Description of Work
The construction of Road T7, under the Territories Development Department Contract – Sha Tin New Town Stage II – Contract ST86/2000, was a major highway project in Ma On Shan. This Contract included two underpass tunnels of between 12m and 16.5m in span, 12m in height, and some 200m in length. The tunnels were constructed by either mechanical excavation or drill & blast methods and are located under a hillside with complex geological conditions. The excavation encountered metamorphosed sedimentary rock, igneous granite and rhyolite intrusions together with numerous faults.

GCG (Asia) Ltd were commissioned by the tunnelling sub-contractor to provide all the necessary geotechnical support for the tunnel construction, including full-time secondment of an experienced engineering geologist with specialist knowledge in the tunnel excavation methods, rock mapping, rock mass quality determination based on the NGI “Q” system, blast vibration monitoring and data analysis, and temporary support design using numerical modelling. GCG (Asia) developed a system for rock mapping and interpretation to suit the expected ground conditions to develop stabilization measures. Additional technical support was provided on geotechnical instrumentation/monitoring and a geotechnical database was developed to assist with the modeling for design of the stabilisation measures. GCG’s involvement contributed to an ongoing optimization of the temporary support systems which resulted in the completion of construction several weeks ahead of programme.

Client: Super Rich Engineering Co. Ltd
(Sub-contractor to China Harbour)

Date: 2002 - 2003

Approximate Project Cost: HK$ 1380 million

Approximate Tunnel Cost: HK$ 70 million

Overall View of Excavation for Tunnel Portal C.