



Concept to commissioning | Mechanical Engineering | Design and Drafting



CAPABILITY STATEMENT



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INTRODUCTION

It is my pleasure to introduce you to JPC Engineering.

JPC Engineering has established a reputation for design excellence in complex industrial applications and a reputation for reliability, delivery performance, and value for money. The company's continuing focus on leading edge design approaches, constant reinvestment in design software and training, and its commitment to innovation, ensures that clients receive high quality outcomes.

Demanding industries such as oil and gas, mining, heavy vehicles defence, water services and agriculture means we are now a preferred partner for high specification, time sensitive engineering design, drafting, REPA certification, fabrication and installation requirements.

In Australia and across the world we are recognised as a company that can provide innovative, cost effective engineering solutions from initial concept through all stages to commissioning.

If you are an existing customer, then I thank you for your support and if you are a potential client, I hope you are encouraged by the examples of some of our work history portrayed in the following pages.

Our team is committed to a total performance approach and I am always personally available to reinforce that commitment to you.



Justin Clarke
Director, Engineer

***Our vision is design excellence
achieved through safe
engineering solutions***



JPC Engineering

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**The Toowoomba Chamber of Commerce :
Winner— Business Excellence Award Winner 2013**

**The Toowoomba Chamber of Commerce :
Finalist — Best Regional Business Award 2013**



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COMPANY DETAILS

Trading Name: JPC Engineering

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Cabarlah QLD 4352

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Caroline Irvine (Administration)
Pat McCormack (Manufacturing)

Boeing Australia Limited
“For excellence in 3D design
drawing work, a key function in
the design for the restoration of
F-111 A8-112.”



ENGINEERING EXCELLENCE

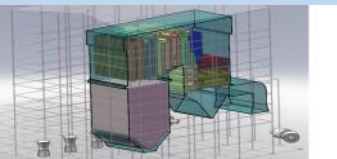
POWER GENERATION

JPC Engineering are specialists in the power generation field, delivering top-quality design and maintenance projects within tight time constraints, to reduce downtime for power source plants.

Our team can deliver engineering solutions for maintenance, design and research tasks, including:

- Access platforms
- Crane beams and lifting jigs
- Pressure parts schematics
- Pressure parts repair data capture systems
- Reverse engineering
- Component re-design
- Certified transportation frames
- Crane rail design, drafting and engineering certification
- Electrical schematic drawing
- Piping schematic drawing
- Weld traceability diagrams
- Re-design of high-wearing components
- Supply of replacement parts

As a case example, for the past 5 years, we have been the primary provider of engineering expertise to one of Queensland's major power generators, evidence of the skills and experience we have to offer in this vital and complex technology.



Millmerran Power Station
Millmerran, QLD
Boiler life management

Minimising maintenance down time



QGC-Condamine Power station
Miles, QLD
Design, certification, Installation



QGC-Condamine Power station



Millmerran Power Station, QLD
Turbine Transport Frames
Design, Drafting, Certification



AERONAUTICAL

Aeronautical engineering demands the most exacting standards of precision and reliability, and this is particularly true for supersonic military aircraft.

JPC Engineering are proud, therefore, of their **collaboration with the Royal Australian Air Force and Boeing Australia** to co-ordinate major structural repairs on the F-111 Strike Bomber.

This involved sophisticated 3D modelling and laser scanning by our team, who then produced drawings and schematics from which replacement parts could be manufactured.

Less spectacular, but just as challenging in its own way, has been our work for Jones Air on their rotating spray boom for aerial crop sprayers.

Whatever your requirements in the field of aviation, our engineers have the ideas and the know-how to meet them.

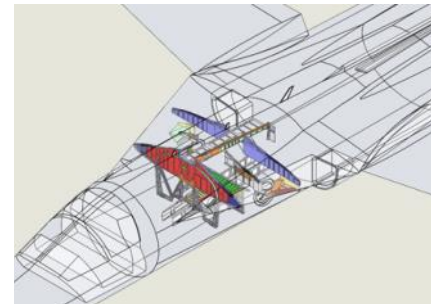
We can offer:

- Reverse engineering
- Three dimensional design
- Finite Element Analysis
- Two dimensional drafting
- Project engineering
- Engineering certification
- Co-ordination of parts manufacture and assembly
- Supply of replacement parts

**Where accuracy is imperative ...
we deliver**



**Boeing Australia
F-111 A8-112 rebuild
3D Design & modelling, Drafting,**



**Boeing Australia
F-111 A8-112 rebuild
3D Design & modelling, Drafting**



**Jones Air
St George QLD
Rotating crop dusting boom
Design, Drafting**



MINING

JPC Engineering provides a range of mining and materials handling solutions catering for all stages of the project, using proven processes and technology.

Our specialist skills have been employed on the successful design and installation of:

- Conveyor systems – from concept sketch to installed conveyor
- Chute design
- Access platforms
- Mill re-lining equipment
- Mobile batch mixing plants
- Dragline boom points
- Wash plants
- Air cyclone filters
- De-sliming plants
- Access platforms & ladder audits and redesign.
- Wear liners
- Crushing stations and equipment

Extreme conditions ... limited time ... not a problem

As a case example, for the Black Rock Mine in the Kalahari desert South Africa, JPC Engineering worked as the project manager for the installation of 3 real time on-belt analysers. Design, drafting and certification occurred in our Australia office, whilst Justin and his team lead a group of to manufacture and install the analysers 450M Underground.



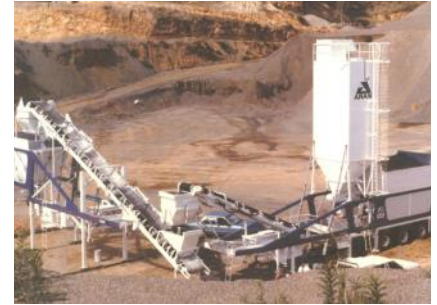
**Black Rock Mine
Kalahari desert, South Africa**



**Black Rock Mine
Project management,
Installation, Manufacture,
450M underground**



**Black Rock Mine
Project management,
Installation, Manufacture
450M underground**



**Aran, QLD
Mobile Batching Plant
Design, Drafting**



**New Acland Coal
Acland, QLD
Design, Drafting, Certification**



**Ensign Energy services, QLD
Mud pump skids
Design, Drafting, Certification**



TRANSPORT

JPC Engineering is dedicated to providing safe and efficient solutions for the transportation design needs of our clients.

VEHICLES

Our experience in the heavy vehicle sector is wide and varied, and we are becoming increasingly involved in designs for the mining, agricultural and leisure industries. From back-of-the-envelope concept to working product, we are able to make your transportation ideas into reality.

Our expertise covers:

- Twin steer concept designs
- Dump truck bodies
- Layout and design of custom coaches
- Full range of custom ute tray aluminium canopies
- Box trailer range including full bills of materials data capture
- Underground mining vehicles
- Caravan design and construction
- Body frame fibreglass mouldings for motor-homes

AGRICULTURE

- Tipping elevator bins
- Agricultural equipment and machinery
- Spray trailer and tank design
- Spray boom design

**Diverse industries ...
design process the same**



Western Star Trucks
Kelowna, Canada
Design, Drafting



Trailvor (Apollo) Motor Homes
Brisbane, QLD
Fibreglass 3D Design, Drafting



Stoll Spraying Equipment
Wagga Wagga, NSW
Design, Drafting, Manufacturing Project management



PRODUCT DEVELOPMENT

JPC Engineering have worked with individual inventors though to large corporations to take their ideas though all stages of development including prototyping to finished products ready for the market.

SCOPE

Value engineering design for small components through to large structures, equipment design, plant refurbishment and redesign, reverse engineering, new product design, and new engineering design solutions for existing processes and operations. JPC Engineering develops the best possible engineering solution to meet clients' needs.

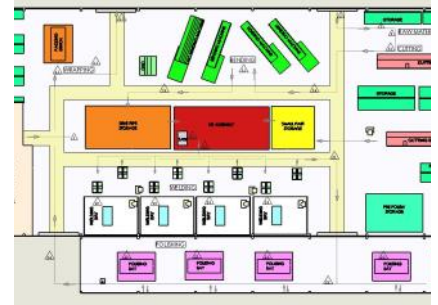
SOFTWARE

JPC Engineering uses SolidWorks for design and drafting. This powerful 3 Dimensional Modelling tool allows crucial design in fine detail, the analysis of moving parts and detection of any part clashes. A free downloadable viewer program allows clients to review the entire modelling and design process.

After completing 3D CAD models, 2D drawings are developed to the client's detail requirements. This includes design for manufacture covering fabrication/manufacturing dimensions, tolerances, weld details, surface finishes, material specification and protective coating requirements.

DATA CAPTURE

A Drawing Register and full drawing package are usually made available to the client, depending on the nature of the project and client requirements.. This job history includes keeping clients' drawing packages up to date and issuing revisions as changes occur with subsequent design modifications. JPC Engineering can carry out time and motion studies and define efficient work-flow for production facilities. We can analyse in detail all requirements relating to factory automation and robotics.



Factory layout and production flow systems and diagrams



RiTract Syringes
Sydney, NSW
Design, Drafting, Packaging,
Product development

Bringing ideas to reality through innovation

As a case example, for Aqua Guardian Group, JPC Engineering worked as their design and engineering arm for many years to take a new product form an idea to market. In the process we had the largest thin walled injection modelled part made in the world.

The product when deployed on water storages can have evaporation savings of 80%.



Aqua Guardian Group
Melbourne, VIC
Product development & Design



Aqua Guardian Group
Melbourne, VIC
Detail drafting, deployment



Condon Sugar Processing
NSW
Concept design



HEALTH & SAFETY

JPC Engineering is committed to providing a safe and healthy workplace by developing, maintaining and promoting safe and productive work practices in all aspects of its business.

JPC Engineering have an integrated safety management system.

We strive to instil a working culture that is to AIM FOR ZERO accidents in the workplace and work sites.

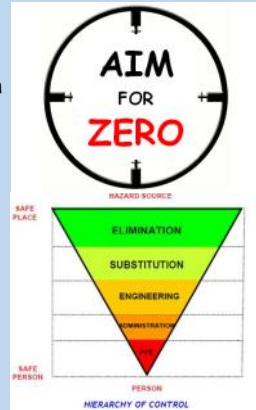
JPC Engineering has implemented a workplace health and safety policy and procedures to cover its office and site work. The company's staff are required to comply with all safety requirements on clients' sites. All employees and sub-contractors are fully engaged in the system and are made aware of their responsibilities through site inductions, toolbox meetings, and / or Job Safety and Environment Assessments (JSEA).

Our safety system is currently undergoing evaluation to ensure it is to a certifiable level and in line with Australian Standard AS/NZS 4804:2001.

RISK MITIGATION STRATEGY

Our design processes work on the top 3 steps in the hierarchies of control:

- Eliminate
- Substitute
- Engineer



For example, on the job, JPC Engineering have developed a building system that reduces working at heights by 90% of the project time.

Through JPC Engineering experience across the globe, each project is assessed to ensure ultimate safe work practices are achieved according to the project:

Site Location / Design / Features / Challenges / Outcomes and Expectations

**26 years of operation,
never a lost time injury**



**Drilling rig
Site measure**



**Black Rock Mine
Design, Project management,
Installation, Manufacture
450M Underground**



**Surat basin QLD
Mud pump skid
Design, Certification**



MANAGEMENT SYSTEMS

QUALITY

JPC Engineering’s quality management systems are supported by a comprehensive job management system, standard operating procedures, engineering design procedures, checking process and verification of requirements with clients.

The company has maintained a high performance record of reliability, fit for purpose outcomes and safety of solutions by using this system. The quality system and procedures are subject to continual review and improvement and any updates are distributed to employees by the system manager. JPC Engineering’s quality management system is currently undergoing evaluation to ensure it is to a certifiable level and in line with ISO 9001:2008.

INSURANCE

Public and product liability, Workcover, Professional indemnity for engineering certification, fabrication and on-site installation.

ENVIRONMENT

The company is committed to reducing its impact on the environment and this covers energy and water efficiency systems at the company’s office, office paper recycling and compliance with clients’ environment management requirements when on site. Our environment management system is currently undergoing evaluation to ensure it is to a certifiable level and in line with ISO 14001:2004.

RPEQ & DESIGN CERTIFICATION

JPC Engineering manages the certification of critical components, initially by in-house FEA software, followed by certification by an independent engineering specialist. Certification of structures or components can often include detailing any required modifications to existing or surrounding equipment. JPC Engineering is capable of designing and detailing these modifications that could be required for the design certification.

Preferred partner for high specification, time sensitive engineering

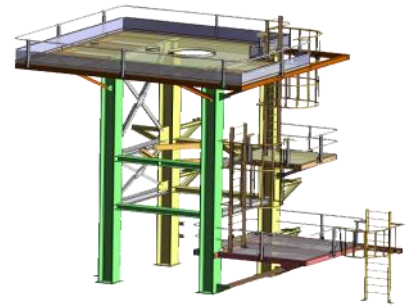
Including design, drafting, REPQ certification, fabrication and installation



**Fodder Solutions
Toowoomba, QLD
Design, Drafting**



**Weiss Frozen Foods
Toowoomba, QLD
Design, Drafting, Automation**



**BP Clean fuels
Brisbane, QLD
Design, Drafting,**





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PEOPLE

TEAM

JPC Engineering retains quality employees by providing in-house and external training opportunities so that employees are continually improving their skillset across various fields of expertise.

The close knit team working environment also means that individuals training experience is often filtered through the office enhancing the skills of fellow employees on the job.

JPC Engineering is also an avid supporter of providing work experience opportunities to all students that show an interest in the field of engineering. The company on average takes 2 students per year including **indigenous, female, local and national students** from a varying age range. The work experience provided can often lead to future employment within the company.

LOCAL COMMUNITY

JPC Engineering is an enthusiastic company that is involved in supporting the local community and various charity organisations. Donations to several charities include Camp Quality, Shave for a Cure, Buy a Bail, and local swimming clubs. JPC Engineering is also an active member of the Toowoomba Chamber of Commerce & Industry and Toowoomba and Surat Basin Enterprise.

CONTINUOUS IMPROVEMENT AND INNOVATION

JPC Engineering's track record as an innovator in it's own work processes which brings continuous improvement to solutions for clients. The company actively commits to staying at the leading edge of engineering design and brings the latest best practices to its work for clients.

ENTRENCH WITHIN A CLIENTS TEAM

JPC Engineering has developed strong relationships with clients and works as 'part of the team' to ensure that clients have the engineering support they need. This includes providing advice on options, case study information on successful solutions at other sites and a relationship based approach to tackling work programs and urgent requirements.

TRAINING / INDUCTION / ACCREDITATION REGISTRAR

Confined Space	GI—Metalliferous Surface	QLD White Card
Working at Heights	GIQ—Coal Surface	First Aid Certificate
Coal workers Health Scheme (Medical)	Site Supervisor	SolidWorks



**JPC Engineering Team
Toowoomba Chamber Business Awards**



**JPC Engineering
Design office**



**Justin, on site
Morocco, North West Africa**

***Our team is committed to a
total performance approach***



THINK BIG

SCOPE OF SERVICES

3D DESIGN & DRAFTING

Value engineering design for **small components** through to **large structures**, equipment design, plant refurbishment and redesign, reverse engineering, new product design, and new engineering design solutions for existing processes and operations. JPC Engineering develops the best possible **engineering solution** to meet clients' needs.

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JPC Engineering can run engineering jobs valued up to \$1 million and provides a complete job and version control service for clients. This job history includes keeping clients' drawing packages up to date and issuing revisions as changes occur with subsequent design modifications.

JPC Engineering can carry out **time and motion studies** and define efficient work-flow for production facilities. We can analyse in detail all requirements relating to factory automation and robotics.

RPEQ & DESIGN CERTIFICATION

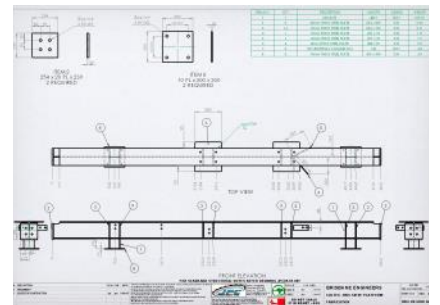
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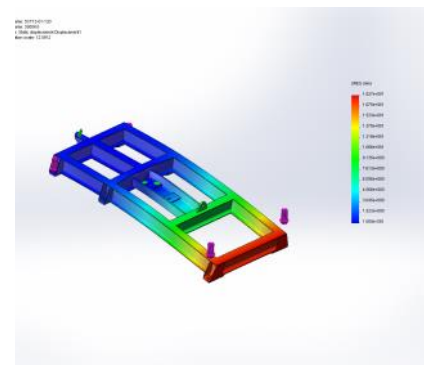
Proven track record



Mechanical design



Structural steel drafting



Finite element analysis



SCOPE OF SERVICES

FEA (FINITE ELEMENT ANALYSIS)

JPC Engineering uses SolidWorks Simulation to undertake any in-house FEA studies. The information obtained in these studies is then referred to during the design certification phase and is used to optimise the engineering design.

INDUSTRIAL DESIGN

With skilful use of photos and 3D models, JPC Engineering can bring new product concepts to life well before product development is complete. This capability often fast-tracks the marketing process and the tools for testing market demand, all prior to further investment in tooling and manufacture.

PROTOTYPING & TESTING

The JPC Engineering alliance includes a well-equipped workshop with a full range of machining and fabrication facilities. JPC Engineering has produced a number of prototype products for clients, and specialises in the challenges of working on start-up technologies and will assist with testing and production.

DATA CAPTURE

JPC Engineering delivers full traceability or ongoing tracking for all design solutions. By using drawing package specification which includes data capture sheets and electronic data capture, JPC can provide engineering solutions for:

- Systems requiring complete tractability
- Assemblies requiring inspection
- Assemblies requiring maintenance plans
- Time and motion studies

PROJECT MANAGEMENT

JPC Engineering is skilled in producing realistic project schedules and all requirements regarding project planning. Capabilities include developing Gantt charts with detailed time frames and task descriptions to completely understand the required work flow, resources and timeline.

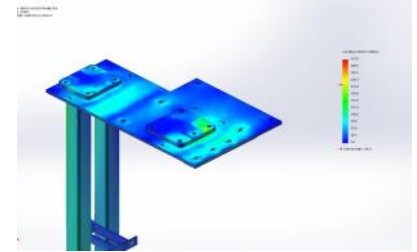
JPC Engineering is then able to implement the project plan and manage various work parties and sub-contractors

FABRICATION & INSTALLATION

JPC Engineering can design, manage, fabricate and install small to medium engineering projects. Engineering fabrication and installation capabilities and equipment include:

- ◆ Steel fabrication workshop including welding, cutting, drilling and folding.
- ◆ Assembly of components on and off site, Site installation and commissioning.

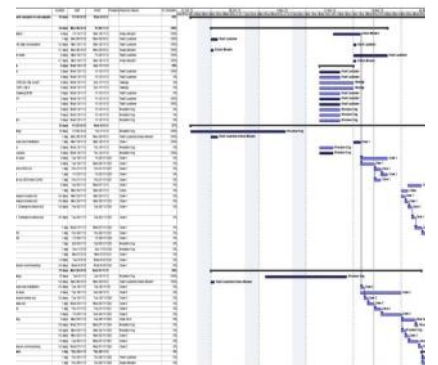
Quality sub-contractors



Aurizon, QLD
50T Locomotive lift system
Design, Drafting, Certification



Rotating crop dusting boom
Jones Air, St George, QLD



Project scheduling
Project management



AWARDS / MAJOR CLIENTS / PREQUALIFICATION

BUSINESS AWARDS

JPC Engineering won the 2013 prestige award under the category Best Professional & Business in The Toowoomba Chamber of Commerce & Industry Business Excellence Awards.

It was a great honour to have our 25 years of hard work in engineering excellence recognised. We were also a finalist for the award of Best Regional Business for 2013.

The awards we have received are a good reflection on our long term valued clients, we are extremely grateful for their continued support.

MAJOR CLIENTS

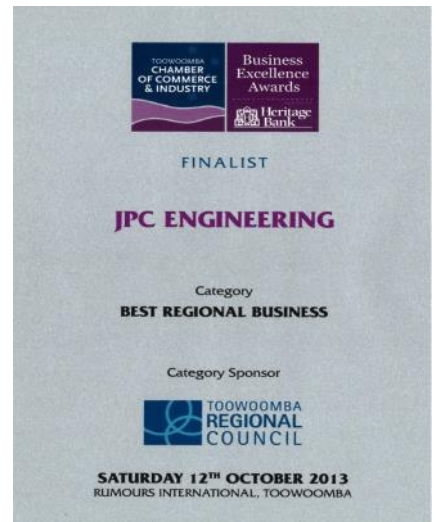
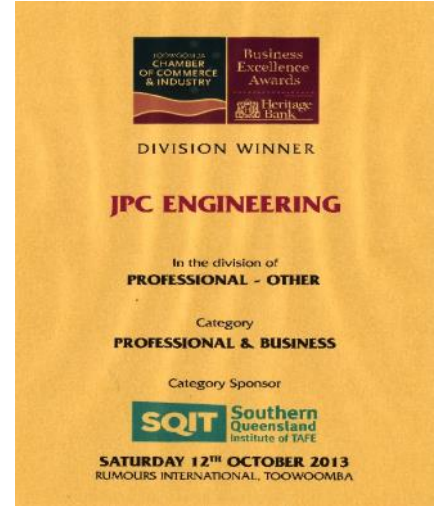
- Scantech 2010 (ongoing)
- Boeing Australia: F111 repair design
- Millmerran Power Station: Engineering contract since 2006 (ongoing)
- Majan Aluminium Smelter, Oman
- Retractable syringe design
- Queensland Gas Corporation: Engineering, manufacturing and installation contracts since 2011 (ongoing)

PRE-QUALIFICATIONS

JPC Engineering is pre-qualified with the following companies:

QLD Gas Corporation (QGC)	Aurizon
Thiess	Veolia Water
Downer EDI	Intergen
Boeing Australia	CS Energy
New Acland Coal	Ensign International Energy Services

Boeing Australia Limited
“For excellence in 3D design drawing work, a key function in the design for the restoration of F-111 A8-112.”





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CUSTOMER LOGOS

