



## Application

Industrial/Occupational Hygiene

## Scope

Monitoring of dust to estimate potential exposure to respirable crystalline silica from concrete cutting, underground excavation, and construction of the City Rail Link tunnel network.



## Equipment and services

Aeroqual Ranger

Respirable dust (PM<sub>rsp</sub>) monitoring

## Client

City Rail Link Ltd.

## Consultant

HaS Expertise Ltd

## Date

2024

## Location

Auckland, New Zealand

# Real-time dust monitoring for worker safety

HaS Expertise were engaged by City Rail Link (CRL) to provide professional occupational hygiene services for the City Rail Link construction project, the largest transport infrastructure project built in New Zealand. CRL is funded jointly by the Crown and Auckland Council.

HaS Expertise provides specialist services in hazardous substances, occupational hygiene and personal exposure monitoring, with expertise in monitoring of dust, crystalline silica, welding fumes and diesel particulate at construction sites. The pollutants monitored on site included crystalline silica.

Personal exposure monitoring using traditional techniques (pumps and filters) are used to quantify exposure to respirable crystalline silica, but there is significant delay in receiving results, interpretation and reporting.

The Aeroqual Ranger provided real-time measurements of respirable dust which was used to respond to site conditions quickly when required. A Trigger Action Response Plan (TARP) was developed based on the silica content of the dust source, the Aeroqual Ranger readings and prior laboratory filter samples. This enabled same-day recommendations, unlike the traditional approach of using laboratory analysis of dust samples which can take one to five weeks. By then it is too late to make changes in the workplace if required. The data and connectivity of the Aeroqual Ranger and the ability to access data through the Aeroqual Cloud website was invaluable.

“I can do the monitoring in the morning, review the data at lunch and then provide the health and safety team with recommendations. I can mount the Ranger at a work zone and connect to it remotely to see data in real-time or carry the Ranger with me to see the dust levels as I walk around the site. I can quickly show the site supervisor the results and how levels vary across the site.”

With the Aeroqual Ranger, HaS Expertise continues to provide the highest workplace safety management at New Zealand’s largest transport infrastructure project.

“It was important for HaS Expertise to gather exposure information quickly to protect worker health. That’s why we chose the Aeroqual Ranger.”

**Suzanne Broadbent**  
Principal Scientist and COH, HaS Expertise