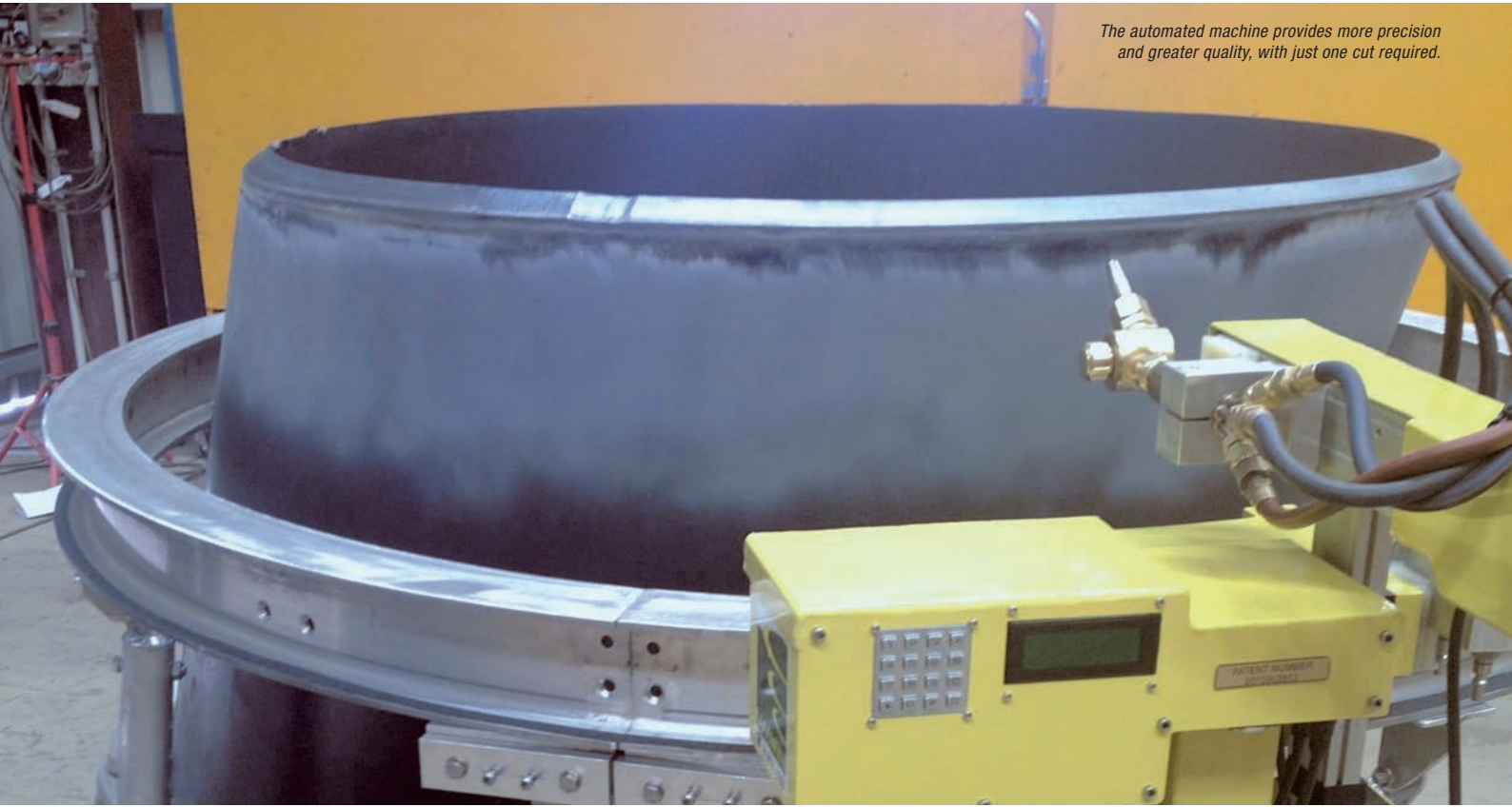


The automated machine provides more precision and greater quality, with just one cut required.



The cutting edge of wharf construction

Western Australia-based company Goldmont has placed itself at the forefront of construction innovation with its programmable automated cutting and welding machine. Dr **Nicola Davies** reports

The PACW machine is the brainchild of Goldmont manager Roy Gregory. A veteran of wharf construction in both Australia and Papua New Guinea, Gregory was inspired to find a way to cut and weld raked piles in a faster, more efficient way.

The machine can be programmed to cut raked piles at various rake angles. Vertical piles can be cut up to 2.5m in diameter, while the weld prep bevel is incorporated in a single cut – a previously unachievable task. Furthermore, the cutting attachment on the PACW machine can be interchanged with a welding attachment, allowing the semi-automated welding of a pile to a headstock.

The inspiration for the PACW machine came when Goldmont purchased a product marketed as capable of cutting and welding a raked pile that failed to produce a satisfactory result.

The team then brainstormed concept designs, leading to the fabrication, development and testing of prototypes, before building the PACW 1000. The development of the first prototype involved the input of a number of Goldmont

personnel over the past two years, with trial cutting and welding performed on raked and vertical piles within Goldmont facilities.

The machine proved its capability in October last year when it was put to work on the \$US34 billion Ichthys LNG project in Darwin Harbour – the Northern Territory's largest ever construction venture, seeking to harness an

support the headstocks that form the wharf platform. Only one modification to the track was required, according to Goldmont managing director Michael Brown. This modification of the track design allowed the equipment to be set up faster and increased the versatility of the track.

Previously, a number of complex, manual tasks were commonplace in construction of

By reducing the amount of grinding required, the PACW machine is assisting with the reduction of safety incidents resulting from the works process.

estimated 12 trillion cubic feet of gas and 500 million barrels of condensate in the Ichthys Field in the Browse Basin.

As part of the Ichthys project, Goldmont is implementing its PACW machine across wharf construction, where the design typically involves using vertical and raked piles to

this nature, as a machine capable of handling the job was unavailable. Such tasks included workers spending up to eight hours cutting each 1220mm angled pile to prepare it for welding. Through use of the PACW machine, this process has been reduced by more than six hours – achieving significant labour and