



# Marine Engineering Capability Statement

YOUR ENGINEERING PARTNER





## Brightwater

Minimise operational downtime and cost by selecting a dedicated marine engineering provider using highly skilled and efficient staff to deliver fit for purpose on time solutions.

Brightwater provides a wide range of experience in marine engineering. Our mission is to provide industry leading engineering services to reduce production downtime and minimise impact on our clients operations.

We achieve this by having a professional and well experienced team of project managers, engineers and supervisors who oversee a skilled and committed workforce of trade's people, dedicated to delivering high quality and efficient workmanship to the marine industry

### 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 engineering solutions that best meet our client's specifications.

### Capabilities

Our engineers carry out a wide variety of ship repairs and refurbishments on both small and large vessels. With a dedicated marine workshop located in Port Nelson we are able to undertake a wide variety of ship repairs and refurbishments on small and large commercial vessels.

Our Capabilities include:

- Hull Plating
- Certified Welding
- Full Marine Refits
- Winch Overhauls
- Steel Fabrication
- Fish Pound and Fish Hold Maintenance
- Stainless Steel Fabrication



- Aluminium Fabrication
- Maintenance Supervision and Labour Solutions
- Heavy Fabrication and Assembly
- Fitting and Machining
- Project Management
- Pipe Welding
- Oil Rig Repairs & Maintenance

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



## Project Examples

### Taudre Vessel Repairs

#### Overview:

The Taudre is 220 tonne 29 metre fishing vessel and is the largest of a privately owned supplying fresh chilled fish to the local and export market.

Recently the vessel underwent significant repairs on the slip at Port Nelson after an incident at sea where it sustained significant damage to the propeller and intermediate shafts and bearings. Brightwater was the main contractor providing expertise in the rebuild of the shafts and bearings as well as hull repairs and general maintenance work.

#### Solution:

Damage to the vessel was assessed by Brightwater's engineers and repair methodology and budgets were determined. The damaged shafts and bearings were removed from the vessel and sent to the Brightwater workshops for repair and machining. New parts were procured from various international suppliers and freighted to Nelson. Lubrication and cooling systems were rebuilt using the latest technology and condition monitoring systems were updated to provide real time status of all the transmission system.

The reconditioned shafts and bearings were fitted in the vessel, laser aligned and adjusted prior to the vessel coming off the slip. In the water final alignments and adjustments were made and sea trials undertaken.

Damaged hull plate sections were cut out and replaced by Brightwater heavy fabricators, and various pipes and valves were upgraded in the engine room.



### Antarctic Chieftain Vessel Repairs

#### Overview:

The Antarctic Chieftain is a fishing vessel co-owned by Talleys and the Sealord Group. Brightwater was contracted in 2015 to undertake repair and maintenance work on the vessel which was damaged by ice during operations in Antarctica.

#### Solution:

Brightwater was tasked with repairing a seven meter by three meter area of damaged hull plate. The repairs involved cropping the damaged section and replacing it with a new heavier section and the repair and replacement of sections of the ships frame including the ships ribs.

The original hull plate was 12 millimetre thick and this was replaced with thicker 16 mm thick steel plate. The work included confined space work and all the repairs were undertaken by our certified welders using Brightwater weld procedures and all repairs were surveyed following the work.

The entire job was expected to take two weeks. The Brightwater team completed the task in under ten days, in order to achieve this two on site teams of 5 tradesmen worked around the clock with alternative day and night shifts.



## Kan Tan IV Oil Rig

### Overview:

In August 2014 Brightwater's Marine Engineering team took part in the floating of the Oil Rig the Kan Tan IV that was transported to New Zealand from Malaysia by the worlds largest transport vessel, the Blue Marlin. The Blue Marlin sailed into Admiralty Bay in the Marlborough Sounds where a team of engineers including 22 Brightwater staff worked to release the Oil Rig from the vessel.

### Solution:

In order to release the Kan Tan IV, the Blue Marlin was partially submerged and then the engineers proceeded to cut the Rig free. Brightwater staff worked in two shifts for a week to cut the hold down points and remove all the deck fastenings so the Rig could be floated free.

The Weather conditions were not ideal and it made access to the vessel difficult. In spite of the weather the Brightwater team completed the job successfully. The Kan Tan IV was then towed by a support vessel to the Taranaki Basin where it will drill the Makutu-1 Well to 4850 metres after being moored in 135 metres of water.



## Ship Refuelling Pipelines

### Overview:

In March 2016 Brightwater extended the existing Diesel and Light Fuel Oil pipelines by 200m at Port Nelson to create a new ship refuelling berth. The pipelines had to be run on new piles and slung underneath an existing wharf to the new refuelling berth.

### Solution:

Brightwater undertook the detailed piping design including thermal, wind, seismic and pressure analysis to ensure the new and modified piping confirmed with the requirements of the ASME B31.1 piping code.

The piping was installed and welded following Brightwaters weld procedures by our ASME certified piping welders, weld inspection was undertaken using Brightwaters in house CBIP accredited welding inspector.

Brightwater fabricated all the stainless steel pipe support brackets and worked in with the pile designer and pile contractor. As the port was always in operation the scheduling of the installation was well planned to minimise disruption to operations as well as working in with the tide cycles as the pipelines were at the high tide mark.

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