

The project was undertaken as an Alliance contract, with the Alliance partners comprising Vicroads, The Department of Infrastructure, Connex and John Holland Pty Ltd. Geotechnical Engineering joined the project as a sub-alliance partner. Kellogg Brown & Root Pty Ltd were engaged as the civil and structural designers for the project.

The main focus of the project involved the separation of the at-grade rail intersection crossing Middleborough Road in Box Hill. This involved lowering approximately 800 linear metres of rail corridor to a maximum depth of around 10m to allow the rail to pass beneath Middleborough Road.

Under normal circumstances, and ignoring the need for working with very constricted access amongst live rail and road assets, the industry standard turnaround for such a project would be approximately 18 months. The most challenging component of this project was that all of the above was to be designed, constructed and operating, within 5 months.

Direct access to the rail corridor itself was limited to 5 No. weekend rail occupations prior to Christmas, and a single 5 week rail occupation beginning 1 January 2007.

Geotech's role in the project was to construct all foundation and retaining wall piles, soil nails and shotcrete for the project. Geotech was brought into the project in September of 2006 to assist with the development of retaining wall designs.

Geotech focused design efforts towards producing retaining wall designs that would be economic. Where property boundaries allowed, soil nail and shotcrete retaining walls were extensively used. The use of steel fibre reinforced shotcrete for the soil nail walls reduced the amount of labour required to place conventional steel mesh reinforcement in the walls, reducing both time and cost for the project. Conventional dowelling and mesh reinforcement was used for soldier pile shotcrete infill panels.

The final Geotech Pty Ltd scope for the project involved:

- Over 21,100 linear metres of soil nails
- Over 11,300 square metres of shotcrete wall
- Over 600 No. bored piles up to 1200mm diameter and 23m deep

For their work on this project, Geotech Pty Ltd won the nationwide Master Builder's Association Award for Excellence in Civil Construction under \$25m in 2007.

