

# Case Study

**Client** HETCo JV Laing O'Rourke/Ferrovial

**Project date** 2010 - 2012

**Project Value** £26 M

## Project: Heathrow Eastern Airside Access Road (EAAR), Heathrow Airport, UK

The structural, civil and geotechnical design of two new aircraft bridges, 770m of road with two underpasses, to service the Terminal 2A satellite buildings (T2B and T2C).

### Services provided

- Civil Engineering Design
- Structural Engineering Design
- Geotechnical Engineering
- M&E Services Design
- Temporary Works Coordination
- 3D Model Fly Through

### Description of project

The EAAR is part of Heathrow Airport's 'Infrastructure Programme for the Eastern Apron Development' and provides the main operational and strategic road link from the new Terminal 2 building across the Eastern Apron, enhancing safety by reducing the risk of vehicle / aircraft conflict. The road is 770m long and utilises two underpasses (110 and 130m long) beneath two taxiways to link the T2A, T2B & T2C stands. At its western side, it passes over the Piccadilly Line as it ramps down below the first taxiway.



The road is formed between two lines of embedded secant pile retaining walls topped by capping beams, with a reinforced concrete road slab at formation level providing a permanent prop between the walls and doubling as the road construction. The two taxiway bridges span between the top of the secant pile walls at ground level. A drainage sump with pumps is incorporated at the low point in each underpass.



The two Code G aircraft bridge decks comprised of pre-stressed precast concrete beams working in composite with a structural concrete topping. In addition to the complexity of working in a live airport environment, we had the further challenge of piling adjacent to and over the London Underground Piccadilly Line tunnels. Wall and Tunnel movements were monitored throughout.