



Asia

Nicoll Highway Collapse (Singapore) Numerical Modelling of Deep Excavation

Description of Work

In Singapore on 20th April 2004 a 33m deep excavation in soft clay for a new mass transit railway system immediately adjacent to the Nicoll Highway collapsed, resulting in 4 fatalities and extensive damage to the surrounding area. A Committee of Inquiry (COI) was established by the Singaporean Government in attempt to determine the cause of the collapse and to identify the lessons that could be learnt from this investigation so that similar events can be avoided in the future

GCG (Asia) Ltd working with their sister company GCG based in London were appointed as one of the Expert Witnesses to the COI. Their involvement resulted into detailed investigations, reports and presentations over a period of almost 1 year. Part of this work required a number of exercises involving sophisticated numerical modelling of the excavation at the collapse site including 2D and 3D modelling of consolidation behaviour, strut failure, the effects of undulating ground profile, gaps in the retaining wall for utility diversions and the development of a progressive failure mechanism.

Client: Rodyk & Davisson for Nishimatsu
Construction Co Ltd

Dates: 2004-present

Estimated Project Cost: N/A

