

Case Study



London Heathrow T5 Baggage Tunnel Core Controls Solutions

Overview of works

Built in 2010, the T5 Baggage Tunnel is a 2.1km link tunnel providing the facility to transfer baggage between London Heathrow Airport Terminal 5 and the Central Terminal Area. The tunnels, which link Terminals 5, 3 and 1, contain a DCV track system comprising 960 carts capable of transporting a single item of luggage at speeds of up to 32 km/h. The tunnels provide cross campus connectivity to the world's largest integrated baggage system.

The project brief was to provide an extension to the existing HEART system to control and monitor the new M&E services that support the new single bore PT5TBS baggage tunnel. The system was designed to provide two sets of hot standby battery backed PLC's each communicating to RTU's within each of the tunnel sections. The control system is responsible for the control and monitoring of the following M&E systems:

- Sump pump control and monitoring (three locations/sets).
- Ventilation control and monitoring.
- Environmental air monitoring.
- Fire shutter monitoring.
- LV Distribution monitoring.
- Fire Main control and monitoring.
- Croft hatch monitoring.
- Lighting system control and monitoring.
- Radio systems monitoring.

Our solution

Project implementation and commissioning involved liaising both vertically and horizontally through the supply chain to all vendors supplying equipment into the tunnel build as well as the stakeholders and client. This project provided many challenges; Airside working within the restricted zone, logistical restrictions relating to landside / airside boundary as well as the work environment being located deep underground with restricted access routes.

The scope of works included

- Duplex resilient Outstations
- 6 Distributed Remote Telemetry Units
- 8 Custom Designed UPS Units
- 14 Damper Control Panels
- 4 Ventilation MCC Panels
- All integrated into one of the world's busiest airports
- Integration into LHR Site wide SCADA system.



Our solution

The system was fully tested at our facility prior to shipping to site. This included the complete integration of all the equipment under our supply including; the control system Outstations and RTU's, Fan Damper Control Panels, Ventilation Motor Control Centres and the SCADA system which was developed using our Heathrow simulation servers.

The technology used on this project consisted of AB SLC5/05 PLC's and Micrologix 1400 PLC's in accordance with the HAL standard specification. The SCADA development was completed on the existing SCOPE-X system provides the GUI for the HEART system which is a site wide monitoring system for all of London Heathrow Airports engineering systems.



All HEART equipment delivered and installed to programme and in advance of most other plant items. This ensured the most cost effective delivery for HAL and provided risk mitigation during the onsite integration phase of the project



2.1km
link tunnel



UK's busiest
airport



Tested offsite
before installation