

Introduction

- Australia's largest pontoon & marina builder
- Over 35 years world class berthing experience
- Multiple award-winning International team of over 160 people
- Shared factory footprint in excess of 36,000 sqm
- Superyacht & Marina experience worldwide
- Significant local and State Government experience



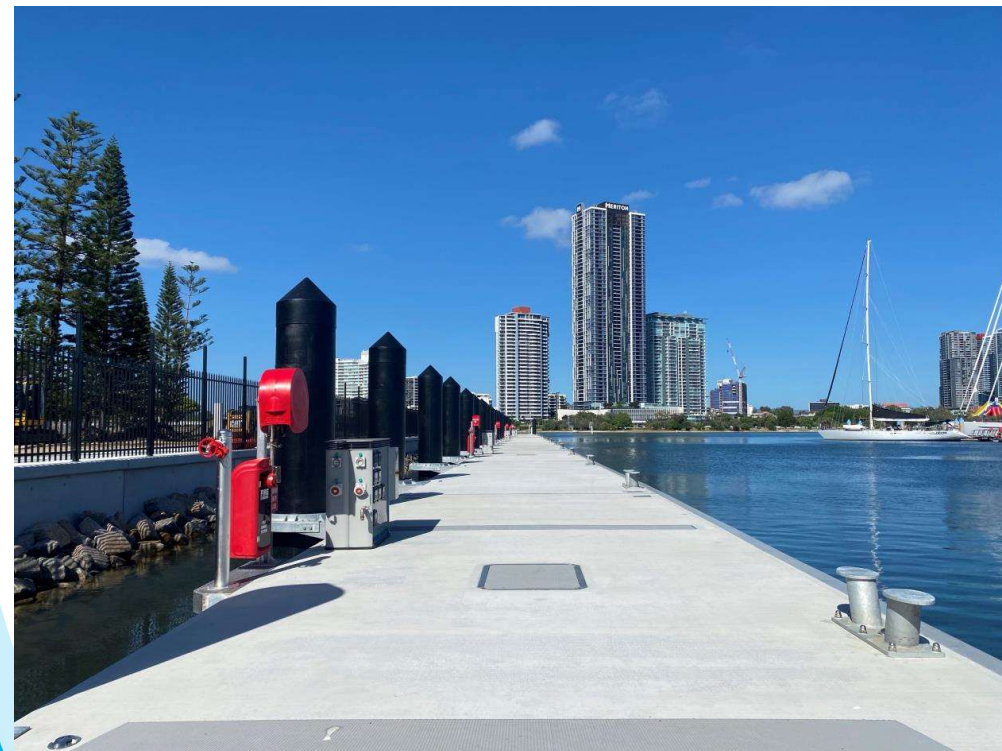
Australia's largest Megayacht berth



SMBI Ferry Terminals Upgrade

Commercial Products

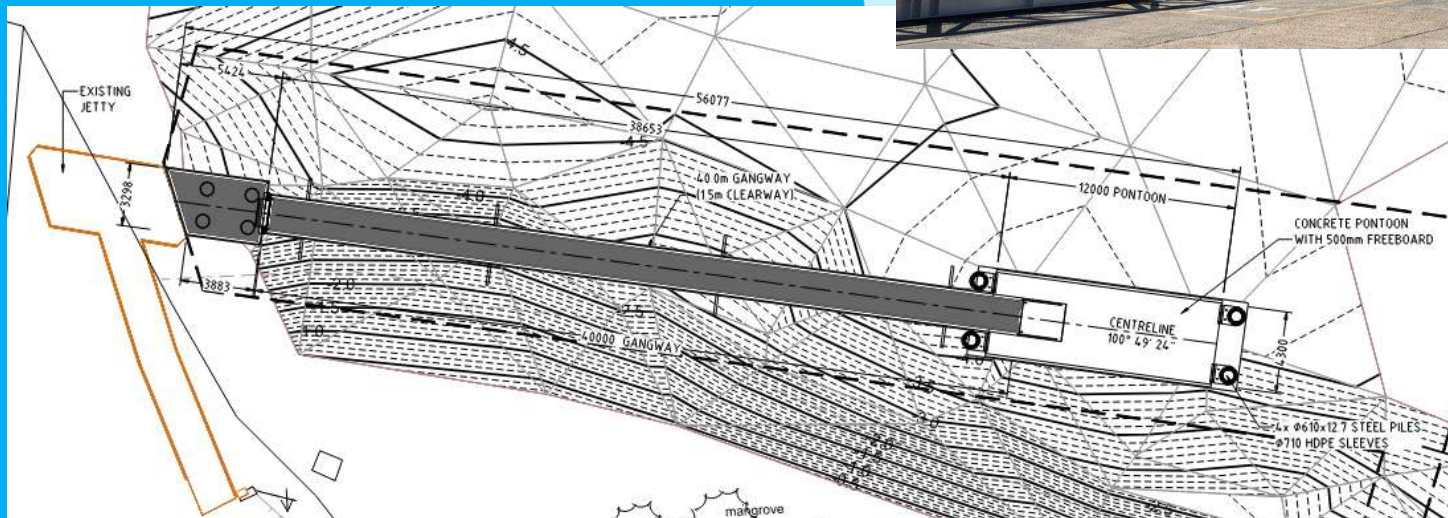
- Superyacht Berths
- Ferry Terminals
- Wave Attenuators
- Super Elite & Mega Elite Marina Systems
- Elite Marina System
- Aluminium pontoons
- Gangways
- Superior Modular Dock
- Marine Accessories:
 - Boatlifts
 - Jetski Docks
 - Mooring Buoys
 - Spare Parts



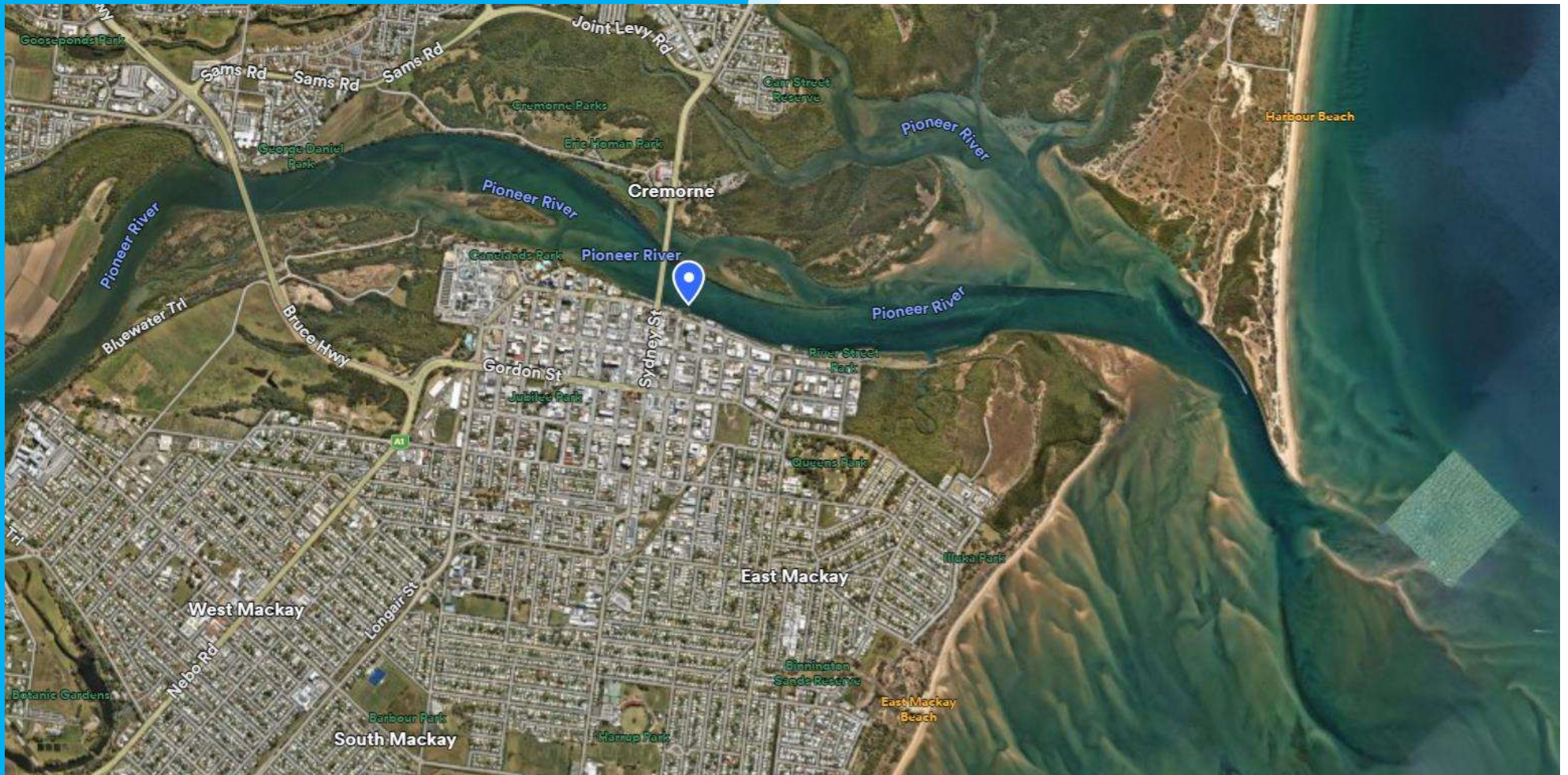
160m Mega Elite Pontoon, accommodating 135m vessels

Mackay Gangway Highlights

1. Single Span vs Two-Piece
2. Material Selection
3. Avoiding Failure in Torsion
4. Gangway Hanging Brackets
5. Three-Piece Jointing System



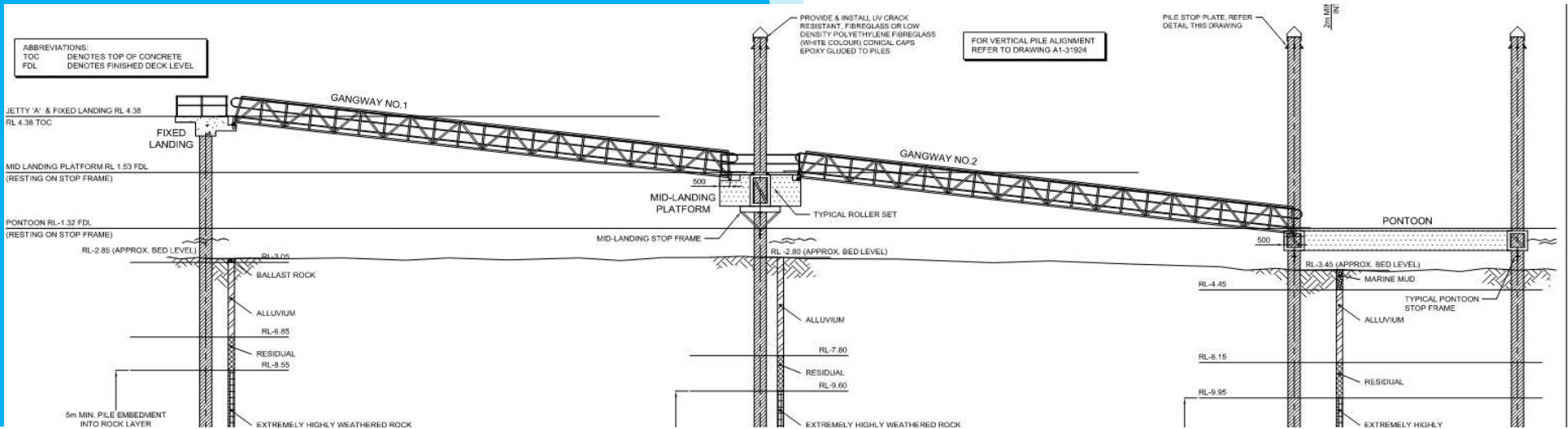
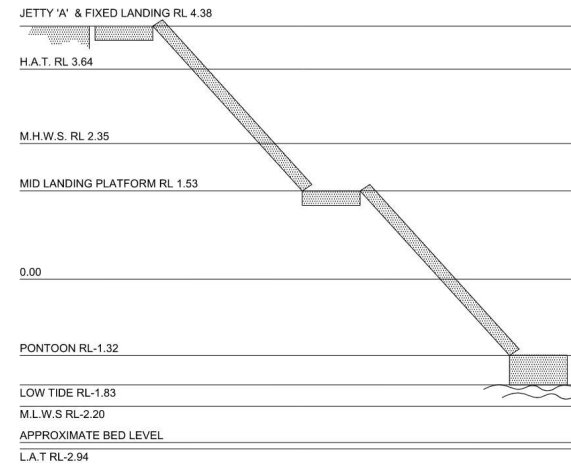
Location



1A: Tender Design



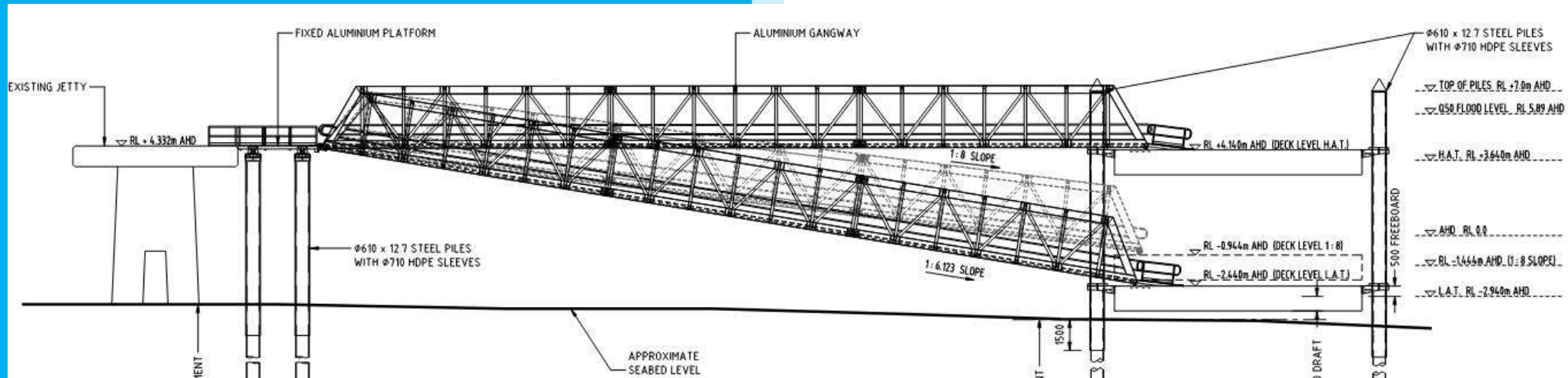
- Bluewater Quay, Pioneer River Mackay
- Two-piece gangway with floating mid-landing platform on stop frame.
 - 6.6m water variation (L.A.T to H.A.T) plus an additional 2.25 for Q50 Flood.
 - 1:8 slope @ 80%, split across two gangways for DDA & AS3962.
 - All steel structure – piles, gangways, mid landing platform & pontoon.
 - Pontoon resting on seabed at low tides



1B: Construction Design



- Single Span Gangway
- Unrestricted Access - DDA & AS3962 Compliance
 - 4kpa live load
 - 4.5kN point load
- Debris Actions to AS4997
 - 2m/s flood & 0.57m Wave
 - 1.2x3m debris mat impact & a minimum of 10kN/m over the length of the structure. Provision for 2t log impact.
- Aluminium complies with AS1664
 - 6082 – T6 or similar
- AS1170 Wind Loading – Region B



2: Material Selection



Aluminium 6000 series Vs Steel

- Proven performer in marine & structural applications
- Lightweight – 8.5t gangway weight vs >25t in steel
 - Install & transport efficiencies
- Fully recyclable
- Significantly reduced Lifecycle Cost Analysis (LCCA)
 - Self-healing oxidation properties, with option to etch & paint if desired.
 - No postprocessing required (paint, galvanising etc)
 - Decarbonisation advantages & reduces waterway contamination



3: Strategies to Mitigate Failure in Torsion

- Thicker or doubled up top and bottom chords
 - Conventional approach however this adds mass & labour
- Deeper truss and intermediate walkways
- Use of 4 sided structure & outriggers
- Single PFC in main chords for mass reduction & stress relief.
 - PFC in this case was also 30% cheaper than SHS from Aus mill.
 - PFC offers cycled torsion with significantly reduced stress cracking
- Flexible Landside Connection

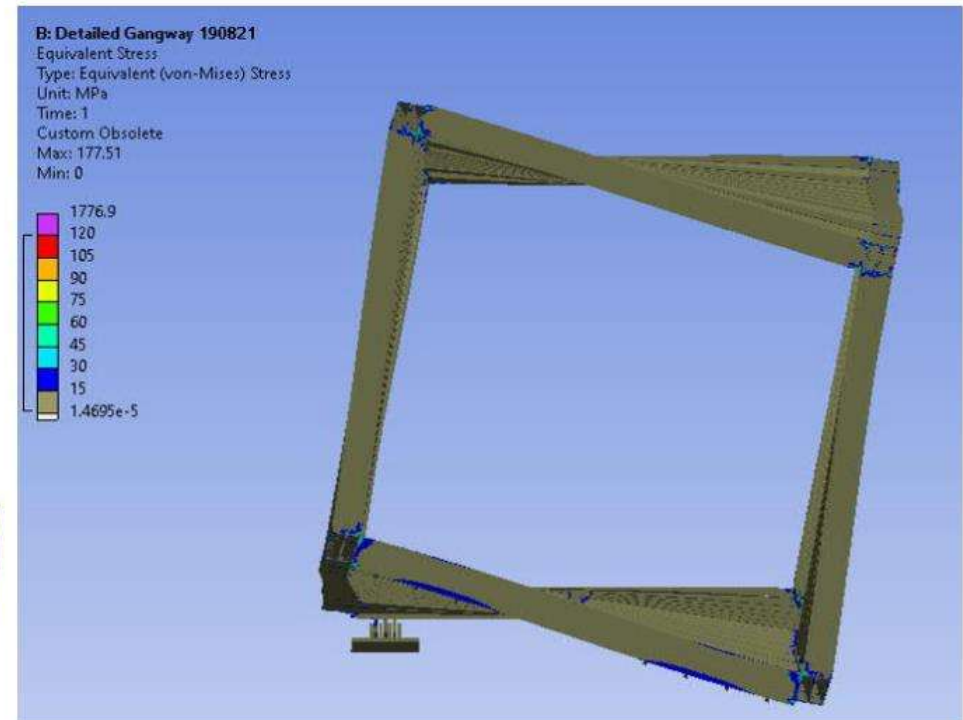
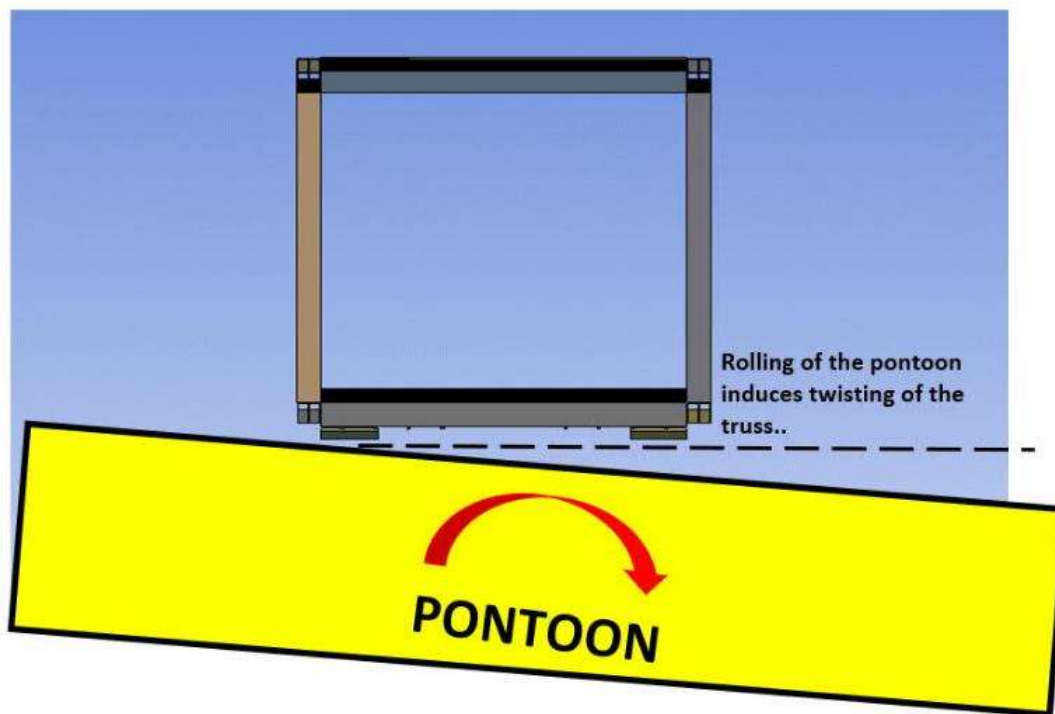


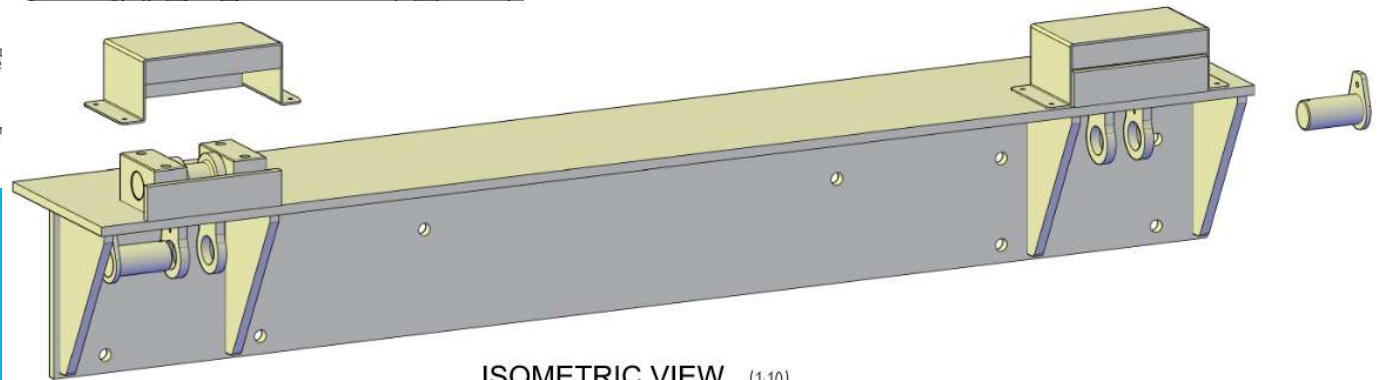
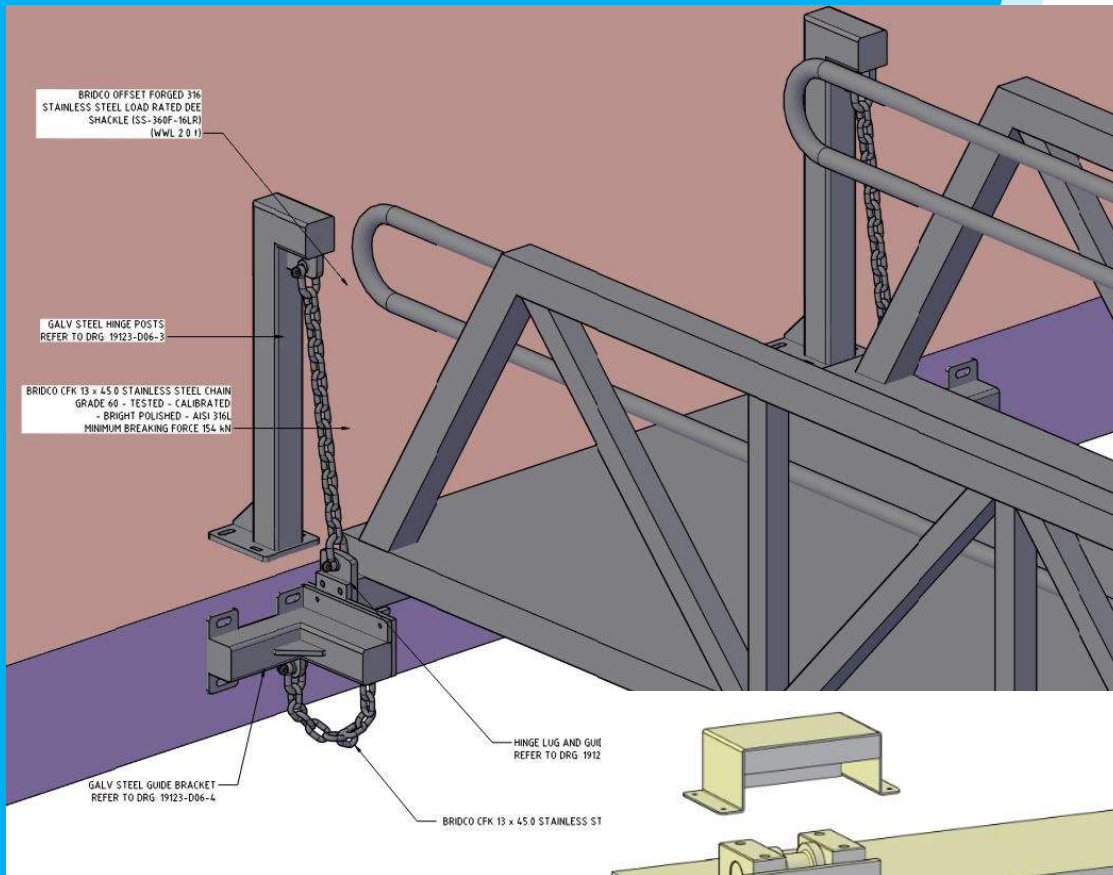
4. Gangway Hanging Brackets

- Allows gangway stress relief at landside connection due to pontoon rolling motion.



- General feedback from various remnant life assessments: stress buildup @ welded connections from wave action results in reduced fatigue life when fixed on landside.







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5: Three-Piece Design

- Transport Efficiencies
- Fishplates let into main chords to transfer load into full member
 - Rather than bolting perimeter flange (welding shrinkage)
- CNC aluminium packing shims
 - @ each connection to pack the centre section 100mm higher. Once installed, the structure dead weight brought it straight.
 - Our strategy to expedite fabrication - rather than rolled sections or mitred cuts.



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Pontoon & Landing

- Up to 50yr design life
 - Full FRP reinforcement in 5 sided concrete pontoons.

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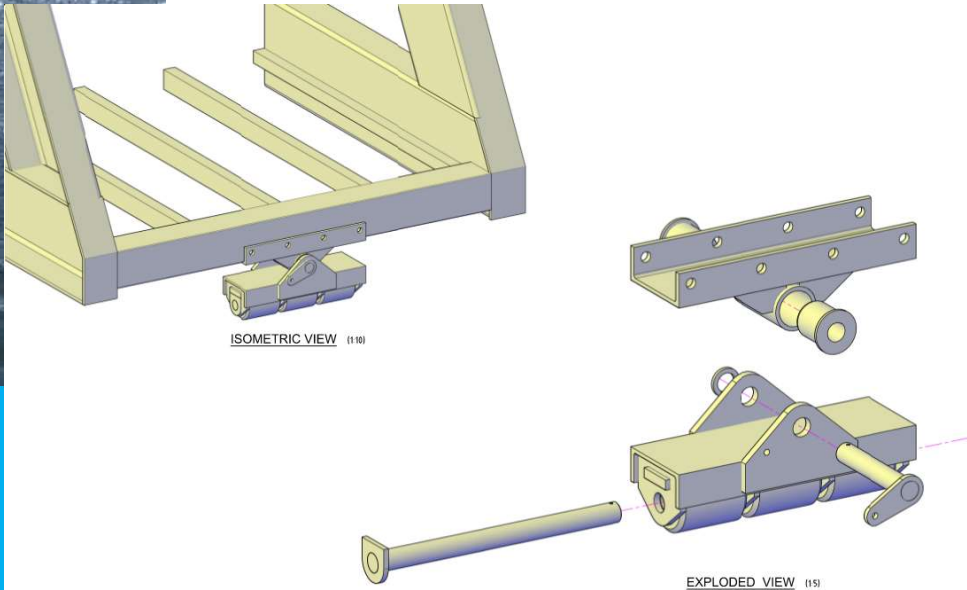


Other Projects



Tas Ports – 30m gangway with bump stops

Pontoon Roller Pivot Concept



Summary

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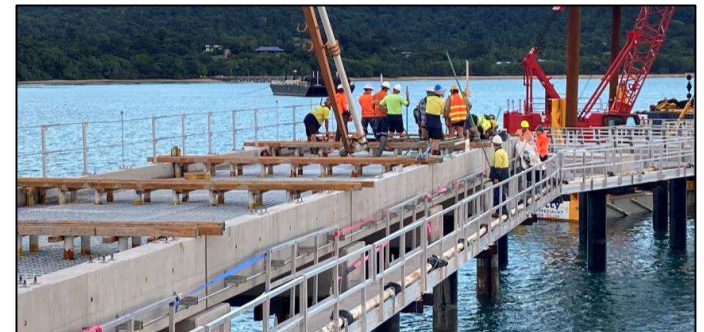
- With some additional design work, we all can build:
 - Larger single span truss structures
 - Incorporate fabrication & assembly efficiency into designs
 - Reduced lifecycle costs with more innovative materials
 - In line with UN sustainable development goals



Capabilities



- Vertically integrated business
- In house design, fabrication & installation



Why do D&C with us?

Reduce your Risk

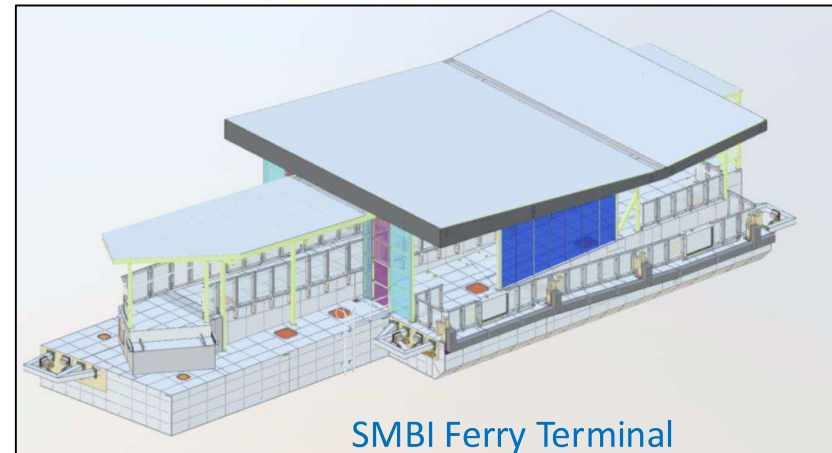
- No contractual separation between designer, engineer, fabricator or install contracts
- Own and operate a fleet of over 30 trucks, cranes, barges, vans and workboats
- Specialists in installation for marinas, public sector ferry terminals, government infrastructure and residential projects
- Competent & verified delivery partner – we stand behind our product



A few of The Superior Fleet

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SMBI Ferry Terminal



Clump Point Jetty

Aluminium pontoons

- 34 aluminium pontoons built and currently in operation
- Clients include the State of Queensland, Brisbane City Council, Lendlease and Ports North
- 160 staff with in-house design, fabrication, delivery, installation and commissioning



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Aluminium pontoons

Maintenance Case Study

- Stradbroke Island Ferry Terminal; maintenance inspection after 11 years operation
- Freshwater ballast allows for easy inspection, freeboard adjustment or modifications
- Exceptional condition

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Exterior protective paint in good condition. No exterior damage to Hull.



Fig 2.4.5: Typical condition



Fig 2.4.2: Bottom plate condition



Stradbroke Island Ferry Terminal

Super Elite Pontoons

Cockle Bay

- 115 x 6 sided concrete pontoons
 - 74 x Rectangular
 - 23 x Trapezoidal
 - 15 x Curved
 - 3 x Irregular
- 3 x all access 5kPa aluminium gangways



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Sizeable Gangways

- From 1 metre to 50+ metres long
- Fabricated from aluminium or steel to suit requirements
- Custom design to suit heavy duty industrial specifications



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An aerial photograph of a large, busy marina. The water is dark blue, and the sky is a lighter blue with scattered white clouds. In the foreground and middle ground, hundreds of white yachts and sailboats are docked at long, dark wooden piers. The boats vary in size, from small runabouts to larger motor yachts. In the background, a city skyline is visible across the water, featuring several tall, modern buildings. To the right, there are some industrial or commercial buildings with white roofs. The overall scene is one of a well-maintained and active waterfront area.

WORLD CLASS MARINAS

SOUTHPORT YACHT CLUB
FUEL