

Liberty Industrial is dismantling Garden Island's 60-year-old hammerhead crane in Sydney. Image courtesy of Martin Grant.



Final farewell

The process to dismantle Sydney's heritage hammerhead crane is underway. **Marion Lopez** reports

A metal giant is gradually shrinking on Sydney's skyline. Marking the end of more than a year of public debate and following federal approval to remove the structure, the crane is slowly disappearing from its Garden Island home. Considered too expensive to maintain, the crane's removal will also free-up berthing space

on the military island, as the Royal Australian Navy makes room for its growing fleet. Dismantling works began in January, with deconstruction specialist Liberty Industrial assigned to the job. Faced with the lengthy and exacting task of safely removing the 60-year-old crane, while salvaging and transporting some of its heritage components offsite, Liberty Industrial project

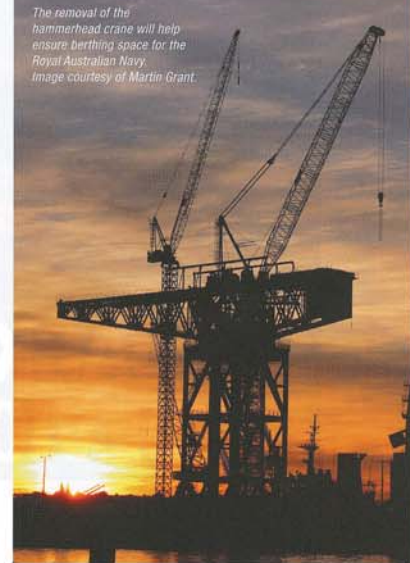
manager Todd Solomon said the operation proved challenging on many fronts. "Working alongside 24/7 naval operations at the Garden Island base in Sydney Harbour has presented a few challenges," he told *Cranes and Lifting* in July, halfway through the project. "We're faced with the constraints of a live site, a restricted work area and, at times, difficult weather conditions.

"We're faced with the constraints of a live site, a restricted work area and, at times, difficult weather conditions."

— Liberty Industrial project manager Todd Solomon

"This means we're severely restricted for landing loads and the materials processing workspace is limited. "Logistics can also be challenging at times as it can be difficult getting trucks with oversize loads in and out of the site and across town. "Of course, these factors were taken into account at the planning stage of the project and considerate solutions were adopted to minimise disruption and ensure that the works continue unhampered." One such solution was to dismantle the crane in much larger sections than the original design provided for, bringing the number of lifts required down from 250 to 70. "By reducing the number of lifts required, we greatly reduced our personnel's exposure to working at heights – minimising the work health and safety risks involved with carrying out the works," Solomon explained. "Also, our initiative to process scrap materials onsite meant we weren't as restricted by the load sizes." To dismantle the crane, the project team used two Favelle FAVCO tower cranes – an M120RX for access and an M2480D for heavy lifting. Working from inside a man box, Solomon explained that a team of workers were rigged up the M120RX close to the hammerhead crane to spray paint and cut the parts targeted for takedown. "We carried out spray painting and paint stripping works to prepare the crane for disassembly, encapsulating the crane's existing

paint coating with a high build, flexible and water-borne acrylic paint to stabilise any flaky paint on the structure and prevent the release of lead chromate paint," he said. "The predetermined separation locations were carefully marked and the paint removed along these lines using a vacuum shrouded rota-peen and vacuum shrouded needle gun, in conjunction with chemical paint stripper, to prepare the surface for oxy cutting. "This prevents the release of harmful vapours during cutting, which protects the environment and the health of workers." Once components were separated from the crane's main structure, Solomon said workers rigged each of them to the M2480D, which was used to safely hoist parts to the ground. "The jib tip has been our largest lift so far at 65 tonnes," he said. The M2480D dropped each of the hammerhead crane's parts in a designated onsite materials processing area, where another crew further downsized the components to ready them for transportation offsite. "We've deployed a 33 tonne Volvo EC330LC hydraulic excavator with a shear attachment to carry out the heavy duty downsizing," Solomon said. "Oxy-cutters are assisting to further downscale and process scrap materials, removing the paint at the cut locations prior to cutting. "The processed components are then loaded ... and progressively transported to an offsite recycling facility.



The removal of the hammerhead crane will help ensure berthing space for the Royal Australian Navy. Image courtesy of Martin Grant.

"An approximate 1700 tonnes of steel in total will have been recycled upon completion." In line with requirements imposed by the federal government, portions of the crane including a few machine house plant items and some of the slew motor room equipment will be salvaged and stored in their original condition. Other parts including the crane's main hook assembly, hook platform and trolley and cab will be sent offsite to be decontaminated of their coating and refinished.

"We developed a detailed methodology for the removal, relocation, refinishing and storage of the heritage components to ensure their condition is maintained," Solomon said. "We even fabricated a specialised frame for the crane's enormous 25.7t hook assembly so it could hang in its original position." The hook platform and trolley are the largest heritage items to be salvaged. At 7m wide and 8m long, they will be transported under police escort to the storage location. Deconstruction of the crane's head was completed in July. Solomon said the team was now focused on dismantling the crane's tower and remained on track to complete the project this month. "The project reinforces our position in the industry as industrial deconstruction specialists and showcases our dismantling capabilities," he said. "We are thrilled to be a part of the preservation of some of Australia's richest and rarest industrial and maritime heritage and we are proud to be delivering this project for the Department of Defence." **CL**



Parts of the crane, including machine house plant items, will be salvaged. Image courtesy of AJ Carter.