

Downer, Coates Hire and SITECH WA deliver Australia-first 3D safety technology trial to WA

SITECH WA's 3D Avoidance Zone System is used to elevate safety at construction and mine sites through the deployment of a unique, invisible 'digital barrier' which can shut down at-risk equipment the instant the barrier is touched.

PERTH, WESTERN AUSTRALIA, JANUARY 27, 2020 – Downer, Australia's leading provider of integrated services, and Coates Hire, Australia's leading equipment hire and solutions company, along with SITECH WA, Western Australia's premier mining and construction technology solutions provider, have partnered to trial an Australia-first technology that promises to deliver enhanced safety for construction and mine sites.

The three companies are bringing the revolutionary 3D Avoidance Zone System to Australia, developed by SITECH WA, which prevents machinery entering a restricted area in real-time through the creation of a digital 3D barrier which shuts down connected machinery in the event that any part 'touches' the digital barrier.

The technology promises to dramatically reduce accidents and increase safety in construction areas which are being undertaken within tight areas or nearby critical infrastructure, such as rail lines or mine sites. Downer and Coates Hire will deliver the technology as required to construction sites across the country.

"The system will be used as further mitigation against potential to 'foul' the rail danger zone, over and above to those physical barriers already in place," said Cormac Brady, General Manager, Western Australia Infrastructure Projects, Downer. "Following a successful trial of the 3D Avoidance Zone System, Downer will be able to apply it to our wider rail and civil projects, thus ensuring safety is at the heart of everything we do."

The technology will be trialled by Downer and Coates Hire for the first time in Australia, with Western Australia chosen as the ideal location for the trial to take place. The location of the trial will not be disclosed.

"Construction sites near rail lines and other critical infrastructure are both necessary and fraught with hazards, as excavators increasingly work within tight areas and nearby fast-moving transport," said James Naylor, Executive General Manager, West, Coates Hire. "Thankfully technology is emerging to ensure these work spaces are safer than ever before, with Western Australia the first Australian state to benefit through this trial.

"This offering is the next stage in our Internet of Things (IoT) strategy. Once completed, Coates Hire customers will benefit from enhanced safety, productivity and monitoring capabilities. "

How the 3D Zone protects workers and public transport users

An excavator's position is provided by SITECH WA's next generation Trimble Machine Control System; Earthworks. Utilising dual Global Navigation Satellite System (GNSS) technology, the position of the whole of the machine is passed to the Trimble Marine Construction Software (TMC) which compares the machine's position with the exclusion zone.

The TMC evaluates the current position of the machine against a pre-defined three-dimensional model of the restricted area. If any part of the excavator ‘touches’ the invisible barrier, TMC sends a signal to the machine to stop by disabling all operator inputs, ensuring the operator is no longer able to continue on their current path of movement.

This barrier can be set by site managers, but once the barrier is set there is no need to update the barrier, as the GPS system is always aware of the location of the machine, even if it moves beyond its original location.

“Many ‘2D’ height and slew-limiting systems exist on the market today, but they aren’t nearly as effective and can be prone to more human error,” said Brady. “The operator sets the limits manually by putting the machine up to the limit – this increases risk as these ‘2D’ systems are relative. Once the tracks of the excavator move the system needs resetting.

“With the SITECH WA’s 3D Avoidance Zone System the restricted area is absolute, and the machine position is always known.”

The technology works on a “Traffic Light” system. A Green alert advises workers and managers that the excavator is all clear to proceed operation; an Amber alert advises the worker and site manager that the excavator is approaching the Avoidance Zone, typically usually 0.5m as defined within the TMC software; and a Red alert means the excavator has entered the Avoidance Zone and triggers the machine interlock, which overrides the machine’s operation and halts it immediately.

Developed by SITECH in New Zealand, the technology [has been deployed successfully by KiwiRail](#) to ensure the safety of construction workers as well as train passengers and drivers.

“SITECH WA leverages technology in all facets of the construction and mining sectors to improve safety, productivity and efficiency. Applying this technology to Coates Hire’s equipment helps keep workers and the general public safe along with protecting critical infrastructure is of paramount importance to what we do day in, day out.” Said George Harris, Sales Manager, SITECH WA. “This technology can be used in so many different applications on many different machine types. We are excited to partner with both Downer and Coates in this project.”

ABOUT DOWNER

Downer designs, builds and sustains assets, infrastructure and facilities and is the leading provider of integrated services in Australia and New Zealand. With a history dating back over 150 years, Downer is listed on the Australian Securities Exchange and New Zealand Stock Exchange as Downer EDI Limited (DOW).

Downer Group employs more than 52,000 people across more than 300 sites, primarily in Australia and New Zealand but also in the Asia-Pacific region, South America and Southern Africa.

Downer Infrastructure Projects delivers multi-disciplined infrastructure solutions to customers within the transport sector. Services include the design and construction of light rail, heavy rail, signalling, track and station works, rail safety technology, bridges and roads.

ABOUT COATES HIRE

Coates Hire, part of Seven Group Holdings (ASX: SGH), is Australia's leading equipment hire and solutions provider, operating across a range of markets including engineering, mining and resources, infrastructure, manufacturing, construction, agriculture and major events.

In FY20, Coates Hire celebrated 135 years of commitment to supporting their customers who help build Australia. With a national footprint of over 150 branches, more than one million pieces of equipment and over 1,900 highly skilled employees, Coates Hire provides expert equipment solutions for nearly 19,000 customers. This includes end-to-end solutions for temporary works, traffic management, water management, industrial shutdowns, maintenance, training services and events.

ABOUT SITECH WA

Based in Osborne Park, SITECH WA has provided the mining and construction industries with leading technology solutions for more than decade.

SITECH WA understand how to apply innovative technology to effectively solve some of the biggest challenges the mining and construction industries face. The team will guide you on how to leverage technology for all aspects of mining and construction projects to increase productivity, efficiency, and safety.

For media enquiries, please contact Kate Carulli, External Communications & Community Manager at Coates Hire, on 0435 648 863.