

Assuring Light at the End of the Tunnel

Article provided courtesy of Lee Hung Scientific Pte. Ltd. - Singapore

Soil & Foundation Pte. Ltd. of Singapore, an instrumentation consultant, was contracted by the LTA to monitor the North-South Dhoby Ghaut SMRT (Singapore Mass Rapid Transit) interchange tunnels for alignment, and also for any shift or creep that may occur during the construction phase of the SMU (Singapore Management University). The building construction requires pile driving and it is estimated that the construction may be as close as six meters next to the underground interchange.

InstanTel® Dealer Representative, Lee Hung Scientific Pte. Ltd. installed and tested a total of six InstanTel MiniMate™ vibration monitors with ten geophones, for Soil & Foundation Pte. Ltd. These monitors are equipped with a GSM modem and a PC. A software application from Symantec Corporation, pcAnywhere™, is being used to dial into the PC and then download vibration data from the remote vibration monitors to a local PC.

GSM is a wireless modem solution available in Europe and Asia. ■

Blasting in Paradise

Article provided courtesy of Bermuda Caribbean Engineering Consultants Ltd. - Hamilton, Bermuda



How many quarry operators find that their hard rock quarry is only 74 feet from a major hotel, 394 feet from a show cave and virtually right on top of a popular watering hole called The Swizzle Inn? Those are some of the constraints that Island Quarry Limited have to operate in while extracting quarry product in Bermuda, the second most remote community in the world, located 790 nautical miles off the coast of the Carolinas. The Gulf Stream ensures a subtropical climate on the island throughout the year.

Wilkinson's Quarry is hemmed in on all sides by non-compatible uses (a quarry operator's worst nightmare). There is only a small portion of the 22 square mile limestone cap of Bermuda that has calcified sufficiently for aggregate to be won from it. Consequently, relocating the quarry is not an option. As a result, the monitoring of ground vibrations and air blasts is critical when detonating explosives.

Dr. Peter N. Calder of Ontario, Canada, is the consultant mining engineer to the quarry. Peter's ability to respond rapidly to calls to come to Bermuda in the winter

has the project manager threatening to call him "Batman".

The proximity of the show cave is no insignificant matter. The Crystal Caves of Bermuda is the top tourist attraction on the islands with some 85,000 visitors a year. These show caves are owned by the quarry owner. It is essential that the two apparent non-compatible uses of a quarry and a show cave co-exist in a safe and harmonious manner.

The owners and the operators of the quarry have looked to InstanTel Inc. for high quality seismographs that are accurate and easy to use in the field. Three InstanTel Blastmates® are deployed to monitor each blast. The ground and air vibrations are part of the permanent record of each blast.

Project Manager David Summers reports that initially only one BlastMate was used. But because of the reliability of the instrument, and because the value of having detailed permanent records became more apparent, two additional BlastMate III's were acquired to enable the blasts to be monitored in all directions.

Ron Mask of InstanTel is pleased to have three Blastmates working in Bermuda. This, coincidentally, equates to a 100% market share in Bermuda and we congratulate InstanTel on their success! ■

Alan DaSilva, Peter Calder and David Summers review the specs for the project at The Swizzle Inn and on the job site.