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York Civil – Port of Broome WEOL Project: Editorial for Australian Ports News

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York Civil delivers Broome WEOL project ahead of schedule

Leading Australian civils contractor York Civil recently completed a major wharf extension of life (WEOL) project for the Kimberley Ports Authority (KPA) at Broome.

The Port of Broome, located about 2200km north-east of Perth, is the major port servicing the Kimberley region of Western Australia and plays a vital role in the cattle export trade and as a stop-off place for cruise liners.

It is also a critical base for supply vessels for the offshore oil and gas industry, fishing charter and pearling boats and is where the majority of containers and fuels coming into the region are received.

“The wharf at Broome comprises a 650m long and 8m wide access jetty leading to a 325m long and 26m wide wharf. It was built in the 1960s with an extension added in 2006,” said York Civil Project Manager, Christian Joder.

“The structure consisted of steel piles and headstocks supporting a steel deck with a 160-200mm concrete cap on top of that. Our client, the Kimberley Port Authority, was aware that the current structure had reached its 50-year design life and wanted to future proof the wharf by upgrading its capacity to accommodate an increase in port activities,” he said.

York Civil was awarded a contract in early July 2015 to assess the wharf and provide a design that would prolong its life by 20 years with the proviso that the wharf remained fully operational at all times.

The wharf also carried a number of services including fuel import and export lines, water lines for firefighting and domestic use, cable trays and a seawater line for the Department of Fisheries use that could not be interrupted.

Mr Joder said a detailed assessment of the wharf structure revealed that the support piles and headstock beams were mostly sound. The existing steel decking was identified as a high risk structural component due to deterioration.

The solution to meet KPA’s requirements, proposed by York Civil in conjunction with its design consultants Aztec Analysis, involved the addition of a new concrete deck. This new deck was to be independent of the steel deck using existing beams and piles which required only minimal upgrade works to accommodate the increased design loads.

Connections to the beams and piles were achieved by cutting open the steel deck at required locations and the new reinforced concrete deck which, at 380-440mm, was more than twice as thick as the old deck was laid using the beams to support it independent of the steel deck.

The plan called for the project to be completed in stages, with works scheduled to take place during times when sections of the wharf were not required for shipping operations, and when vehicular traffic on the wharf was at its lowest.

Kimberley Ports Authority approved the project plan and work got underway on November 6, 2015 in the face of challenges posed by the confined working space, the extremely hot and humid conditions experienced in Broome during the monsoon season, and the natural hazards of working at height in a marine environment.

One of the most difficult areas to work was the wharf neck, which had to be kept open to vehicular traffic at all times but was so narrow there was minimal room to accommodate safety barriers to protect York Civil work crews. To mitigate the hazard, works were undertaken in the afternoon when traffic was greatly reduced. This also helped to reduce workers' exposure to the heat of daylight hours.

In fact, with the detailed planning and interface management of both York and KPA, works went very smoothly with work crews moving from stage to stage, removing the old concrete, cutting the decking, welding stiffeners to the headstocks, installing reinforcing for the new concrete deck, and pouring concrete at the rate of 150m³ a week on the wharf neck.

During the project, 1851m³ of concrete was removed from the structure and disposed of, steel decking was cut, 944 tons of concrete reinforcing was installed, 4104m³ of concrete was poured, and 1058 steel stiffeners welded into place on the headstocks and painted.

Completion of the project was scheduled for December 2016, however things went so well that most work was completed early with the site being fit for purpose in September.

WA State Manager, Dallas Keane said York Civil was proud that works had been completed under time and within budget, with more than 48,000 hours worked and no lost time injuries in spite of the hot and humid conditions, especially given works were mostly undertaken at height in a marine environment while contending with a high density of operational traffic in the confined workspace.

York Civil's West Australian office is also delivering the Swan River Pedestrian Bridge and Charles Street Bus Bridge and Busway.

Editorial for Australian Ports News: Hart Marine – Nepean

28 October 2016

Hart delivers 5th boat to Port Phillip Sea Pilots

Melbourne-based boat builder Hart Marine delivered their 5th ORC fast pilot boat to Port Phillip Sea Pilots at the beginning of November.

Named Nepean after the piece of land which creates the Port Phillip Heads, a notorious stretch of water, the 18m Hart Marine ORC vessel was designed by French Naval Architecture Company Pantocarene.

The series of the ORC pilot boats including more common 15.6m and the 18m versions represent the current state-of-the-art in pilot boats and have taken the Australian and New Zealand markets by storm.

“We are absolutely delighted to have built a fifth boat for Port Phillip Sea Pilots. It is a credit to the design and everyone here at Hart Marine,” said Hart Marine General Manager Graeme Taylor.

“The client operates its pilotage service for Melbourne, Geelong and Western Port and once lost a boat and crew in the extreme weather conditions they have to contend with. Their ongoing orders are a unique testimony to the safety, comfort and efficiency of the pilot boats we build.”

Safety, crew and passenger comfort, efficiency and a low cost of ownership are, in fact, the basic requirements for any pilot boat and the ORC boats built by Hart Marine deliver far beyond.

Their composite hulls are not only tough enough to withstand the worst that the weather can throw at them but give them double the expected life of a conventional hull and, thus, a higher resale value. Their self-righting capabilities increase the safety dramatically even in the wildest conditions.

Crew and passenger comfort are also paramount to reduce fatigue and thereby increase their efficiency. The ORC boats are equipped with unique wave-piercing beak bow hulls, which combine the characteristics of planing and semi-planing hulls to reduce pitching and produce a smoother ride.

They also have resilient-mounted cabins, which isolate crew and pilots to a very large degree from noise and vibration. Hart Marine continually strives to improve the comfort of their vessels and Nepean is equipped with a new exhaust system which has succeeded in lowering noise levels even further.

Nepean is outfitted with twin Cummins QSK 19 750bhp motors feeding power through a ZF 2050A gearbox to Mikado propellers. This gives her a cruising speed of 26 knots and a top speed of 28 knots.

The vessel is tailored with a Furuno T2T electronics package and a Furuno 4DS4D Open Array Radar and an infrared camera for detecting personnel in the unlikely event of a man-over-board situation.

The vessel was built according to the AMSA M054/5 standard and underwent extensive sea trials to confirm range, fuel consumption, cruising, transfer and top speeds. The compasses were adjusted and all systems tested.

“The Hart Marine ORC pilot boats have been exceptionally successful in this region and enjoy a growing reputation among port authorities. We currently have five vessels under construction for various clients, others have been ordered and we are continually receiving expressions of interest from potential new clients,” said Mr Taylor.

MCS Eden Port editorial for Australian Ports News

30 September 2016

MCS solves Eden Port woodchip loading crisis

Mobile Conveying Services is currently involved in a major project at Eden in NSW where it is loading vessels with woodchip.

Allied Natural Wood Exporters (ANWE) GM Jarrod Wallis said that a freak storm had interrupted the company's export of woodchip by putting the company chip mill's jetty and conveyor system out of action.

At the height of the storm at 4:30am on June 6, a 17m-high wave struck the shore at Eden and swept away two 100m sections of the wharf access pier and the associated conveyor system.

Mr Wallis said that the largest wave previously recorded in NSW had only measured 14.9m and that high tides and a storm surge had made the situation at Eden worse.

The mill and export operation is a major player in the regional economy, making an estimated \$1-million injection into the economy each week and providing employment for up to 600 people.

Local politicians including Andrew Constance and Peter Hendy inspected the damage shortly after the storm to try and determine its impact and whether mill operations and woodchip exports would be affected as a result.

"The damage to the ANWE wood chip export port in Eden is significant, and I'm very concerned about the potential impact on local jobs and our regional economy," Dr Hendy said.

Mr Wallis said the company had immediately begun planning to rebuild the pier and conveying infrastructure but had also needed an alternative method to load-out vessels with woodchip to keep the operation running in the meantime.

The company contacted Brisbane-based Mobile Conveying Services (MCS) which is known for its expertise in loading materials onto ships and barges and had already successfully completed a woodchip loading project at Esperance in WA.

MCS MD Graeme Cooney arrived onsite at Eden a few days after the storm and conducted a feasibility study to determine if his company could provide the required solution. He concluded that MCS could do so based on the fact that there was an undamaged wharf of sufficient size nearby.

This wharf had been built for the use of the navy and, at 28m, was wide enough to deploy the company's patented twin-truck unloader and mobile conveyor units at an oblique angle to a docked vessel, while still leaving enough space for trucks to safely access the wharf.

MCS delivered a proposal to the client which was accepted. The required equipment was prepared and staff alerted to move to Eden. Mr Cooney pointed out that that MCS keeps its fleet in constant readiness to respond to emergencies and could have been on the move within two days had it not been for delays in obtaining licences to use NSW roads.

The MCS equipment, including a container-load of critical spares, arrived at the navy wharf and was set up by company staff assisted by Eden-based stevedores. ANWE had sourced around 10 large trucks and drivers to carry woodchip on the 6km roundtrip from the mill stockpile to the wharf.

The first vessel docked on 26th, July and loading began at the rate of about 6,000 tonnes per day which was slightly better than had been expected. To date MCS has achieved a max load rate of 7,000 tonnes in a 24hr period. Loading takes place for about twenty hours per day with the balance being taken up with moving the conveyors to load through the vessel's various hatches.

Mr Cooney said that one of the company's most important advantages was its dual-truck unloader which had been specially adapted to contain the sudden surge of woodchip which would often hang up and then discharge from a truck all at once.

The unloader's dual-truck capacity meant that there was never a time when the flow of product was halted while waiting for one truck to move away from the unloader and another to position itself.

At the time of writing MCS had successfully loaded four 30,000 tonne vessels and expected to be onsite until ANWE's jetty and ship loading system was back in action.

"We were experiencing a fairly big crisis and we were very glad to acquire the services and expertise of MCS and also very lucky to have access to the multi-purpose wharf," said Mr Wallis. "Work is already underway and we hope to have our own jetty back in operation in November."

MCS offers a wide range of conveying equipment and services including the wet and dry hire of equipment, the sale of equipment, the provision of complete materials handling solutions on fixed-rate or per-tonne contracts and conveyor parts, repair and servicing.

Page Macrae editorial (Geelong Port) for Australian Ports News

11 October 2016

Weighing hoppers maximise efficiency, cut load times at Geelong

Innovative weighing hoppers designed and built by Page Macrae in New Zealand are being successfully used at Victoria's Geelong Port.

"We had a requirement for new hoppers for use in the port to increase unloading efficiencies and add value for our customers," said Geelong Port Maintenance Manager Graeme Newman.

The port had a number of requirements for its new hoppers including a reduced height to enable easier access for grabs operated by ships cranes. The access height for trucks was also to be increased from the usual 3.9m to 4.3m to enable the loading of larger modern vehicles.

The major requirement, however, was that the hoppers had to be able to weigh the commodity being discharged in order to load the maximum legally permissible amount onto each truck but to avoid overloading them.

The process of truck loading was previously done by eye and each vehicle had to pass over a weighbridge before it was allowed to leave the port to ensure it had not been overloaded. Trucks had to have their loads reduced if found to be overloaded.

Mr Newman said the process had been time-consuming and that trucks were often under-loaded to avoid delays which had resulted in them not being used to their maximum efficiency. It was also often the case that the quality of the cargo was compromised when it was unloaded back at the wharf.

Geelong Port invited proposals from a number of hopper manufacturers and eventually selected the solution proposed by Page Macrae in which the hopper would discharge into waiting trucks via a belt weigher.

The solution met all of the stated requirements and Geelong Port was more confident of their choice of manufacturer due to the fact that Page Macrae already had a successful track record in the port, having successfully manufactured and delivered two dust control discharge hoppers to Boral in 2013.

Two units were ordered and the design was finalised after ongoing consultation between representatives of the port and the manufacturer. Mr Newman said that the belt weigher had been designed so that it could be jacked aside so the hopper could discharge awkward loads directly into trucks through a larger-than-normal chute.

The two hoppers were constructed and Mr Newman attended the final testing in New Zealand before they were loaded and shipped to Geelong. Page Macrae staff commissioned the hoppers earlier in 2016 and undertook the training of personnel from the port and the stevedoring companies likely to be operating them.

The hoppers are loaded by crane and grab and the hopper operator uses coloured lights to signal waiting trucks to approach the loading area and to position them accurately. The operator then enters the truck's load capacity into the control system and the hopper discharges that tonnage into the truck.

“We have been using the hoppers for several months and we are growing increasing confident about the scales accuracy and consistency. We have been very satisfied with the solution designed and manufactured for us by Page Macrae and it has certainly added value to our customers by minimising load times and allowing trucks to be used at full efficiency.”