

BYPASSING WEIGHBRIDGE DIDN'T INTERRUPT NORMAL OPERATIONS BUT DID INCREASE PRODUCTIVITY

Adopting Trimble onboard weighing and reporting technology for real-time visibility of site operations, sees Holcim's Bohle Quarry bypass their weighbridge and significantly increase their productivity to deliver on the TRR4 project without interruption to normal operations.

Company profile

Holcim's Bohle Quarry (Bohle Quarry) in Townsville is one of 300 quarries operated by Holcim in Australia. The company, a subsidiary of global company LafargeHolcim, are a leading supplier of aggregates, concrete and concrete pipe and products that have been operating in Australia since 1901. Holcim cite a passion for delivering innovative solutions for their customers as one of their values and, through adoption of Trimble technology, Bohle Quarry are certainly embracing this value.

THE PROJECT

Townsville Ringroad Section Four (TRR4) is the final stage of a major upgrade project in central Queensland, Australia. The project will significantly reduce congestion on local roads, increase the movement of traffic to and from Townsville's port, as well as future proof the area for urban and industrial expansion. The project involves lengthening and widening the current road as well as construction of new dual carriageway.

THE CHALLENGE

The alignment for the dual carriageway for TRR4 is across old swamp land which means it is not a standard cut to fill earthworks project, but instead a 100% import job requiring all materials to be sourced from local quarries.

Civil Contractor, Seymour Whyte, realised during the bid process that the key to success for all involved in the project would be the speed at which they could import and compact the fill. To achieve this, they would be dependent not only on their own productivity, but the productivity of the quarries and haulage company too. To be successful, constant visibility across all activities including construction, extraction, haulage and placing of materials would be absolutely necessary.

Quarry Manager Andrew Nicholas at Holcim's Bohle Quarry in Townsville



Traditional methods to track this activity relies on daily reports from the quarry weighbridge as well as an onsite spotter who manually collects the paper docketts and records information about the location and frequency of material placement. However the size and scope of this project challenged these traditional methods and called for technology for maximum success.

THE SOLUTION

A technology partnership going back a decade, saw Seymour Whyte turn to the expertise of local Trimble distributor, SITECH Construction Systems (SITECH CS) whose advice was to implement a full Trimble Connected Site to track productivity, utilisation and location across all earthmoving equipment on the construction site, all production loaders on the quarries and all trucks transporting materials to the project site.

All the information is pulled together into a cloud reporting tool which gives all parties involved the real-time information they needed to make quick and effective decisions to drive productivity and efficiency.

BOHLE'S PERFORMANCE BY NUMBERS

488

Most loads in one day, compared to previous record of 185.

15,600

Most tonnes of material shifted in a day, compared to targets of 6000.

3

Approximate number of minutes saved per truck per cycle as a result of bypassing the weighbridge.

100%

Increase in cycle times per truck per day from 7 to 14.

*Numbers sourced from interview with Holcim Bohle.

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Andrew Nicholas, Bohle Quarry Manager, says “We’re always looking for ways to push the boundaries and deliver the best to our customers. Given I was already familiar with, and interested in, Trimble technology and some of our loaders already had Trimble Loadrite weighing systems installed, I wanted to see what this technology could deliver for our operations.”

Seymour Whyte won the TRR4 contract and, in turn, Bohle Quarry, along with Black River Quarry, won the work to supply the material.

Nicholas gave the go ahead for two wheel loaders and all haul trucks to be installed with Trimble Telematics technology to track their location, utilisation and productivity, as well as Trimble’s ‘Legal for Trade’ Loadrite weighing system on the wheel loaders. This information is fed into the cloud reporting tools InsightHQ and VisionLink through which Nicholas can access real-time reporting on any device.

“Having this information about operations on my iPhone is absolutely light years ahead in this industry.”

Andrew Nicholas, Bohle Quarry Manager

THE OUTCOME

Information at your fingertips for fast and effective decision making

The technology adopted by Holcim enables managers and operators to see the data relevant to their role. This has enabled Quarry Manager, Nicholas, to make quick and accurate operational decisions and is also lifting the productivity of operators through driving a culture of healthy competition.

“Having this information about operations on my iPhone is absolutely light years ahead in this industry. I can see everything in real-time from number of loads to the location of loaders and trucks, as well as material type being loaded and the weight,” says Nicholas. “I might take a look and see that all the trucks are queuing at one loader while there are other loaders free and, because I have that visibility, I can quickly fix the issue and keep things moving.”

HOLCIM'S TRIMBLE CONNECTED SITE



'Legal for trade' Loadrite weighing system to replace need for weighbridge, as well as Trimble GPS Telematics on all quarry loaders to track location, run-time and utilisation.



Trimble GPS Telematics on the trucks to track dump and haul location, cycle time, load counts and truck utilisation.



Cloud reporting layers InsightHQ and VisionLink for real-time monitoring of operations. Available on any web browsing device.



Consulting services and support from SITECH including installation of technology, training, customised reports and custom built technology.

“The loader operators have never had this sort of visibility before either and it’s really lifted their motivation,” Nicholas continues. “They’re naturally competitive so they’re coming in at the end of their shift looking at the results and discussing what went well or what could be done to improve the next shift’s performance.”

Through the use of this technology, Bohle Quarry has been able to supply TRR4 without interrupting normal operations and their productivity has increased dramatically. Between March and May, they exported 300,000 tonnes of material. At this time, they began supplying TRR4 and, over the following three months, they exported 1.2 million tonnes – a fourfold increase in productivity. Bohle Quarry’s biggest day saw them export 15,600 tonnes to TRR4, equating to approximately 488 loads transported, compared to their anticipated targets of 6000 tonnes in a day.

Bypassing the weighbridge

The largest change for Holcim in all of this has been a shift away from using the traditional weighbridge system.

“Bypassing the weighbridge was at first difficult to comprehend – you’re talking about a tried and tested system that is at the core of your safety, compliance, finance and administration,” says Nicholas. “But, after a while of using the Trimble system in conjunction with the weighbridge, we could see that it was accurate and with confidence TRR4 material supply began operating solely off the Trimble data.”

Bypassing the weighbridge has seen a time saving of up to three minutes per truck per trip which means trucks are cycling through faster and the quarry is able to deliver more loads per day to the construction site. The impact of this on our productivity over a period of a few months has been very significant.

Challenge

Holcim needs to provide visibility to civil contractor to supply major local road project.

Solution

1. Trimble telematics on all wheel loaders and haul vehicles to track location, utilisation and productivity.
2. ‘Legal for trade’ Loadrite weighing systems on all wheel loaders.
3. Trimble cloud reporting tools, accessible on any device, for real-time visibility of operations.

Benefits

- Bypassing weighbridge to significantly reduce cycle times.
- Real-time visibility for managers and operators of the data relevant to their role to drive quick decision making and increase productivity.

Senior management buy-in

Given this technology is challenging the traditional way of operating a quarry, Nicholas had to present to Holcim’s senior management the benefits of using Trimble’s ‘Legal for Trade’ Loadrite weighing system on the wheel loaders.

Nicholas says, “Some of them have been quarry managers so they know the ins and outs. Their main focus was on providing the desired service to our customer Seymour Whyte”.

“When they came to visit, I was able to show them real time operational KPIs that confirmed Holcim was supplying the correct products at the best possible service levels. They could immediately see the huge opportunity for Holcim to offer more value to its customers”.

Nicholas continues, “This was a huge step for us so we’ve needed a lot of support and SITECH CS has been a great partner on this journey. The team from the Townsville office as well as their head office in Brisbane have been on the ground with us every step of the way while also supporting Seymour Whyte and the other companies involved in the project.”

WHAT’S NEXT?

Andrew confesses he is a complete convert and has just paid for another loader to be fitted with the Trimble technology. But that’s not the end of it.

Brent Daniel, Corporate Account Manager, SITECH CS, says, “At the moment, Bohle Quarry is just using Trimble technology for their TRR4 operations, so we are working with them towards further adoption of the Trimble Connected Site. As well as fitting additional loaders and trucks with technology, we are also looking at applying technology for greater on-site intelligence, so Andrew doesn’t just know what has happened but why it has happened.”

Andrew says, “On top of that, I’m also really interested in Unmanned Aerial System (UAS, or drone) technology for better inventory management.”

Holcim’s Bohle Quarry is most certainly a quarry to watch as they continue to invest in technology to stay true to their value of delivering innovative and sustainable solutions to their customers.



“All loaders and trucks are fitted with Trimble technology to track location, productivity, utilisation and weight of materials. Managers and operators have access to the information that is relevant to their role through cloud reporting tools InsightHQ and VisionLink, available on any web browsing device.”