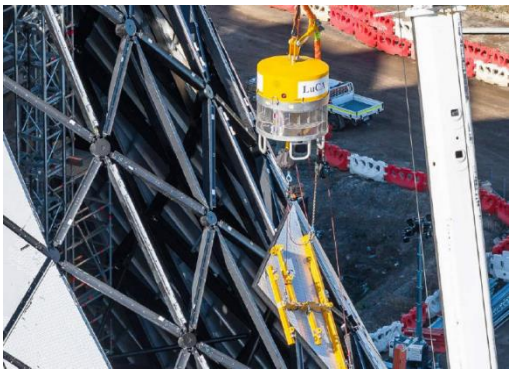
WEST GATE TUNNEL PROJECT

ROBORIGGER

Client:	CPB, John Holland Group
Project:	West gate tunnel project
Value:	$10 Billion
Location:	Melbourne, Australia
Date:	2023 - 2025
Usage:	Installing diagrid and façade elements





The challenge

The varying pitches of the façade elements, combined with the tall structure they are attached to make for challenging installation scope. Added to this, the concave design of the surface and wind sensitive load added further complexity.

The Solution

To address the unique lifting and installation challenges on this project, five innovative Roborigger load control devices—nicknamed LuCA units—were deployed. Each LuCA unit features an offset lifting system that positions the pick point 300mm off the side of the Roborigger unit, allowing the panel to be added to the face of the structure whilst Roborigger and the crane rope are well clear of the structure. Cantilever beams were also used with Roborigger to access concave wall sections.

Roborigger's advanced load control eliminates the need for taglines by remotely rotating and holding loads in a precise orientation. This not only mitigates windmilling in strong winds but also effectively doubles the safe operational wind speed. Additionally, the units are equipped with electric, remote-controlled winches that precisely control the pitch of panels, ensuring accurate and efficient installation.

* Roborigger proved to be a highly effective lifting solution for lightweight cladding panel installation, particularly in wind-affected and constrained environments.
* The system provided positive load control and orientation, significantly reducing reliance on tag lines and manual intervention.
Its use improved installation accuracy, minimised uncontrolled load movement, and enhanced overall site safety by keeping riggers out of the drop zone.
* Roborigger enabled lifting operations to continue in higher permissible wind conditions, resulting in measurable productivity gains and reduced weather-related downtime. Significantly increased wind limit from 5m/s to 10m/s.
* The Roborigger system was integrated with an offset lifting arm, allowing the crane hook and hoist line to be kept clear of delicate façade elements while maintaining precise control during placement.
* In addition, Roborigger contributed to meeting crane OEM minimum hook load requirements for high-wind operations, supporting compliance with manufacturer operating envelopes while handling light-weight panels.
* Overall, Roborigger is a reliable and innovative solution for safe, efficient, and repeatable lifting of light cladding panels on complex construction projects.

Arthur Jin - Engineering Manager

Premier Cranes and Rigging

Client feedback

“The use of Roborigger has extended the operating window of lifts, allowing safe rotation control of the load up to the crane’s full capacity.

It has removed the need to attach and remove multiple tag lines, enabling load movement to be controlled by a single person. This was especially important from a safety perspective, considering the potential for tag lines to become tangled within the full birdcage scaffold surrounding the structures at the West Gate Tunnel Project.

Roborigger has greatly supported the project through collaborative reviews, training, and technical support throughout the works. It has been vital to the safe installation of over 3,000 façade panels on the structure.”

Chris Panting – Project Manager – West Gate Tunnel Project

