

Airport Link Tunnel, QLD

CLIENT Thies John Holland Venture

YEAR 2008 - 2011

SCOPE OF WORK

- Aquifer hydraulic testing & analysis
- Groundwater monitoring
- Numerical modelling
- Groundwater impact assessment



Airport Link will be a 6.7 kilometre multi-lane electronic free-flow toll road with dual 5.7 kilometre tunnels.

The Airport Link Project in Brisbane, was the largest infrastructure project in Australia. The Airport Link is a 6.7 kilometre multi-lane electronic free-flow toll road with dual 5.7 kilometre tunnels.

“Groundwater analysis completed by Douglas Partners allowed additional sections of the tunnel to be designed and constructed as ‘drained’, thereby providing a major cost reduction to the contractor.”

Carl Deegan - Senior Associate / Hydrogeologist



In June 2008, Douglas Partners was part of the winning bid for the Airport Link Project in Brisbane, Qld. The Airport Link Project, together with the Northern Busway and Airport Roundabout Upgrade, was the largest infrastructure project in Australia. It consists of a system of roads and tunnels located in the inner city suburbs and airport district of Brisbane.

Douglas Partners’ groundwater engineers, working as part of the design company’s team, investigated the hydrogeological regime surrounding the project and undertook numerical modelling to assess groundwater inflows and drawdown induced by the drained tunnels.

Douglas Partners’ specialised resources were used to develop complex groundwater models incorporating varying permeabilities and geology across the model domain, river cells and stream-flow data to simulate groundwater surface water interactions and calibration against observed groundwater level data.

Douglas Partners undertook groundwater investigations including:

- Review of previous groundwater, environmental and geotechnical investigations;
- Design and implementation of a groundwater monitoring network and sampling program for approximately 100 boreholes;
- Aquifer hydraulic testing including pumping tests to assess aquifer connectivity and permeability; slug (permeability) tests on approximately 60 bores, and flow recession tests on artesian bores;
- Development of a conceptual hydrogeological model;
- Development and calibration of a numerical groundwater model; and
- Hydrogeological impact assessment from the tunnel construction on the existing groundwater regime, groundwater dependent ecosystems, environment and existing groundwater users.

