

## Fulton Hogan Temperature Monitoring System

### Client Overview

Fulton Hogan is a large civil contracting company founded in New Zealand with operations spanning Australasia. Their operations include product supply as well as infrastructure-based construction services.

Fulton Hogan has a precast concrete facility, located in Central Victoria, being an integral part of its product supply business, responsible for fulfilling contracts to manufacture products such as pre-stressed planks and tunnel segments.

### Problem

Fulton Hogan commissioned Ramp to provide a temperature monitoring solution that could replace its existing wired thermo-couple system. The need for such a system is as follows:

- Contract Compliance – each completed concrete product needs to be supplemented with temperature log files covering the manufacturing stage.
- Data Input for Climate Control – this system is connected to a Programmable Logic Controller (PLC) which is responsible for triggering climate-controlling steam actuators.

As such, one key requirement of this project was the integration between temperature monitoring hardware and the PLC using the industry standard protocol ModBus.

### Solution

#### System Overview

A wireless temperature monitoring system was implemented, operating over a number of individually controlled steam pits. Each steam pit is associated to an Identec IQ350 tag with an integrated PT1000 temperature sensor.

Once the steam pit workers have prepared the cast, the temperature tag is placed on top of the pit, with the external temperature sensor embedded within close proximity of the setting concrete.

The tags were configured to beacon every 3 seconds, relaying both unique tag identifier and current temperature data to a read point within 500 meters of the steam pits.

This read point was connected to an industrial PC, responsible for interfacing to the RFID hardware, as well as preparing the output to be compatible with the ModBus protocol.

#### Result

Ramp has provided a wireless temperature monitoring solution that meets Fulton Hogan's requirements while providing a very low infrastructure footprint.

This system is a robust solution that has very reliable read rates as well as a long battery life. The main advantage of this system over other wired systems is the enhanced scalability and flexibility options this technology can deliver.

By simply adding or reassigning tags to steam pits, Fulton Hogan is able to easily add or change around their operations to suit current conditions.

### Client testimonial

"The solution provided by Ramp RFID has placed Fulton Hogan at the leading edge of process control technology and reliability in the precast industry. This unique solution allows us to provide customers with superior products and has helped us achieve the very tight tolerances required to supply tunnel segments to products such as the Adelaide Desalination."

Nick Miller, Chief Executive Officer, Fulton Hogan

