



Pinkenba Wharf

High-tech world-firsts at new wharf

A combined drive for innovation and planning foresight from within the **Wagner Corporation** and **Wagners Holding Company Ltd** has seen the successful completion of a unique and strategically valuable wharf adjacent to the Wagners Pinkenba cement plant on the Brisbane River.

In a world-first heavy-duty application of Wagners' New Generation Building Materials, the aim was to reinvent the design of wharf structures by using CFT and EFC[®] materials in the decking systems' construction. The end result is a 100 per cent non-corrosive, non-ferrous modular deck that can be exposed to all required loads, while providing long-term durability and low levels of maintenance.

It also opens up seamless export options for Wagners in the future. The next stage of wharf development will see automated offloading from ships via conveyors to the storage shed and proposed clinker storage area, which will increase efficiencies even further.

Design and construction involved a number of 'firsts' for the team, and have left a legacy of industry-leading knowledge and experience across the business. This includes preparation of a full Maritime Security Plan, developed with the Department of Home Affairs' Office of

Transport Security, covering all security risks, gate operations, security arrangements, and a terrorism safety plan. We also believe this is the largest composite fibre infrastructure job completed to date anywhere in the world, with the highest capacity (40,000 tonne ships), and the largest use of structural fibreglass re-bar in Australia in a single job.

Many long hours and extra effort were contributed to meet deadlines over the project's life. The teams involved can be extremely proud of the end result, which is now a showpiece case study for Wagners' products and capabilities.

Environmental impact and safety

Wagners' priority focus on safety and environment meant the risks and challenges of working in a marine environment were carefully managed. There were no spills into the Brisbane River during construction, and zero Lost Time Injuries (LTIs) throughout the project.

The use of Wagners' New Generation Building Materials not only underpins the wharf's performance and durability, but also significantly reduces the amount of embodied carbon emissions from construction and future life. Stormwater and wastewater pollution issues are apparent on many wharf

facilities around the State, so by incorporating water-sensitive design into the Pinkenba facility, the fall-through of materials into adjacent waters is avoided. Stormwater and other contaminants are retained and returned to shore for treatment. Combined with other measures such as cutting back truck movements by almost 2 million accumulated kilometres travelled (from using the Wagners' wharf rather than Port of Brisbane Common User Wharf), supply-chain operation, maintenance and disposal, an enormous figure approximating 68,333 CO₂eq reduction in tonnes over the wharf's 40-year design life is achieved.

VITAL STATISTICS

Initial design: 2008

Redesign and certification: 2016
(VITAL)

Project completion: 2018

Total EFC[®]: 1,600m³

Total CFT: 573 U-Girders, 1
50 tonnes (350km) FRP reinforcing,
1,500m service droppers (upcycled
and new cross-arms),
500 FRP fascia panels

Workforce hours:
40,000 construction team
27,000 Precast
28,000 CFT
92,000 Workshop
1,160 Transport
+ many administration areas