



Sydney Airport Northern Airport Precinct Sydney Airport, New South Wales, Australia

Client: Seymour Whyte Constructions
Project Value: \$16 million

Sydney airport is Australia's busiest airport handling around 40m passengers in 2016. The Sydney Airport Northern Airport Precinct project is part of the Sydney Airport Master Plan to develop the parcels of land owned by Sydney Airport on the north side of Airport Drive.

Geoinventions was engaged by Seymour Whyte Constructions to design a large piling and crane platform which allowed for the construction of a multi lane bridge spanning Alexandra Canal for a new car park area which will accommodate ≈ 1200 vehicles. The bridge will be constructed with a associated approach road to facilitate vehicle access to and from the Northern Airport Precinct. The design of the 50.0m single span bridge will not only provide Sydney Airport with better pedestrian and bicycle access but also provide more commercial space for airside operations.

The site was originally a low lying swamp which was occasionally inundated by flood from waters from the Alexandra Canal. Groundwater levels varied between 0.9m to 2.6m. The entire area had been extensively filled with ≈ 1.0 to 2.0m of sand. The fill was underlain by ≈ 4.0 m of loose sand followed by soft to firm clay.

The support services GCS provided include:

- Optimised piling platform design using two layers of high strength woven geotextile to sustain piling rig bearing pressures of 255kPa. Steel plates were utilised beneath the tracks to further reduce the bearing pressures to 85kPa which further optimised the platform thickness to 500mm.
- Design of crane platform to accommodate a large 750T crawler crane situated ≈ 3.0 m from the canal edge which is heritage listed.
- Assess slope stability of canal slopes during piling and crane operations.

The project was successfully completed in late 2015 and without any damage to the heritage listed canal.