



Turnkey Projects Capability Statement

YOUR ENGINEERING PARTNER





Brightwater

Turnkey Providers

For more than three decades Brightwater has successfully delivered turnkey bulk materials handling projects in the Quarry, Mining, Industrial Energy, Dairy and Wood Processing industries.

We have an experienced multi-disciplined team that gives us the capability to deliver both large and small industrial engineering projects from initial concept through to commissioning, operation and maintenance servicing.

Single Point Accountability

A project may be complex but working with an engineering company to deliver the project should be simple. Our conceptual design, project management, fabrication and construction management teams oversee all aspects of a project from initial concept through to final commissioning. This capability allows us to offer single point accountability for all aspects of the project, providing our clients with a seamless and low risk solution.

Contracting Models

We have delivered both greenfield projects as well as plant and process upgrades in the following areas:

- Quarry & Aggregate Plants
- Mining & Materials Handling Plants
- Coal Processing Plants
- Gold Processing Plants
- Coal Road to Rail Transfer Facilities
- Industrial & Potable Water Treatment Plants
- Complete Fuel & Biomass Handling Systems
- Bulk Materials Storage & Handling Facilities

Turnkey Capabilities

From initial concept and design engineering to production of full working drawings, workshop manufacturing, site installation and finally to start up commissioning, our process is an integrated and complete service. Throughout the project our team of experienced and committed engineers provides full project management services and apply best-practice total quality control at all stages.



Project Management

Brightwater has a team of professional Project Managers, Project Engineers, Cost Engineers and Planners. Our staff have worked on a wide variety of engineering projects both small and large across multiple industries. This depth of experience gives our team the ability to adapt quickly and customises our service delivery to best suit the unique requirements of a client's project.

Concept & Feasibility

Brightwater engineering staff regularly undertake detailed conceptual, pre-feasibility and feasibility studies. Our real world engineering and construction experience ensures the studies we produce deliver fit for purpose outcomes.

Engineering & Design

With teams based in Nelson and Auckland we are able to provide cost effective fit for purpose technological solutions to meet our client's process and production requirements. Our collaborative approach ensures all our clients are included in the decision making process at every stage of the project. This close partnership produces the best design solution and leads to faster implementation of technology solutions at an optimal cost.

Procurement

A Procurement specialist (or specialists) is assigned as part of each project team to ensure value improvement from the start of the project life cycle. At every stage specifications and scope of work documents will be reviewed by procurement to maximise market participation, ensuring our clients receive the most cost effective rates possible.



Fabrication

With two fabrication workshops in New Zealand as well as overseas fabrication partners, we have significant fabrication capabilities and workshop facilities allowing for complete vertical integration from raw material through to final calibration.

On Site Construction

Brightwater has considerable experience in multi-disciplinary construction management and execution, installation of structural steel, mechanical & electrical works and process equipment. We have the skills, resources and equipment necessary to provide our clients with vertically integrated construction packages including civil, mechanical, electrical and plant automation.

Commissioning

To support our professional engineers and project teams, Brightwater employs specialist commissioning engineers and technicians. They are highly experienced in trouble shooting faults and dealing with the complex issues of mechanical, electrical and control interfaces encountered on the industrial projects we undertake.

Onsite Servicing & Support

Brightwater has onsite service and support staff operating throughout New Zealand. We provide a full range of maintenance and engineering troubleshooting services to our clients to ensure their capital projects running at optimum efficiency with minimal downtime.

Our Approach to Health & 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 Health & Safety 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.

Brightwater staff who carry out site maintenance and erection work have the following accreditations:

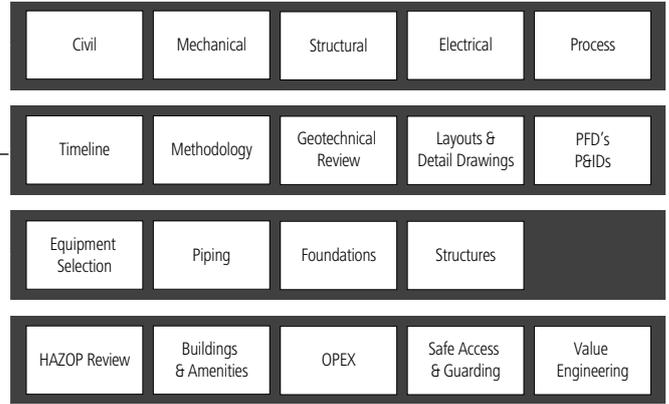
- Riggers & Safe Slinging of Loads Tickets
- Confined Space Tickets
- EWP & Forklift Tickets
- Crane Tickets
- First Aid
- Fall Arrest/Safe Work at Heights
- Permit Receivers/Hazard Identification Tickets

ZERO HARM
ALL ACCIDENTS ARE PREVENTABLE

Capabilities

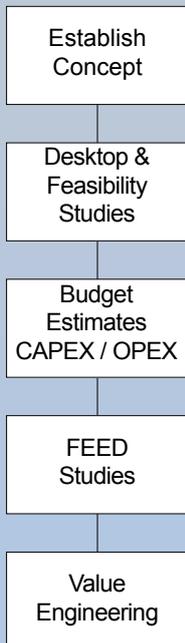
EPC + EPCM

Our capabilities are delivered through either a complete service or through providing a single, or selection of the services to meet your specific requirements.



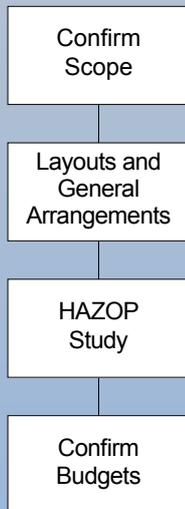
Concept & Feasibility

Brightwater has the necessary level of professional resource and experience to undertake detailed FEED studies including conceptual, pre-feasibility, feasibility and definitive studies within our operating sectors.



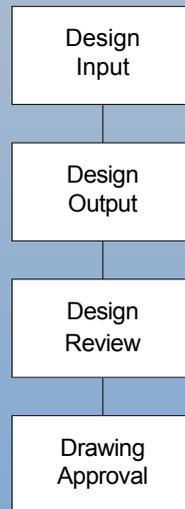
Establish Project

The time spent in establishing all aspects of the project directly impacts on how well the project will be executed. Confirming scope and having accurate sign off with the client is critical in ensuring the project expectations will be delivered. Performing detailed and thorough HAZOP studies will ensure the project is set up in such a way that the safety of all those working on the project and the completed plant once operational, has been taken into account with all measures put in place to prevent injury and achieve Zero Harm.



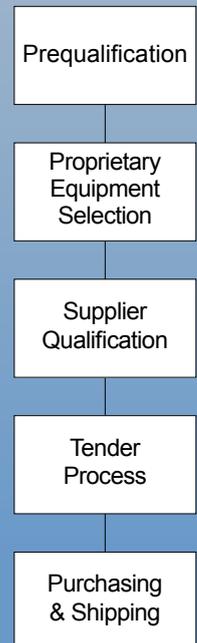
Engineer & Design

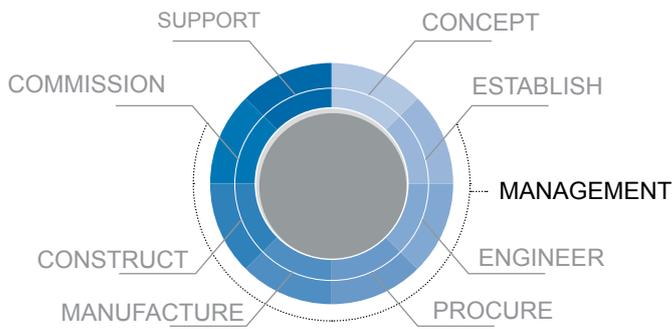
Brightwater provides cost effective 'fit for purpose' technological solutions to meet our client's process and production requirements. Our open communication and experienced engineering expertise allows us to implement a solution that ensures maximum benefit to the project, client and major stakeholders.



Procure

A Procurement specialist (or specialists) is assigned as part of each project team to ensure value improvement from the start of the project life cycle. Typically specifications and scope of work documents will be reviewed by procurement to maximize market participation. In conjunction with the project manager and engineers, a Package Register is developed together with a contracting plan. A risk analysis is also completed to identify opportunities and threats with response plans. A baseline plan is then issued and agreed for organizing, monitoring and control functions.





Project Management

Brightwater has a large pool of professional Project Managers, Project Engineers, Cost Engineers and Planners. This team offers full Project Management services to international standards, utilising software systems such as Candy, P6 and JobPac as well as the high level of experience and diversity of the professional engineers within the team. Our Project Managers have qualifications under either PMI or Prince 2 standards.

Manufacture

Brightwater has significant fabrication capabilities and workshop facilities allowing for complete vertical integration (raw material through to final calibration). Our manufacturing capabilities also include heavy plate / section rolling, submerged arc welding, heavy manipulators and extensive machining capacity including large CNC lathe machines.

Timetable & Logistics

Management & Coordination

Procurement

QA System & Checks

Construct

Brightwater has considerable experience in multi-disciplinary construction management and execution, installation of structural steel, mechanical & electrical works and process equipment. We have the skills, resources and equipment necessary to offer vertically integrated construction packages including civil, mechanical, electrical and plant automation with facilities throughout Australasia that can provide modularisation and off-site pre-assembly.

Subcontractor Selection

Health & Safety Implementaion

Site Management

QA System & Checks

Commission

To support our professional engineers and project teams, Brightwater employs specialist commissioning engineers and technicians. They are highly experienced in trouble shooting faults and dealing with the complex issues of mechanical, electrical and control interfaces encountered on the large scale industrial projects we undertake.

Programmed & Coordinated

Site Management

As Builds

Training

Value Engineering

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 when you need it.

All Aspects of Project Scope

Operations Personnel

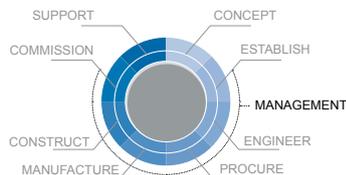
Spare Parts

Onsite & Remote

FULL TURNKEY SOLUTION

Coal Handling and Preparation Plant

SOLID ENERGY



PROJECT DETAILS

Overview:

Solid Energy New Zealand operates an open-cast coal mine on the Stockton Plateau, 35km north of Westport, on the West Coast of the South Island, New Zealand. The Stockton mine produces high-quality coal for export to the steelmaking industry.

As of 2008 the Stockton mine had accumulated stockpiles of up to 15 million tonnes of contaminated coal due to operating in areas of historic underground mining. A prefeasibility study conducted by Brightwater and Downer Engineering identified that a Coal Handling and Preparation Plant (CHPP) would produce 10 million tonnes of saleable high value product from this stockpile.

Solution:

Solid Energy engaged Brightwater as the principal contractor to design (in conjunction with Downer Engineering), procure, and manage the fabrication and construction of the NZ\$124 million green-fields Coal Handling and Processing Plant project, all within a fast-track schedule.

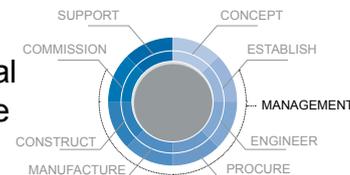
The coal handling and processing plant was designed to separate large volumes of high-value coal from rock, old underground mine propping timbers and other waste material, and washing and grading it. The Coal Processing Plant (CPP) was designed to handle between 600,000 tonnes and 1 million tonnes of coal a year. The two key processing steps in the CPP are a dense-medium cyclone for the separation of coarse coal (-60mm(ww) +1.4mm), along with three parallel circuits of hydraulic classifiers for the separation of fine coal (separation (-1.4mm (ww) + 0.045mm) minimising hazards.



FULL TURNKEY SOLUTION

Rooty Hill Regional Distribution Centre

HOLCIM AUSTRALIA



PROJECT DETAILS

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. The entire project management, and design work, was carried out by Brightwater's New Zealand based staff.

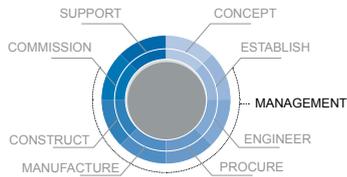
Operating 24 hours a day, seven days per week, the facility can receive up to nine trains per week and unloads up to 2500 tonnes per hour. The project was completed in mid-2015 with final commissioning taking place during August 2015.



FULL TURNKEY SOLUTION

Coal Storage & Handling Facility

BULLER COAL LIMITED



PROJECT DETAILS

Overview:

Buller Coal Limited owns and operates all of Bathurst Resources Limited's operations on the Buller coal field, including 10,000 hectares of exploration and mining permits, the planned Escarpment Mine project and the operating Cascade mine on the edge of the Denniston Plateau.

As the capacity of their West Coast operations increased, Buller Coal explored options and solutions for the transportation of coal via the Port of Westport to the Port of Taranaki in New Plymouth. In particular a facility for the receipt of coal via road and eventually rail transport that would allow for the temporary storage and efficient ship loading of the coal.

Solution:

The solution needed to ensure the highest standards of operational Health & Safety, be economical, and scalable as volumes increase from an initial forecast of 200,000 tonnes of coal per annum to a potential 400,000 tonnes of coal per annum.

Brightwater was engaged to manage the Design, Engineering, Procurement and Construction phases of the project. The design and engineering team worked very closely with Buller Coal to ensure that the complex long term requirements for the facility would be met.

The design included an elevated ramp to allow trucks with tipping trailers to unload through a discharge grizzly into a bay for Front End Loader (FEL) transfer to the stockpile. The solution needed to incorporate existing facilities, in particular an existing ship-loading conveyor for off-loading from the facility.

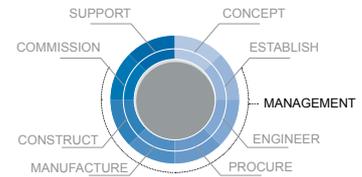
The building had to have an initial operating capacity of +3000 tonnes with a stockpile height up to 5 metres. The building was designed to allow for an increased capacity of 9000 tonnes with the introduction of elevated mechanical in-feed and mechanical reclaim.



FULL TURNKEY SOLUTION

Water Treatment Plant

YASHILI NEW ZEALAND



PROJECT DETAILS

Overview:

Yashili is one of the leading infant formula producers in China. In 2014 Yashili developed a 8mt/hour Infant Milk Formula facility in Pokeno, north Waikato.

Brightwater was contracted to deliver a potable water plant capable of treating and producing 3,000m³ of water per day. Yashili acquired resource consent to receive raw water supplied from a bore adjacent to Yashili's property. This raw water presented its own challenges being high in iron and manganese and extracted from the ground where it's remained for over 150 years.

Additionally, Brightwater was contracted to design the building which contained the plant, associated civil design for the adjacent Waste Water Treatment Plant and supply various ancillary equipment required for the water treatment area.

Solution:

Brightwater along with technology partner Ixom Australia, were tasked to deliver a complete engineering, procurement and construction (EPC) water treatment facility. Brightwater worked closely with Yashili throughout the design stage to ensure the finished product would meet their unique requirements.

The final plant comprised of innovative media filtration technology, when coupled with Chlorine Gas chemical dosing, was able to treat the water within spec without altering the incoming pH. This was a major advantage over standard green sand filters and was engineered to be a substantial cost saving for Yashili's annual chemical inventory. This also allowed the reduction in size of the associated storage tanks and the equipment required for dosing and pH control. The solution presented further benefits with the raw water constantly changing composition and having no effect on the potable water end product.

In addition to this, Brightwater also developed and constructed a softening plant using advanced long life resins and a full Salt Saturator regeneration system.





Brightwater

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