



Quarry Capability Statement

YOUR ENGINEERING PARTNER



Your Engineering Partner

Brightwater Engineering specialises in turnkey engineering and professional services that are specifically tailored to meet our client's unique project requirements, whilst always ensuring the safety of our people and the environment.

Our multi-disciplined engineering operation, backed by significant in-house and partner resources, ensures the successful delivery of complex industrial engineering projects from concept through to commissioning. We have three project engineering offices and two fabrication centres throughout New Zealand specialising in turnkey engineering projects for the Quarry & Aggregates sector.

Professional Engineering Services

We provide 'fit for purpose' technological solutions to meet our clients requirements. Our team of highly experienced engineers provides a range of services from project work, process optimisation, plant audits, maintenance work as well as scheduled maintenance and forecasting. These services can provide clients with a specialist engineering resource for a particular project, a team to address and manage one off projects, or providing additional engineering resources to complement clients in-house engineering team.

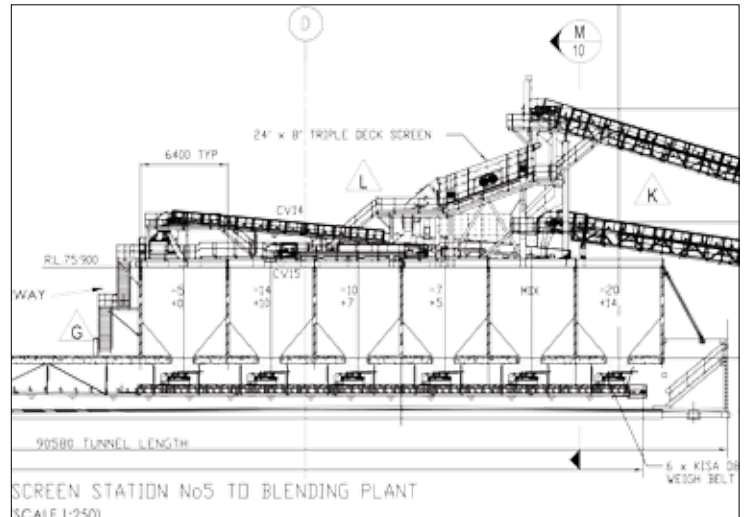
Turnkey Provider

We manage all aspects of a project from initial concept through to final commissioning and operator training. In conjunction with this capability we are able to offer single point accountability for all aspects of the project providing a seamless, low risk and cost effective solution.

Contracting Models

We have experience in various forms of contracting models including:

- Fixed Price Lump Sum
- Negotiated Contract
- Guaranteed Maximum Price
- Cost Plus



These models can be engaged in an Engineer, Procure and Construct (EPC), or Engineer, Procure and Construction Management (EPCM) capacity. The key being that we are flexible. We pride ourselves in regular and open communication with our clients and firmly believe that is what makes the Brightwater difference, ensuring the project is completed safely, to client specifications, on time, and within budget.

Service & Support

Support starts from the moment your project commences. Whether you need help installing, configuring or maintaining equipment, we have the capability to keep your operation up and running. We can help reduce downtime and improve productivity by providing experience, technical information and assistance you need, when you need it.

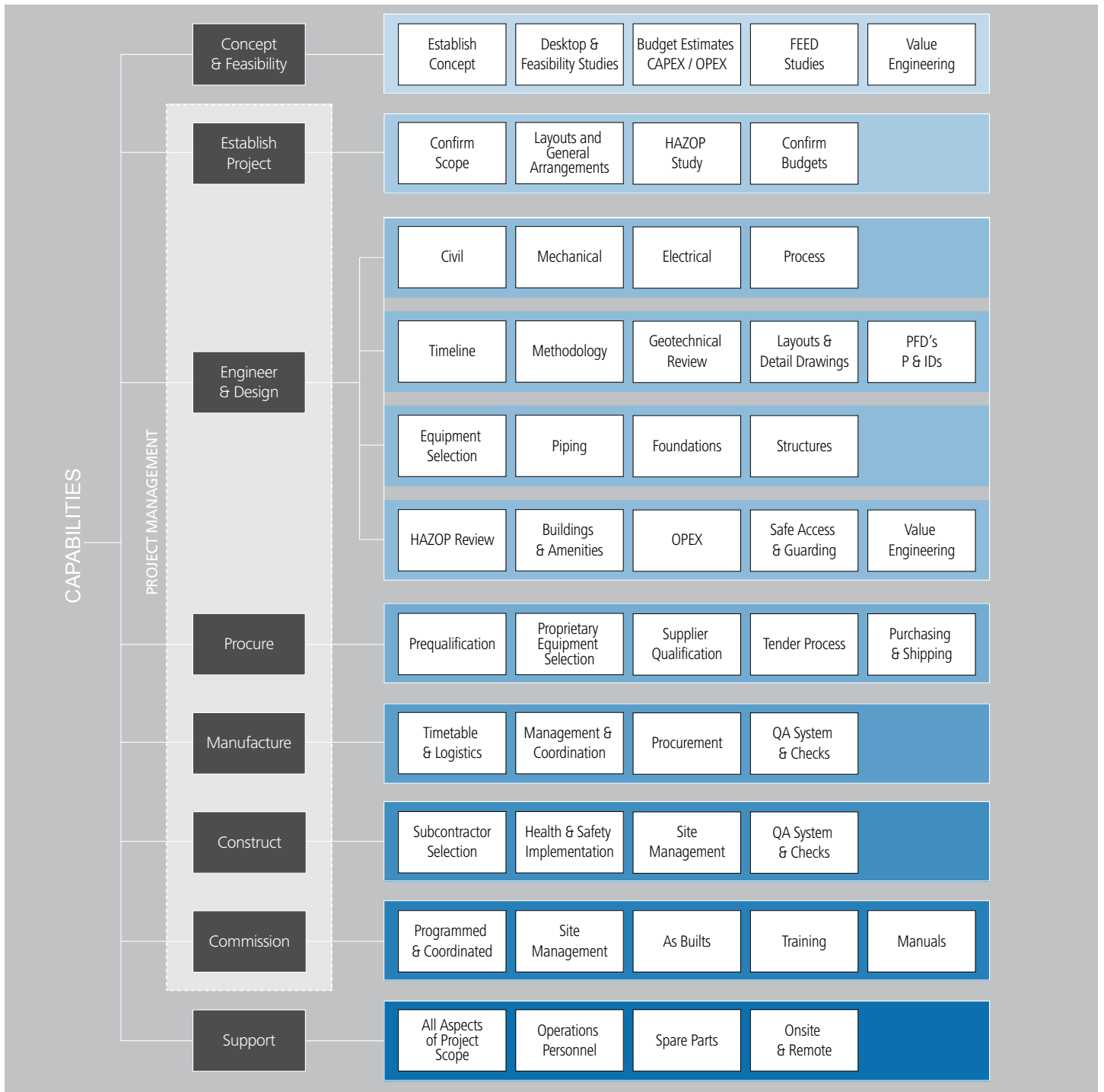
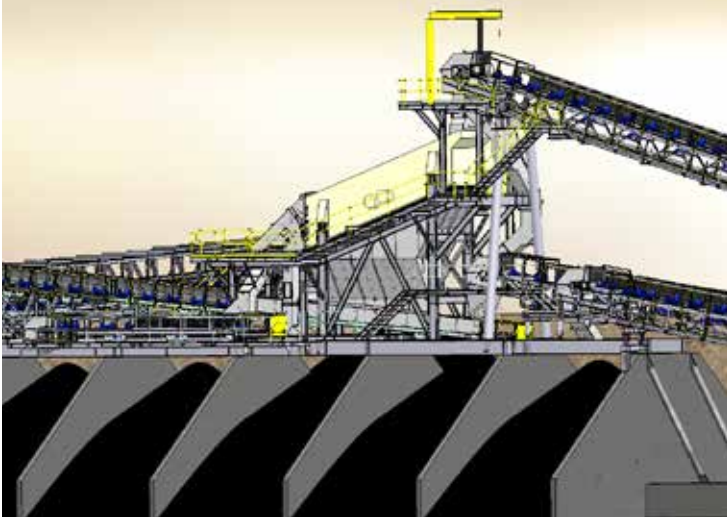
Our Approach to Safety

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 strong safety record translates into lower insurance and liability rates, therefore reduced costs and risks to our clients.

ZEROHARM
ALL ACCIDENTS ARE PREVENTABLE

► Right: The diagram demonstrates our range of capabilities via a complete service or through providing a single, or selection of the services to meet your specific requirements.





Project Examples

Higgins Meremere Plant Upgrade

Overview:

Higgins Aggregates supplies over two million tonnes of aggregates per year throughout New Zealand. Located near Te Kauwhata in the Waikato, Higgins Meremere Quarry supplies high PSV aggregates to the road construction industry. In an initiative by the company to drive greater efficiencies, the Meremere Quarry was required to undergo a transformation from diesel powered mobile equipment to a new fully electric fixed plant.

Solution:

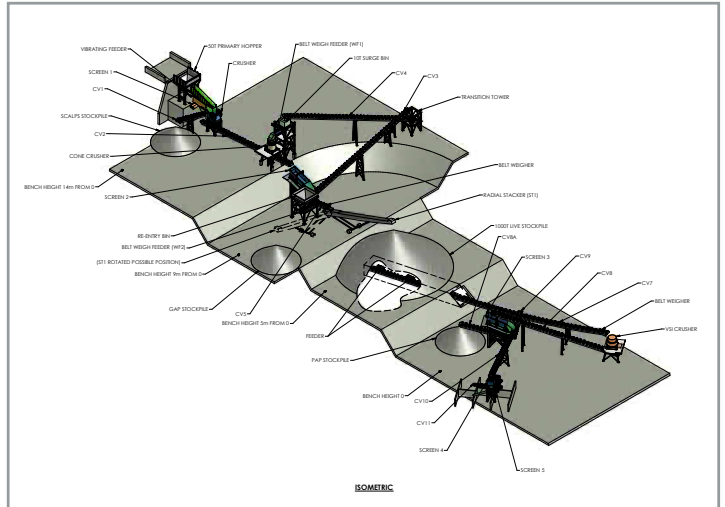
Brightwater was contracted to design, manufacture and install a purpose built fully electric plant that utilised existing tracked mobile equipment on site to help reduce costs.

The Design was a joint collaboration between Brightwater and Higgins. Brightwater completed a high level concept sketch and used three dimensional modelling to capture and communicate the most efficient solution given the challenging topography of the quarry site.

The result of this design lead to a modular plant where mobile equipment was fixed into position, extra conveyors were added along with larger more efficient screening plant. The design increased production from approximately 60 tonne per hour up to 180 tonne per hour capacity.

A new elevated feed bin was also designed to allow 30 tonne dump trucks to provide continuous feed material into the plant at a set rate.

The entire process from design concept to site installation and commissioning was completed within an eight month time frame.



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, construct and commission a new green field 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 was designed to be relocated if necessary, 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.





Project Examples

Holcim Rooty Hill Aggregate Distribution Centre

Overview:

In a key strategic step to future proof the supply of construction materials to the Sydney metropolitan area, Holcim Australia commissioned the development of a Regional Distribution Centre (RDC) in the Sydney suburb of Rooty Hill. The RDC receives construction materials (sand and aggregates) via rail and stores these materials ready for distribution to Sydney based customers. The majority of the aggregate and sand product is provided by Holcim's newly built Lynwood Quarry, situated 160km south of Sydney.

Solution:

In May 2013, Brightwater was awarded the contract to deliver the full engineering design, construction, installation and commissioning of the facility to receive, unload, and store product delivered by rail. This included the full automation and electrical design for the plant.

Operating 24 hours a day, seven days per week, the facility can receive up to nine trains per day and process up to 2500 tonnes per hour. The Brightwater automation and electrical team designed an automated rail receival and unloading system using RFID technology to recognise each individual wagon of product before transporting the material to allocated storage areas. The entire system processes up to 2500 tonnes per hour and is able to unload and store 36 wagons of aggregate and or sand within 90 minutes.

A bespoke product tracking system was installed to enable Holcim to track the product as it is travelling through the conveyor system. This allows for a higher product throughput due to less dead belt space on conveyors and prevents contamination between products. A moisture addition system was also developed to allow the product to be conditioned as well as minimising the impact of dust on site.



On-site Engineering Services

Brightwater has a dedicated on site maintenance staff working throughout New Zealand. Our mission is to provide fit for purpose on site engineering solutions that reduce our client's production downtime and minimises the impact to their operations.

We achieve this by having a professional and well experienced team of engineers and supervisors who oversee a skilled and committed workforce of trades people, dedicated to delivering high quality and efficient workmanship.

Our Commitment to Clients

We are committed to working closely with our clients to understand key project and operational drivers. Our organisation structure allows us to be flexible and scalable to meet the exact requirements of our clients. This enables us to provide bespoke solutions that best meet our client's specifications.

Our maintenance and repair staff work nationwide, undertaking small scale work as well having the resources and capability to manage large quarry plant's maintenance shutdown projects.

Our services include:

- On-site Installation and Plant Modifications
- Electrical Maintenance and Repairs
- General Plant Repairs
- Efficiency Improvement Projects
- Shutdown Planning and Commissioning Activities
- Plant Health & Safety Audits
- Surveys and Inspections of Plant and Equipment
- Asset Management and Scheduled
- Workshop Fabrication and Machining





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