



# Associated Industrial Design Engineering Pty.Ltd.

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## ***INTRODUCTION***

Associated Industrial Design Engineering P/L has been providing Mechanical and Structural Engineering Design, Detailing & Certification Services for the past 40 years. Our commitment to excellence extends beyond our 3D design and detailing to site support, project management and full turn key projects.

Our principal & sole company owner, Richard Horton, worked at the Kurri Kurri Smelter Design Office as a Contract Project Manager & Design Draftsman for 18 years whilst also catering to the Coal Industry.

After leaving the smelter we won a tender with Alcan Granville to design & supply Aluminium Casting tooling. This also extended to several projects involving Furnace & Launder design, Conveyor upgrades, including Saw modifications.

We also worked with Weston Aluminium where we designed, certified, shop detailed & project managed the manufacture, installation & commissioning of Rotary furnaces, 40T Reverb furnace, Puck Casting Line, 5kg Ingot Casting Line as well other equipment. We also provided project management including site supervision of maintenance shutdowns when they occurred & constant Engineering Support for breakdowns on a 24/7 basis.

In 2008 we upgraded to Inventor 3D software & have been using it since.

In 2010 we were contracted by the Hunter Port authority to access & recommend a course of action to replace or restore 4 overhead cranes in their Basin Warehouse Facility. Previous Engineering firms had advised the complete replacement which would have included the replacement of the Warehouse Structures. We site surveyed the crane rails & found that they were 150mm out of alignment horizontally & had over 100 mm vertical variations. We developed a strategy to under pin some footings, reinstate various missing bracings & to install a horizontal truss in the roof area. This along with specifying new cranes with cam follower style guides on one side allowed the project to come to a cost effective solution.

In the past we have forged a very strong alliance with Forgacs Engineering who serviced the Mining, Shipping & Railway industries. We provided to them full Engineering Design, Certification & full shop detail drawings derived from Inventor 3D models, for all projects, where required, for over 10 years.

As a balance to this alliance, we used Forgacs to manufacture equipment we designed for other clients. Unfortunately, Forgacs ceased to trade in 2016 so we then went looking for additional clients.

We have designed 50T drawbars for Joy Global which we supply as an OEM. These are emergency tow links for Shuttle cars & they are supplied as standard equipment by Joy Global worldwide.

In 2017 Pacific Shredder commissioned us to design a full car crushing Plant located in Kings Park Sydney. This involved the modification of imported equipment from Germany to suit the clients' requirements.

Over the past 14 years we have expanded our client base & we are now actively designing & certifying for Weston Aluminium, Water Gas Renew, Metalert, Morgan Engineering, Transport NSW ( vendor # 1051374), Hy-Tec Quarries, Rosebrook Quarries, Alfabs Mining, Singleton Council, Temmco Fabrications, Weston machine shop & Others.

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**MECHANICAL and STRUCTURAL DESIGN and DETAIL DRAFTING**

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We provide plant structural inspections as required by the Mines department. During an inspection we were asked to review a breakdown where a dredge gearbox had failed. We were able to locate a replacement gearbox, design an adapter to suit & the unit was recommissioned within 2 weeks. Prior to our involvement the original gearbox agent was quoting 4 to 6 weeks delivery at over 4 times the price.

We have also recently redesigned, 3D modelled & certified the bridge lifting equipment base steelwork for the Spit Bridge in Sydney for Falk Australia.

Our recent experience with the Transport NSW includes:

Redesign & Certification of maintenance monorails including work platform lifting components for the Karuah river bridge.

Redesign, 3D model & provide shop detail drawings for bridge plank lifters as used on Morpeth bridge.

Site survey, Design, 3d model & shop detail access to the expansion joint inside the North Abutment of Mooney Mooney Bridge.

Access stairways & platforms to the underside of bridges on the north & south coast of NSW.

We have just completed the design & detailing of a new 40T reverb furnace for Weston Aluminium. This furnace incorporates the latest in heat recovery & Magnetic stirring technology. This furnace has just been commissioned.

We are currently working with a totally different technology which is gas flares used for burning off waste gas for mines & waste facilities. Here we are taking equipment from Norway & adapting it to suit Australian codes & requirements for Water Gas Renew.

We have also recently completed the design of a new stress Relieving furnace for Metalert after an explosion in their existing furnace significantly damaged it.

Our Certifying Engineer is Stephen Savage MIE (Aust) CPEng 651364 & he has worked with us for the past 30 years on a subcontract basis.

**Services include:**

- Cost Estimation, Capital Expenditure Justification & payback calculation;
- Project Management, Subcontract liaison, Site Supervision & Commissioning;
- Mechanical design & 3D modelling using Autodesk Inventor;
- Furnace design & installation.
- Structural design and detailing, Certification of lifting devices;
- Civil design & certification of foundations;
- Maintenance assessment and programming;
- Process & equipment auditing & trouble shooting;
- Equipment upgrading, Maintenance manuals;
- Innovative casting technology for the aluminium industry;
- Hazop & Operator training;

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The following people are pleased to offer reference:

- Adam Kidd, Transport NSW, Waratah NSW.
- Aaron Jefferies, Intracal Newcastle NSW.
- Bob Dixon, Water Gas Renew, Newcastle NSW.
- Martin Morgan, Morgan Engineering Singleton NSW.
- Craig Joseph, Dominion Mayfield East NSW.
- Colin Jackson, Rosebrook Quarries, Maitland NSW.
- Anthony O'donahue, Sand & Gravel processing, Millers Forest NSW.

Please feel free to call us for technical advice. We will endeavour to furnish you with an innovative solution.

Richard Horton (Director)