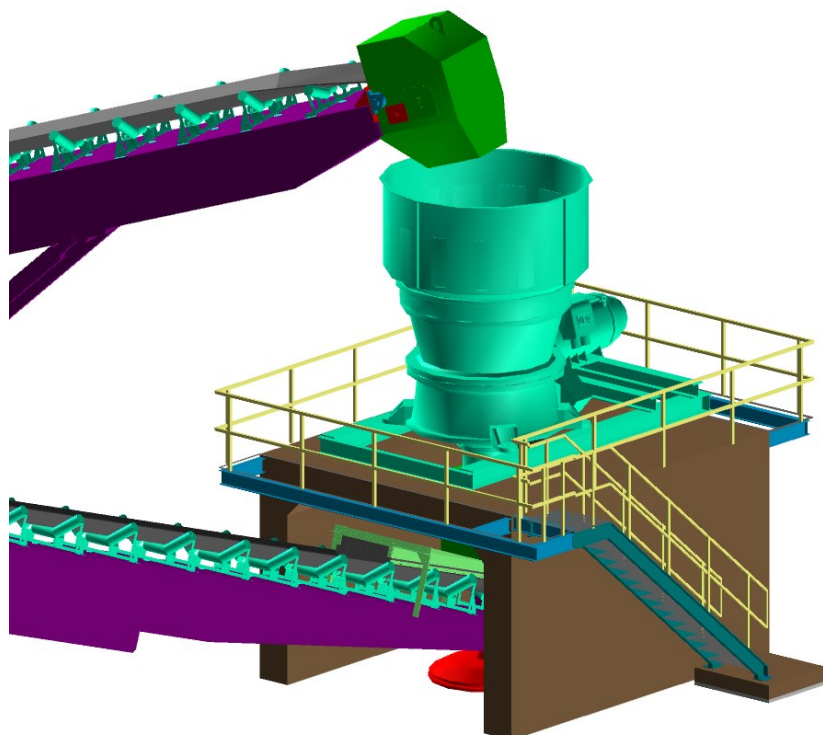
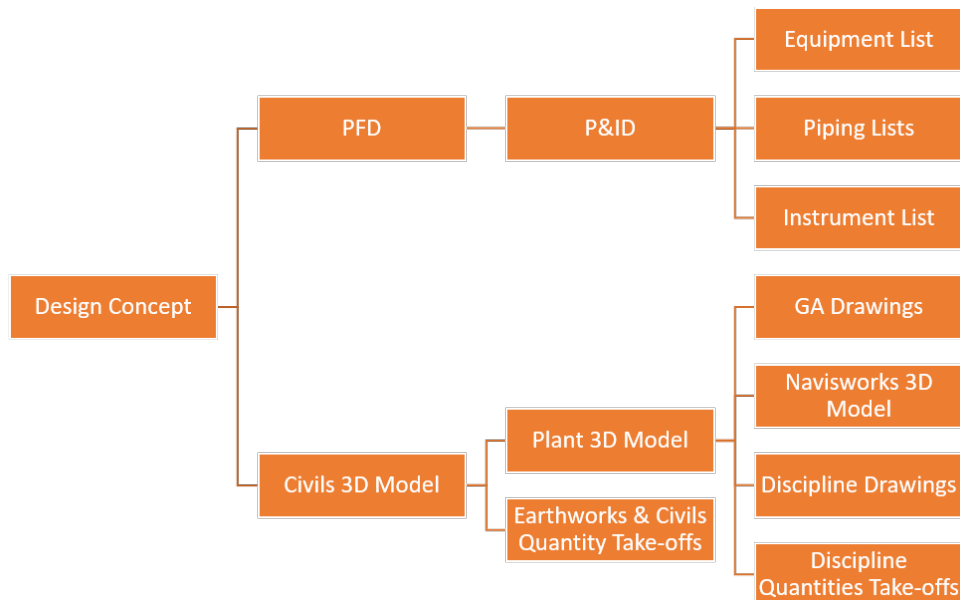


## 3D CAD Modelling & Drafting

Zenito use the Autodesk AutoCAD plant and infrastructure design packages to support design work.

- **AutoCAD and Plant 3D** — Multidisciplinary plant layout and spec driven piping.
- **Inventor** — Parametric modelling for equipment and platework design.
- **Civil 3D** — Topographic surfaces designed for plant layout, roads and civil works.
- **ReCap** — Reality Capture laser scan generated point clouds for brownfields plant.
- **Navisworks** — 3D multidisciplinary model viewer, clients review and fly-throughs.

The plant layout is developed in 3D, allowing for the production of general arrangement drawings and material take-offs to support bill of quantities estimation. Navisworks is used to compile 3D models for ease of client review.



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