



CASE STUDY: JOHN HOLLAND

John Holland, CPB Contractors and the Rozelle Interchange Tunnel project: Delivering Order and Safety

“Teletrac Navman developed a system on this project that manages truck movements in a way I’ve never seen in the industry. The complexity of the system and the ability to track trucks coming onto and leaving this project, as well as ensuring that vehicles are delivering spoils to the right place, has only been realised through the innovation created by the two teams. It’s been quite inspiring.”

AT-A-GLANCE

Teletrac Navman’s Site360 technology aided John Holland’s operations by:

Creating a way to efficiently manage and allocate 700-800 trucks daily

Helping to automate spoil allocation and routing

Streamlining communications with truck drivers

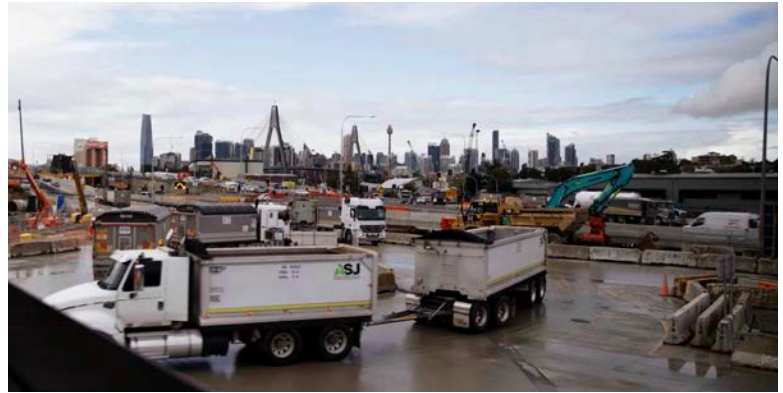
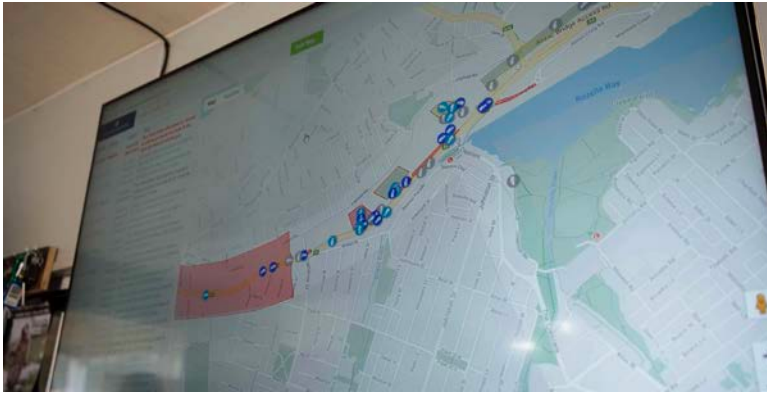
Reducing resource costs and data entry errors

CHALLENGE: Managing Sydney’s Biggest Worksite

The Rozelle Interchange is the final section of the WestConnex network, a mostly underground 33km motorway scheme under construction in Sydney, Australia. When completed, it will connect the Iron Cove Bridge, Victoria Road, and the Western Harbor tunnel to the rest of WestConnex.

This project is scheduled to be completed in 2023, has provided employment for over 13,000 people and is expected to have employed over 16,000 people over the five-year period of the project. Westconnex is one of the largest infrastructure projects ever undertaken in Sydney, NSW.

The focus of the Rozelle Interchange project is to put traffic underground and decrease the commuter times for people. In total, there are 22 kilometres of tunnels requiring excavation, and the project is currently about 90% through the construction of those tunnels in volume.



That's an enormous amount of material being carted through the worksite. On any given day there are 700 to 800 truckloads, which amount to about 100,000 tons of material every single week. The John Holland CPB Contractors Joint Venture (JHCPB) had to find a way to organise the movement of these trucks when entering and exiting the worksite, and while on the worksite. This was especially important considering the location of the project –the residential heart of the biggest city in Australia.

In the words of Jim French, Construction Solution Specialist at Teletrac Navman, *"The site is located between two large arterial roads, which converge heading into the city centre. There's a lot of traffic operating in a congested area, which also has to move off the job site with spoil through residential areas, so they needed a solution that streamlined the work of organising all the traffic while keeping employees safe on the site."*

Solution: A Unique Solution for a Unique Problem

With so many vehicles moving so much material – both the spoil leaving the project and the supply materials arriving to build the infrastructure itself– JHCPB had a massive number of trucks operating in a small footprint. Managing that workload, including the vehicles on-site, the vehicles arriving and departing, and where spoils were being transported to, demanded a one-of-a kind system.

JHCPB turned to an experienced industry partner to help solve the problem. Enter Teletrac Navman, who

was on hand to co-develop a bespoke and flexible solution unique to the industry.

According to Steve Kiddle, Construction Director on the Rozelle Interchange Interchange project, "the enormity and complexity of this project required that we come up with smart ideas for managing logistics and safety of the many truck movements."

"Teletrac Navman worked very closely with the Rozelle Interchange project team and developed a system on this project that manages truck movements in a way I've never seen in the industry. The complexity of the system and the ability to track our trucks coming onto and leaving this project, as well as ensuring that vehicles are delivering spoil to the right place, has only been realised through the innovation created between the two teams. It's been quite inspiring."

"The system we've created with Teletrac Navman on this project is industry-leading," says Kiddle.

The new Teletrac Navman Site360 solution was able to address one of the biggest issues faced by JHCPB - communicating with individual truck drivers. Being able to speak to each driver involved in the project and obtain an accurate picture of what was happening on site, was extremely difficult.

"At first, there would be a lot of phone calls, and a lot of stress on traffic controllers, on engineers and on the tunnel operations to make sure that everyone got everything right," explains Nitin Menon, Site Engineer.

“The solution removed that pressure and gave traffic controllers the ability to reach a driver with one click of a button.”

Teletrac Navman’s Site360 is a logistics system that looks at the supply and demand of the three tunnels involved in the project and allocates resources accordingly.

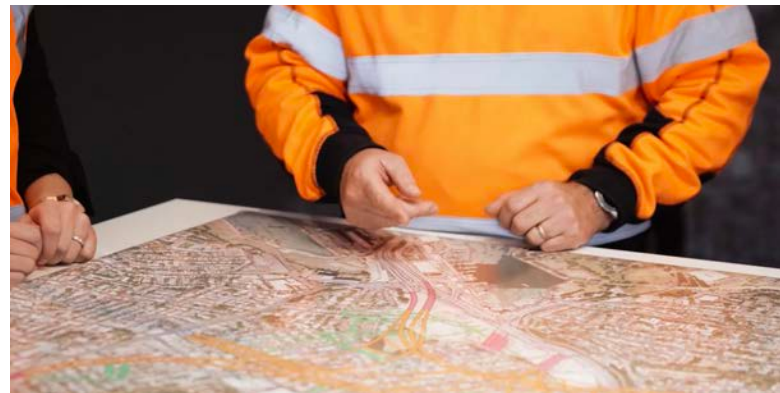
“With trucks coming in from City-West Link, using Teletrac Navman’s Site360 we can identify if Tunnel A has too many trucks, and send them to Tunnel B. And if Tunnel B has too many trucks, the supply and demand logic sends it to Tunnel C. These messages are sent automatically to the individual devices in the trucks. The drivers get the alert in their truck and they know to follow that route,” explains Menon.

JHCPB has an environmental responsibility to ensure that everything dug out of the ground is properly disposed of. Teletrac Navman’s Site360 ensures that vehicles leaving the site are also automatically allocated to the correct spoil disposal site, reducing the chances of incorrect manual entry.

The key benefit of Teletrac Navman’s Site360 is visualisation. The platform gives employees like Menon and Kiddle a view of the whole project. With

the project covering over 10 hectares of land, it would be almost impossible to see all the vehicles involved. Visualisation helps the team make decisions very quickly.

“If Tunnel B runs out of material, we disable the tunnel from the system, and all the auto allocation goes to A and C. Without the system, this would take at least 30 phone calls to all the involved parties. Now, we have one gatekeeper and two traffic controllers that run the whole job,” clarifies Menon.



"There are times where the system has to be adapted, but that adaptation is easy to do as Teletrac Navman's Site360 is an online system. Anyone can access it through a web-based login. We don't need a specific program or download, and anyone with the right level of access can change what they need to."

Teletrac Navman's Site360 has removed the need for radio and phone calls, while eliminating an extra level of supervision work as well, allowing JHCPB to make informed decisions and message drivers individually.

Results

Since adopting Teletrac Navman's Site360 solution, JHCPB has achieved:

- Automated spoil management process resulting in improved environmental responsibilities.
- Mitigated manual entry risks associated with spoil management.
- Reduced personnel resourcing costs associated with constant communication with drivers.
- Collection and storage of accurate, live, and complete information, leading to efficiencies in audits, compliance, and information requests.
- Automated site monitoring for tunnel capacity, providing queues alerts and more.
- Boosted on-site safety through vehicle monitoring and organisation.

About John Holland CPB Contractors and WestConnex

John Holland and CPB Contractors are leading engineering construction providers with operations in Australia, New Zealand, South East Asia and the Middle East.

WestConnex is Australia's largest road project and is part of an integrated transport plan to keep Sydney moving, easing congestion, creating jobs, and connecting communities. WestConnex will provide a vital missing link in Sydney's motorway network and support Sydney's economic growth and urban revitalisation.

