



CAPABILITY STATEMENT

Engineering Services | Design and Drafting Services | Forensic Engineering | Asset Management

Ingenia
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Our Expertise

Ingenia is a customer focused consulting organisation which provides a range of integrated and complementary services to national and international clients. We offer Engineering and Asset Management services including; Project Management, Feasibility Studies, Engineering Design and Drafting, Forensic Engineering, and Advanced Engineering Analysis. We also provide machine risk assessments, safety management (including HAZOPs), and site access and code compliance audits.

We provide full project support from project initiation incorporating existing or new client requirements, feasibility studies, system layout and visualisation, site integration, component design and specification, and design simulation and evaluation. This links with our project delivery services in system layouts, project implementation, and handover of working solutions.

Our Vision

To be the preferred supplier of Engineering and Asset Solutions for local and international markets.

Our Mission

To deliver first-rate customer focused solutions, by employing class-leading expertise.

Our designs are your solutions! Its not just what we do, but how we do it. We don't do average!

Our Values

Honest – We do the right thing, every time.

Innovative – We're forward thinking to remain ahead of the pack.

Customer Focused – We put our clients first!

Reliable – We aim to deliver what we promise on time every time!

Outstanding – We don't do average!

Key Clients

We provide solutions to our clients using our wide range of industry experience in sectors such as food and beverages, packaging, rail, infrastructure, mining, ports, waste management, water, cement, construction, wool, and many others. Some of the organisations whom we are proud to call our clients include Adelaide Brighton Cement, Coopers Brewery, Lion Co, SCF Group, Lend Lease, Michell Wool, Obela, Orora, Primo Smallgoods, PAC, McMahon Services, ECI, Tank and Vessel Engineering, Santos, Shoal and Taylors Wines.

Ingenia provides a wide range of Engineering & Management Services focused on meeting our core values and client requirements. Ingenia offers customised services and solutions ranging from design through to complete turn key solutions.

Project Management / Project Engineering

Ingenia are leaders in Project Execution with experience in both Project Management and Engineering. We provide complete Project services from Planning stages to Evaluation and Testing. Our skills in this area include:

- Business case development and feasibility
- Project scheduling
- Best practice documentation
- Cost estimation and budgeting
- Tender management, response evaluation, and contract management
- Implementation and onsite contractor management including site safety
- Acceptance testing including handover documentation



Engineering Design And Drafting Services

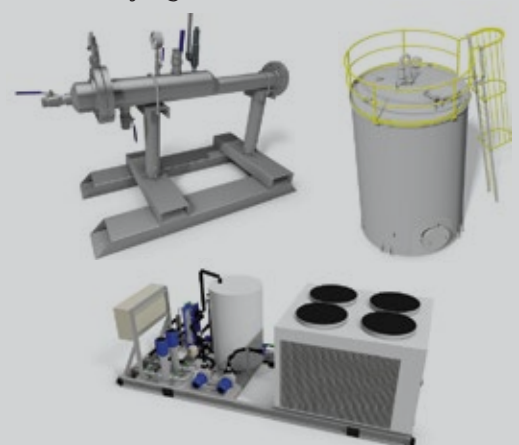
Our suite of design services provides organisations with confidence and assurance that all aspects of function, performance, maintainability and compliance have been considered. We pride ourselves on developing simple, practical designs that meet the clients needs whilst complying with relevant regulations and standards. We use our failure analysis and asset experience to improve the lifecycle of our designs.

We have experience and skills in the following Industries:

- Food and Beverage
- Manufacturing and Heavy Engineering
- Mechanical Design including Specialised Machine design
- Structural and Civil design
- Feasibility and Concept Studies
- Plant design, modifications and upgrades
- Safety Compliance and Risk Assessments
- Engineering Design, Certification, and Review to Australian Standards including:
 - Pressure Vessel design to AS1210
 - Tank Design including small or large scale tanks to API650 and AS1692
 - Pipe and pipeline design to AS4041
 - Lifting devices, and hoists to AS4991
 - Mobile platforms, stairways, and folding access ways to AS1657
 - Machine Safety to AS4024 and AS1755

Delivering to clients through the following skills:

- 3D and 2D Modelling
- General Engineering Drawing, through to Shop Drawings
- Design Compliance and Analysis Reports
- Design Review Meetings
- HAZOP and Risk Reporting
- Finite Element Analysis, including advanced nonlinear and corrosion analysis
- Site Surveying



Forensic Engineering

Ingenia provides comprehensive Forensic Engineering analyses to support clients who have suffered:

- A serious machine, plant or equipment failure
- Repeated failures of a component or machine

Our services include:

- Facilitated Failure Investigations
- Condition Assessment
- Engineering Analysis using techniques and tools including:
 - FMECA
 - Fault Tree
 - Five Whys
 - Root Cause Analysis (RCA)

We facilitate investigations to determine failure causes to prevent future failures and provide a basis for warranty and contractual discussions with the original part manufacturer.

Asset Management Services

Effective Asset Management is a key issue and imperative for most companies operating capital intensive facilities, infrastructure or critical plant and equipment.

Ingenia offers a range of Asset Management services :

- Asset Failure Investigation
- Reliability Centred Maintenance (RCM)
- Root Cause Analysis (RCA)
- Asset Management Systems:
 - Auditing and Review Services
 - Design and Selection
 - System Implementation including CMMS, EAM, and MRO

ISO 55000

Asset Management
System

Asset Portfolio

Maintenance
Plan

Lion Co — West End Brewery

Ingenia have been privileged to be involved in a number of projects over a number of areas at West End Brewery including:

- Brewhouse and Malt Handling Upgrades
- Machine Safety Upgrades
- Packaging machine upgrades (Cans, Bottles and Kegs)

Ingenia takes a project management role in the successful delivery of these projects for their entire lifecycle, from Business Case Development and scoping to Tender and Contractor Management, including site safety. Ingenia strives to use its Project Management expertise to ensure all objectives are delivered on time and on budget.



Caustic Storage Tank, WA

Full design of 30 metre diameter by 10 metre high API-650 chemical storage tank

A Tank Fabricator initially engaged Ingenia for the replacement of a self supporting roof for an existing chemical storage tank in Perth.

During the tank refurbishment process Ingenia performed further assessment of the existing tank and the decision was made to replace the entire existing shell and concrete ring beam footing. Ingenia completed a full design of the new tank including engineering calculations to API 650, tank jacking method certification, and civil design of the footings. Ingenia produced engineering documentation for client approval and a full set of shop drawings for fabrication.



Truck Stability Failure

The investigation and reporting on the failure and toppling of a truck whilst offloading product from a shipping container

Ingenia were contacted to attend site to assist with the investigation of a tipped trailer. Ingenia was requested to provide a verbal and written opinion on what were the likely contributing factors in the truck incident.

The discharge procedure of the tipping trailer was outlined, witness observations received, and the damaged trailer and tipped bulk solids container was inspected. From the provided and inspected details a fault tree based analysis of the failure was undertaken to determine the likely root cause of the fault.



Acid Rollers In A Wool Processing Plant

Improvements to increase the reliability of acid rollers in a wool processing plant

A client in the Wool Processing Sector had been suffering serious failures of their squeeze rollers in the acidification stage of their Carbonizing Plant.

The squeeze roller's function is to squeeze free moisture out from the wool during the cleaning process. The environment around this particular roller lead to a high rate of stress corrosion cracking. The new design of the roller incorporated replaceable stub ends.

The client and Ingenia are expecting an increase in life from weeks to at least three years which has very large operations and maintenance savings.



CMMS (Computerised Maintenance Management System) Implementation & Software Development

Install Asset Management system and deploy to Client

Ingenia were involved in the upgrade of previous CMMS to Mainpac system. Ingenia imported old data from their existing SQL Server database and configured the software platform to suit the client's requirements. Ingenia also developed custom KPI reports and supply ongoing support and training.

OUR TEAM



Daniel Halls General Manager

Qualifications: BE(Mech)Hons, AdvDipProjMgt, HAZOP Leader

Professional Experience: Daniel is a Mechanical Engineer with diverse experience ranging from Project Management to Detailed Engineering Design in sectors including Food and Beverage, Materials Handling, Processing and Industrial.

Key experience includes machine and process design, structural steelwork design, silo and hopper design, effluent treatment, pneumatic pumping, failure analysis, machine risk assessments, HAZOP Facilitation, and project tender and contractor management including site safety.

Leigh Whicker Business Development Manager

Qualifications: Ad Dip AgBus, MBA (ongoing)

Professional Experience: Leigh is an experienced business management and development professional with more than 20 years operational, technical and commercial experience in the agribusiness, energy, resources and defence sectors. This experience gained from global exposure to multiple industries has developed a keen eye for complex problem solving and an ability to understand various client's requirements. With a strong technical background, Leigh is able to provide clients with an informed first point of contact and create a seamless interface with Ingenia's engineering team.



Muralikumar Krishnaiyan Senior Structural Engineer

Qualifications: ME(Struct), RPEQ, CPEng, NER

Professional Experience: Muralikumar is a Structural Engineer with diverse experience ranging from FEED Engineering to Detailed Engineering Design in sectors including Oil & Gas, Industrial structures and Building & Nonbuilding structures.

Key experience includes, analysis and design of structures, seismic analysis, structural auditing, failure and pushover analysis, Civil Capital Works, and design certifications.

Graham Cutts Senior Civil Engineer

Qualifications: BE(Civil)

Professional Experience: Graham provides a wealth of experience in civil and structural engineering that has been obtained by working in the industry for over 40 years. His specialty is in the design, construction and drafting of public, commercial, industrial, institutional, residential and recreational buildings including the civil components to their landscapes. Key areas of expertise that his career has focused on are in educational facilities, having been involved in the design and documentation of a large number of schools both in the private and public sector. In regard to the industrial sector, he has spent considerable time in the planning, documenting, engineering and construction of fertilizer storage and precast manufacturing facilities and their landscapes.



Mohan Devsam Project Engineer

Qualifications: BE(Mech)Hons, AdvProjMgt

Professional Experience: A versatile mechanical engineer with broad experience across industry managing design, engineering, procurement, construction and project management, able to quickly align with the organizations strategy, vision and mission.

Australian qualified and experienced with adaptable skills and competencies essential for effective and efficient project execution including people skills to work as part of a team.

Simon Schulz Mechanical Engineer

Qualifications: BE(Mech)Hons, HAZOP Leader

Professional Experience: Simon is a Mechanical Engineer with diverse leadership experience. He has delivered successful projects whilst dealing directly with a varied range of clients within manufacturing, food and beverage, and product handling industries for the full life cycle of a project, from concept to installation.

Further experience includes scoping and tender documentation, project estimation, the developing concept designs, detailed design, production fabrication drawings, and on site engineering support during the installation and commissioning of projects.



Ben Wright Mechatronic Engineer

Qualifications: BE(Mechatronics)Hons, AdvanceMachineSafe

Professional Experience: Ben is a mechatronic engineer with a thorough understanding across mechanical and electrical fields. His passion is to improve efficiency and safety measures in new and existing machines.

He has experience in materials handling as well as project management, project engineering, onsite contractor management including site safety. Other key areas of expertise include machine design, safety of machines, machine risk assessments, and forensic engineering.

Mike Salter Technical Officer & Asset Consultant

Qualifications: Diploma of Mechanical Engineering Design Drafting (ongoing)

Professional Experience: Mike has a range of experience ranging from technical drafting to asset management. His experience includes CAD drafting using AutoCAD and Inventor, 3D component design, stress analysis, engineering and detailed construction drawings and site surveying.

Mike has assisted in the implementation of the Mainpac software for various clients, including requirements planning, physical implementation, construction of custom reports, and carrying out end user training.



MELYA KNIGHT
Administration Manager

LEAH CLIFFORD
Administration Assistant

We are driven by our desire to provide customers with superior service and agility, delivered by a dedicated and dynamic team of people.