



Fabrication Capability Statement

YOUR ENGINEERING PARTNER





Fit For Purpose Fabrication

As one of the largest independent engineering companies in the South Island, we provide a wide variety of fabrication services throughout New Zealand. With workshops in Nelson and Greymouth and over 80 qualified trades staff; our facilities can produce up to 600 tonnes of heavy fabrication per month. For projects that require larger volumes we have partnerships with overseas fabrication companies raising our capacity to meet any fabricated steel volume requirement.

Fabrication Services

Supporting our trades staff are a team of production engineers, estimators, designers and project managers enabling us to provide a complete range of services to our clients from initial design through to fabrication and site installation. We provide a wide variety of fabrication services including:

- Structural steel fabrication
- Stainless steel fabrication
- Pipe welding
- Conveyor fabrication
- Fabrication and assembly of mobile industrial machinery

Nelson Workshop

Our main fabrication workshop is based in Nelson. With a floor working area is 1600m² and accessed by double entry doors 14m wide by 6m high, it is capable of producing significant quantities fabrication per month. The Nelson workshop has the following fabrication equipment:

- Plate rolls with 32mm capacity up to 3.0m width
- Submerged arc welding capacity is 1500 amps output with cylindrical welding carried out on controlled rotators
- Heavy Manipulators

Greymouth Workshop

Brightwater subsidiary Gray Brothers Engineering (GBE) has a proud history of providing a wide variety of fabrication services to the West Coast and Canterbury regions. GBE's 860m² fabrication workshop is capable of producing significant quantities of light to heavy fabricated structural steel. The Greymouth workshop has the following fabrication equipment:

- Plate rolls with 32mm capacity up to 3.0m width
- Submerged arc welding capacity is 1500 amps output with cylindrical welding carried out on controlled rotators

Machining

Both the Nelson and Greymouth workshops have fully equipped Machine Shops. Our experienced and highly capable machinists specialise in CNC production turning and milling. We are able to provide machining services for both mass volume repetition as well as one off custom parts machining. The ability to complete machining & inspection within our own facilities enables us to provide a seamless, cost effective service for our customers and engineering partners. Our Capabilities include:

- Line Boring
- Milling / Slotting
- Turning, including large CNC Lathe 4m centres, 1.8m swing, 16t capacity
- Separate designated fitting shops



Painting & Blasting

Brightwater has two undercover Blast & Paint facilities capable of handling large volumes of prefabricated and fabricated steelwork. Our dedicated blasting and coating applicators are experienced in a wide variety of media blasting and coating applications. An in-house Coating Specialist and QA Inspector ensure quality control throughout the entire process guaranteeing the final product meets the most stringent requirements and specifications.

Single Point Accountability

In every fabrication project we undertake our clients are appointed a Brightwater Account Manager whose responsibility it is to ensure there is constant collaboration and clear lines of communication. This single point accountability enables our clients to have consistency of delivery as well as having transparency throughout the lifecycle of the project.

Our Approach to Safety

Zero Harm is a core value of Brightwater's and the Health & Safety of our staff is paramount. Having significant experience in undertaking large and small scale projects has given Brightwater the internal structure, processes and support staff in order to create a strong Health & Safety culture and performance.

All work carried out by Brightwater is done in accordance with our stringent H&S policies and monitored by our Health & Safety Advisor. Our safety record translates into lower insurance and liability rates, therefore reduced costs and risks to our clients.

ZERO HARM
ALL ACCIDENTS ARE PREVENTABLE

QA System & Checks

The Brightwater Quality Management System (QMS) covers every facet of our business. The QMS is segmented into business units with clearly defined responsibility and accountability. Corrective action, improvement requests and customer feedback (CIC) is integral to ensuring the QMS is kept right up to date.

Complementary to our QMS, we have in-house qualified staff carrying out quality checks at designated stop points during the fabrication and build process. These typically include raw materials validation (mill certifications etc), raw materials deliveries, dimensional check of fabricated items pre-welding out, post welding dimension/alignment checks, visual testing and magnetic particle testing.

About Brightwater

Brightwater is proudly named after the regional Nelson town where we have been located since our inception in 1979. From the very beginning our core purpose has been to truly understand our client's requirements and through a collaborative partnership provide fit for purpose industrial engineering solutions.

Specialising in industrial bulk materials handling, our in-house capability allows us to provide a complete range of services from engineering & design through to fabrication, site maintenance and installation. Our multi-disciplined projects team has delivered significant brownfield upgrades and greenfield projects throughout Australasia in the Mining, Quarry, Resources, Dairy and Wood Processing sectors. With large workshops in Nelson and Greymouth, we have a significant trade workforce that provides a full range of fabrication services as well as on site installation, repairs and maintenance work.



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Project: Boiler Stack Fabrication



Boiler Stack during fabrication in Nelson

Fabrication Capabilities



Machining & Fitting

- Fully Equipped Machine Shops
- Line Boring
- Milling / Slotting
- Turning, including large CNC Lathe 4m center, 1.8m swing, 16t capacity
- Separate designated fitting shops



Lifting Capacities

- Mobile cranes up to 25t
- Forklifts up to 9t
- Gantry cranes max Lift 20t (tandem)



Welding

- Submerged arc 1500 amp capacity
- Tractor unit - 1000 amp capacity
- Over twenty five 350 amp powerpacks complete with wire feed units
- AS/NZS 2980 & NSME 9 capable



Boiler Stack ready for transport



Boiler Stack installed in North Otago



Cutting & Rolling

- Profile Cutting
- Track Mounted Gas Cutting (All Positional)
- Section Rollers
- Plate rolling - up to 32 MSP x 3000mm wide



Painting

- Dedicated Blasting / Coating Applicators
- 300m2 under cover blasting and painting area
- Media Blasting
- Experienced in a variety of coating applications
- Coatings Specialist / QA Inspector



Additional Capabilities

- Certified Weld Inspectors
- Weld Mapping
- Non Destructive Weld Testing - Magnetic Particles
- 9100m2 lay down area
- MAF Approved container loading and unloading area



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Project Examples

Oceania Dairy Pipe Bridge

Overview:

Oceania Dairy Limited is a wholly-owned subsidiary of Inner Mongolia Yili Industrial Group (Yili). Yili is China's largest dairy producer and the 10th largest dairy company in the world. Oceania's Glenavy, Oamaru processing plant has been designed for the production of milk powder for export to China where it is then processed by Yili to produce infant formula. In January 2016 Yili entered into stage two of the Glenavy site which included the construction of an Ultra High Temperature (UHT) plant, formula canning line, blending facilities and the expansion of the existing storage area.

Solution:

Brightwater was awarded the contract for the fabrication of a pipe bridge as part of the expansion project. The pipe bridge consisted of nine sections each spanning between 25m to 50m in length. The bridge was a steel truss design roughly 3.5m x 3m in cross section loaded with up to 40 process and service pipelines which ranged in size from 300NB to 50NB. Brightwater undertook all aspects of the bridge fabrication in-house including steel detailing, steel fabrication, metal arc spray, ASME pipe welding, inspection and testing.

By having all aspects of the construction in-house Brightwater were able to ensure consistent quality and keep costs down for the client. To help fast track the fabrication the job was split between Brightwater's Nelson and Greymouth workshops meaning work could be carried out concurrently on multiple work fronts.



Trafalgar Centre Steel Reinforcing

Overview:

The Trafalgar Centre is Nelson's largest sports, events and entertainment venue with a capacity to hold up to 4000 people. Constructed in the 1970's, the iconic venue was closed by the Nelson City Council (NCC) in December 2013 when engineering reports identified it as an earthquake prone building that could pose a risk to public safety.

Solution:

In 2015, the NCC decided the Trafalgar Centre would undergo an extensive rebuild to seismic retrofit the venue. Gibbons Construction in conjunction with Downer were awarded the contract to upgrade the venue along with associated buildings. As part of the main building upgrade, Brightwater was contracted to provide 51.5 tonnes of fabricated steel reinforcing to the wooden portals inside the building to increase the structural load capacity. Brightwater also provided an additional 15 tonnes of steel reinforcing and BRB braces to the southern extension of the main hall. The entire scope included the procurement, fabrication, painting and installation of the steel reinforcing.



Project Examples

Barro Wyndhamvale Quarry Plant

Overview:

Barro Group are the leading independent, privately owned aggregates and concrete manufacturing company in Australia. Their quarry at Wyndhamvale, 35km south west of Melbourne had been crushing aggregates using mobile equipment. Due to significant local growth in the Wyndhamvale area, the existing operation was identified as being unable to meet the increasing demand for aggregates. To meet this demand, Barro decided to build a new fixed plant, in the existing quarry.

Solution:

Brightwater was contracted to design, fabricate and construct a new green field plant capable of delivering 600 tonnes per hour of either blended or washed aggregates. Additionally, Brightwater was challenged to design a plant that could be fully relocated if required. Over 1200 tonnes, approximately 80% of the steelwork in the project was fabricated at Brightwater's Nelson and Greymouth workshops. In total, 55,000 fabrication man-hours produced over 1200 tonnes of structural steel and included 41 conveyors with a combined length of 1.6 kilometres.

The plant is designed to be readily movable, with bolted rather than welded assemblies. This allowed Barro to have the plant dismantled in the future for relocation and reconstruction elsewhere. Common design components meant the conveyors and structures assembly phase was extremely efficient, resulting in only minor adjustments being required to belts and chutes during commissioning.



Westland Dairy Dryer 7

Overview:

In 2014 Westland Dairy commissioned the construction of a new purpose built Drier Plant at their Hokitika site in order to meet the increasing international demand for infant formula. The plant was designed to provide an additional 23,000 metric tonnes of nutritional product per season.

Solution:

Brightwater subsidiary Gray Brothers Engineering (GBE) was contracted through Evans Jones Construction to provide fabrication and site erection services for the project. Overall GBE fabricated and erected 200 tonnes of steel. The scope of the project included fabrication, delivery and site erection of steelwork for internal and external tower stairs, evaporator stairs and platforms. GBE also fabricated and installed fluid bed access platforms, the baghouse inlet platforms, ducting support frame as well as cladding panel support frames.





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Project Examples

Oceana Gold Pontoons

Overview:

Oceana Gold's Macraes open pit mine is located 100 kilometres, north of Dunedin in the Otago region of New Zealand. Macraes is New Zealand's largest gold producing operation and has produced over four million ounces of gold. As part of the expansion to the mine, Oceana required two new floating pump pontoons to support the main water recovery pumps.

Solution:

Oceana Gold commissioned Brightwater to supply two floating pump pontoons. The pontoons float in a man-made recovery water lake and support the main recovery water pumps which alone weigh 10 tonnes and are fitted with 450kW electric motors. The pumps will transfer up to 2000m³/hr of water back to the plant via a 600 nominal bore floating pipeline.

Brightwater designed and fabricated the pontoons which included a pump tilting mechanism to lift the pumps out of the water for maintenance, an integrated anti-vortex plate around the pump suction and personnel access for maintenance and inspection of the pump. The design also had many inherent safety features including multiple bulkheads and was fully certified by a naval architect for operation on the mine site.



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