



PRACTICAL®
ENGINEERING

CAPABILITY STATEMENT

ABOUT US

Practical Engineering Australia is a Brisbane - based mechanical, structural, and process engineering firm specialising in design, inspection, certification, project management and construction. Practical Engineering prides itself on having qualified and experienced engineers who are skilled at applying first principles of engineering to meet client needs. With over 20 years of experience, we have the ability to provide clients with creative and practical solutions.

Our Vision

Practical Engineering aims to improve the industry through creating and embracing evolving technology, promoting safer workplaces and lifting professional standards through ethical and sustainable engineering practises.

Our core values drive our company's culture

- **Accountability** - for the work we do, the decisions we make and their impact to the community
- **Integrity** - to act honestly, ethically and fairly to all our stakeholders
- **Respect** - for each other, our clients, our suppliers and most of all respect for the ability we have to make a difference.

Our mission is to leave a legacy to be proud of by securing tomorrow through sustainable engineering – Creative Thinking. Practical Solutions .

Quality, Health, Safety & Environment

Underpinning our vision and mission is a strong commitment to quality, health, safety, and the environment.

We sustain and continuously improve our quality culture by ensuring:

- Collaboration is at the core of everything we do
- Our people take the time to assess client needs and deliver a highly personalised service
- We create a climate of 'no surprises' by identifying problems early then solving them

Our ISO 9001 certified quality system and commitment to best practice, combined with the Practical Engineering Integrated Management System, aims to:

- Achieve zero harm so that everyone goes home from work without injury or illness
- Reduce the environmental impact of our business activities as well as assisting clients achieve their own sustainability goals
- Meet all legislative, regulatory and ISO 14001 regulatory requirements



Seqwater Wivenhoe Dam 79t Portal Crane

Practical Engineering was contracted by Seqwater in June 2015 to undertake the Major Structural and Mechanical Refurbishment and Recertification of the Wivenhoe Dam 79t portal crane.

This project required critical planning and astute time management skills to guarantee completion for Queensland's 'wet' season.

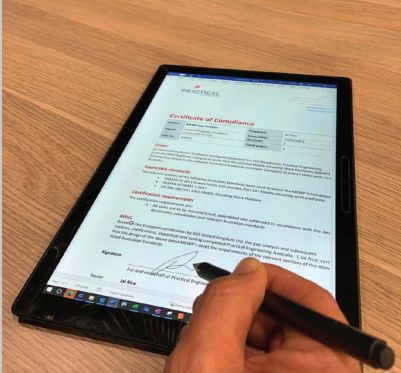
To ensure the refurbishment met Australian Standards, Practical Engineering created a detailed report outlining the mechanical, structural and electrical works necessary for compliance.



RPEQ CERTIFICATION

RPEQ certification is the process by which a Registered Professional Engineer of Queensland (RPEQ) provides, endorses or approves a professional engineering service. Typically this includes review and approval of designs, to ensure safety and compliance alongside mitigating risk for our clients, their equipment and the public.

Our RPEQ engineers are backed by extensive experience and commitment to delivering high quality engineering services to our clients.



MECHANICAL, STRUCTURAL & PROCESS DESIGN

Practical Engineering offers a broad range of design experience across many industry sectors for complex structures, bespoke mechanical and process solutions and concept design including feasibility studies. Practical Engineering maximise collaboration with clients to create a flexible staged design pathway which meets the project needs. We are proud of our reputation for providing practical solutions, exceeding client expectation, which reduces capital, and maintenance costs, while maintaining and improving your system safety performance and efficiency.

The Practical Engineering team's qualifications include: CPEng, NER, RPEQ, CPPM

DESIGN & CONSTRUCT

Practical Engineering has extensive knowledge and experience in project management and the execution of multidisciplinary contracts across the utilities, oil & gas and industrial sectors. Practical Engineering's project management life cycle structure can meet your requirements from project inception through to handover including complete design services, project & construction management, on site construction works and commissioning.

Practical Engineering has qualified project managers and work, health and safety officers who are appointed to every design and construct project ensuring the safe execution and on time delivery of your project works.



INSPECTION, TESTING & CERTIFICATION

Inspection and testing is a critical aspect of ascertaining: how to extend an assets design life, determine modes of failure and overall condition for continued use. Practical Engineering pride ourselves on the experience we have to know when to look past the obvious. Understanding our clients' assets is imperative to their continued safety, cost and functionality.

Practical Engineering's real-world application of Australian and International Standards allows us to provide efficient inspection, testing and commissioning services. We excel in performing inspection, testing and commissioning of clients' innovative ideas and equipment which includes but is not limited to, prototypes, pressure vessels and pipework, lifting devices, cranes, concrete placing equipment and MEWPS.

PRESSURE VESSEL DESIGN & VERIFICATION

Practical Engineering excels in the design of pressure vessels and has a long list of design and manufacture success stories. We provide design and verification services, with RPEQ certification of all issued pressure vessel designs to Australian or International Standards as required. Practical Engineering's ISO 9001 accreditation allows us to provide in house design and independent design verification of the clients pressure vessels therefore reducing risk and cost.

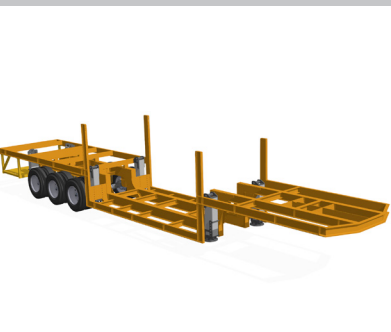
- We offer you a range of services for the safe use of pressure vessels. These include:
- Compliance assessment of existing storage facilities
 - Hazard Level Assessment
 - Pressure Vessel Design
 - Storage facility design
 - Tank Design
 - Tank Storage Facility Modifications
 - Transportable Vessel Design



LIGHT & HEAVY VEHICLE APPROVAL

Practical Engineering's Queensland Transport Approved Inspector provides consultancy services for light and heavy vehicle modifications and ADR compliance including inspection certification and GVM upgrades. Our team provides engineered solutions to your vehicle requirements with verification of components to ensure any modifications will meet the applicable safety standards and Queensland Transport and Main Roads regulations.

- We specialise in applying Standards and Legislations to:
- Driveline upgrades
 - Customised heavy vehicle and trailer designs
 - Commercial light vehicle modifications



CAPABILITIES



RTG-65 Dual Crane Design and Commissioning

Practical Engineering was engaged to design two remote controlled rubber tyred gantry cranes with a single lift maximum rated capacity (MRC) of 65t and incorporating 5t auxiliary hoists. These cranes were commissioned for the \$300 million upgrade to the M80 Ring Road in Victoria to widen the EJ Whitten Bridge from three lanes to five lanes in each direction.

The cranes have since been used by another of Practical Engineering's clients on the Lachlan Bridge Project in Macquarie Park, NSW (pictured) where Practical Engineering was responsible for the recommissioning of the cranes and the development and safe execution of the associated lifts plans.

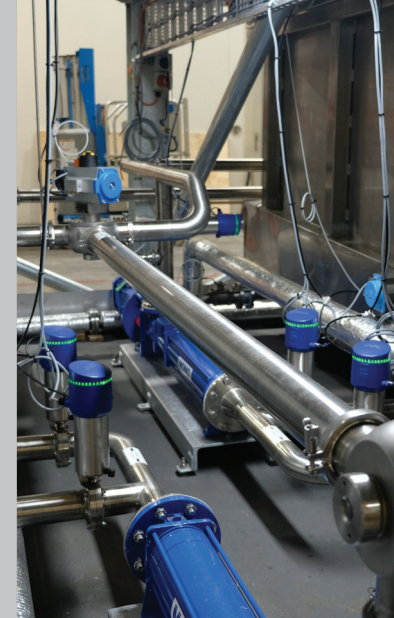
PROJECT OVERVIEW

Boiler Stack Condition Assessment

Nestle engaged Practical Engineering to undertake an external and internal condition assessment of their 40m boiler stack. The project combined confined spaces and working at heights. Careful planning, safety documentation, high risk work qualifications and experience meant that Practical Engineering were safely able to clean the stack prior to completing the 100% visual inspection, NDT and subsequent engineering assessment of its current condition.

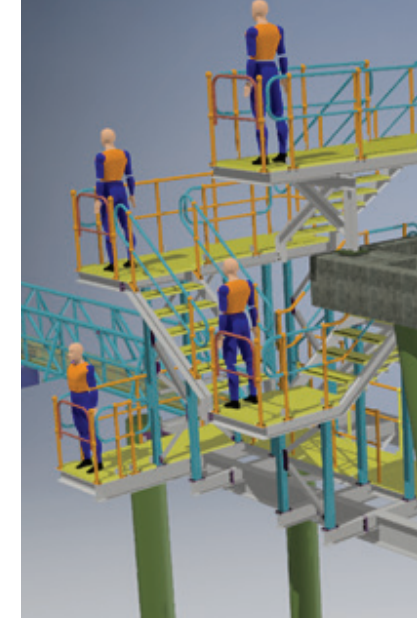
Honey Heating Room

Practical Engineering completed the design and construct of new hot rooms capable of processing 70t of honey, six new jacketed blending tanks, gas fired heating system and all product and hot water piping and pigging systems, commissioned February 2021.



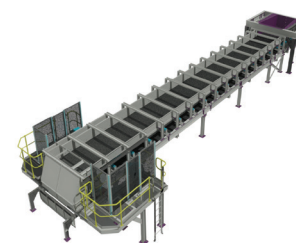
Wharf Design

Practical Engineering undertook the inspection and condition assessment of marine and mechanical structures, detailed design of replacement wharfing access systems and design of a replacement 500 t/hr sand conveyor. Our designs were partnered with three-dimensional scan point cloud data to ensure design integration with existing infrastructure.



Hardwood Chip Conveyor

Practical Engineering designed, manufactured and installed an 800t/hr 2m wide conveyor to enable loading hardwood woodchip onto a vessel. Outcome – Significant reduction in the time the vessel is moored.



610 bar Pressure Vessel

Practical Engineering completed the design, design verification and manufacture of a hydrostatic testing vessel to enable replication of 6 km sub-sea level conditions. Forged from austenitic and duplex stainless steels, the vessel is used to test camera equipment up to 600 bar prior to deployment.

Linville WTP Upgrade

Practical Engineering completed the design and construction of a new Water Treatment Plant for the regional Queensland township of Linville, commissioned in April 2020. Process and mechanical discipline work were completed in-house, with Practical Engineering performing project and construction management of all other aspects from concept to commissioning.



International Equipment Certification

Practical Engineering were engaged by an overseas equipment manufacturer to design verify and test a range of MEWP's to Australian standards to allow importation and distribution within Australia





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