



CLIENT

Thiess Hochtief

PROJECT

Chatswood to Epping Rail Tunnel

PROJECT DESCRIPTION

Precision drilling of 96,000 high tolerance holes.

PROGRAMME DURATION

2005 to 2006

PROJECT VALUE

\$1.8 million

BACKGROUND

For the Chatswood to Epping rail tunnel in Sydney, the design required the rail lines to be fixed to the concrete.

This required drilling holes for the hold-down bolts after curing and jacking the slabs.

KEY CHALLENGES

To get the job done in a timely manner Combined designed a multi-head drill rig that would simultaneously drill 16 holes and still meet the tight tolerance specification.

The logistics were difficult since no-one had ever built such a machine or had even heard of one being built.

This challenging project required 96,000 holes to be drilled 2km underground to a tolerance of ± 1 mm in less than 100 days. This meant an average of 1000 holes needed to be drilled each day.

We were working up to 2km from the tunnel entrance meaning that slurry was to be disposed of using the tunnel's environmental systems. There were 75 tonnes of concrete cores to be transported to the surface for disposal.

PROJECT SUCCESSES

The 16 head-drilling rig worked better than anticipated, and all objectives and targets were met.

On this project we were able to achieve a peak production rate of 240 holes/hour with only 2 operators .

As a direct result of our outstanding achievements on this project, Combined was asked to provide a similar service for the Developing Auckland Rail Transport (DART) project in NZ.