SUCCESS STORY

MONITORING BRIDGE CONSTRUCTION AROUND PERTH ARENA++

COUNTRY:

Australia

PROJECT TYPE:

Underground water monitoring during dewatering

SECTOR:

Construction

MAIN PRODUCT:

Loadsensing | The Wireless Monitoring System

loadsensing
WORLDSENSING

Challenge

In 2018, the multi‐purpose 60,000-seat new Perth Stadium (Australia) will open for the kick‐off of the Australian Football League season. The new six‐platform Perth Stadium Station will be one of the key infrastructures in the area's transportation strategy. Indeed, 28,000 people are expected to leave from the new Perth Stadium Station. During the construction works, the Victoria Park Bridge, an adjacent infrastructure that crosses over a congested highway, is at risk of being affected. Proper monitoring is crucial to the safety of passing vehicles.

Loadsensing is used to monitor the pore water pressure, piezometric head of ground water during dewatering, the settlement of surcharge and the tilt of the Victoria Park Bridge during the construction of a train station.

Solution

On behalf of the Prism Alliance (Laing O'Rourke, Aecom, Perth Transport Authority), Worldsensing, partnering with Itmsoil Australia, has deployed the Loadsensing system, for remotely monitoring the Victoria Park Bridge. Itmsoil has recently completed the installation of eight Vibrating Wire Piezometers, six 4‐20mA pressure transducers, seven MEMS tiltmeters, three Settlement Plates and two inclinometers. The equipment is used to monitor the pore water pressure, the piezometric head of ground water during dewatering, and the tilt of the Victoria Park Bridge and the settlement of surcharge. Considering the scale of the project and the distances between the sensors installed, it made sense to use the Loadsensing long-range wireless telemetry system due to its cost-effectiveness and long-range performance. The Loadsensing gateway receives the data from all sensors installed onsite with a distance of 3.5 Kilometers from the furthest monitoring point, then relays data to the Itmsoil's web‐based data presentation package, Argus.

Facts & Figures

- 8 VW piezometers.
- 6, 4‐20mA pressure transducers.
- 7 MEMS tiltmets.
- 3 Settlement Plates.
- 2 Inclinometers.
- 11 LS‐G6 ANALOG 4ch data logger.
- 8 LS‐G6 VW 5ch data logger.
- 1 LS‐G6 GATEWAY FCC.

Benefits

The Loadsensing wireless monitoring solution now enables greater control of the bridge. A key advantage of this solution is the remote and automatic access to data without any need for manual collection. In addition, by removing wiring, it allows an easy installation as well as an important cost reduction. Using this system, the client can receive the data in real-time and be warned via SMS / Email if any instrument exceeds the set alarm thresholds.

.

WORLD SENSING

CONNECTED OPERATIONAL INTELLIGENCE

Find out more:
www.worldsensing.com

Get in touch:
sales@worldsensing.com