

INGENUITY puts safety first in WA

A shared commitment to tackle and solve tough problems using industry-led solutions spawned a swathe of innovations in the West in 2010 making WA a safer and smarter state of mining.

Jamie Wade writes for *Australian Mining*.

From concerted approaches to conveyor-related duties to the development of a method that protects switching operators, innovation has flourished among engineering contractors and mining companies.

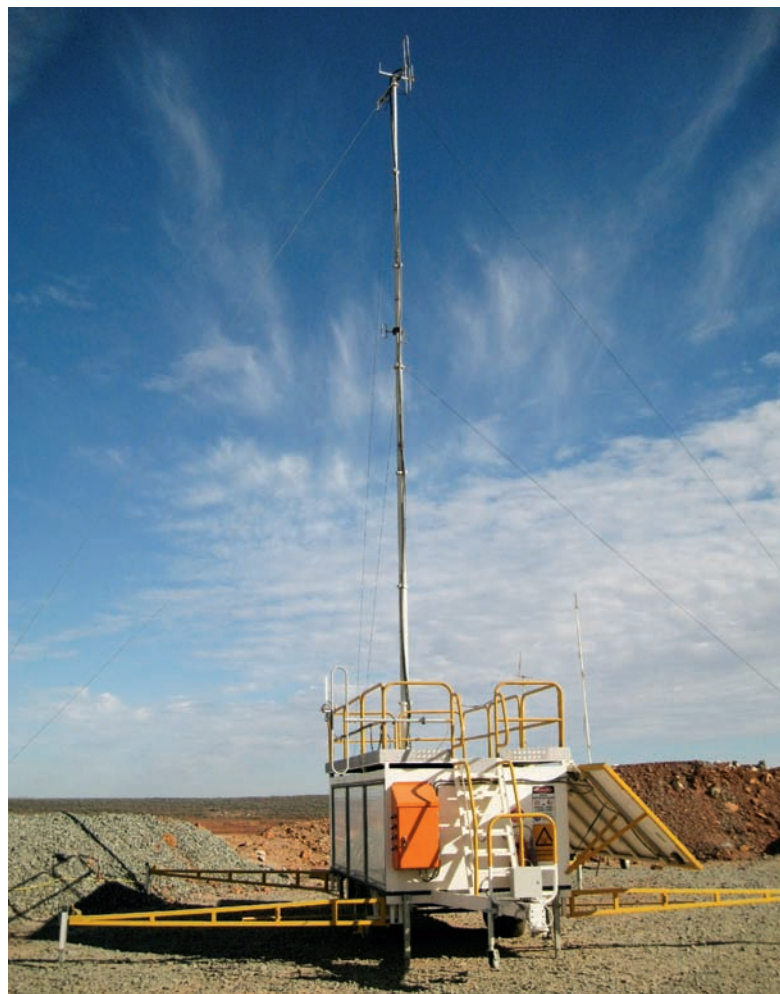
Australian construction and contract mining company Macmahon Holdings Limited was one such company singled out for praise by peers.

Winning the Systems Award for the Chamber of Minerals and Energy (CME) of Western Australia's 2010 Safety and Health Innovation Awards, Macmahon Holdings caught the judges' attention for its approach to safety improvement through its Conveyor Safe Work System.

The Macmahon fixed plant team at Orebody 18/Wheelara iron ore mine joined engineers to develop a program to identify and develop safer ways of conducting routine tasks with the operation and maintenance of conveyor-related duties.

Four work areas were identified for improvement: water spray cleaning; water hose storage; drum bearing replacement; and safety on the conveyor belt platform.

Working at height risks in cleaning water sprays above the conveyor belt were eliminated by supporting the spray structure on a pivot raised pneumatically to swing over the conveyor service walkway below.



A portable solar powered communications trailer with a walking platform as well as a pneumatically operated telescopic mast.

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Hose storage stations were installed at 20 metre intervals along the walkway to prevent employees tripping over hose reels.

The replacement of conveyor head and tail drum bearings was improved with the introduction of a monorail to load heavy machinery in a tightly restricted area.

Safety at the conveyor was improved with the installation of a platform at belt level, accessed by steps with handrails and a lockable gate.

Personnel at BHP Nickel West were also singled out for praise for a mobile communications structure which eliminates the dangers of working at heights at the miner's Mount Keith operations.

Mining communications require near-line-of-site into the pit to be effective. As pits expand, power, communications huts and towers need to be relocated. These moves are not only time consuming and costly, they also create significant safety hazards particularly during power pole, building and equipment relocation.

The solution: a portable solar powered communications trailer with a working platform and a pneumatic

telescopic mast. The trailer houses 1.7 tonnes of battery, allowing a maximum of 32 solar panels to be connected to four independent power banks. Batteries and racks are mounted on slide-out trays for safe and easy access during maintenance.

This innovation solved multiple problems and set functional and safety standards well beyond current practices. The device has eliminated the need for mast climbers, prevented communication hardware outages and is easier to maintain. Trailers are easily transferable between pits and other mines and can be used in areas with poor access to power.

The industry also recognised electrical maintainers at Rio Tinto Iron Ore in Paraburdoo for developing an idea to improve safety at enclosed kiosk substations when a market solution could not be found.

Previously, the task required a switching operator to wear full 40 Cal Arc flash clothing and rely on a back-up person in an emergency. Using the hierarchy of controls, the Paraburdoo innovators engineered a method to isolate the operator from the hazard using enclosed RMUs.