

Dulles International Airport

Technologies to manage risk for infrastructure



In 2000, the Metropolitan Washington Airport Authority (MWAA) implemented its most ambitious capital construction campaign to date. The \$78.5 million West Domestic Tunnel Corridor project will support an automated airport train system, which will run underground and connect the main terminal with the midfield concourses and replace the mobile lounges currently in use.

In mid-2004 Clark/Shea, a joint venture of Clark Construction Group, LLC of Bethesda, Md. (www.clarkconstruction.com) and J.F. Shea Company, Inc. of Walnut, Calif. (www.jfshea.com) was awarded a contract for the West Automated People Mover (WAPM) construction job, followed in early 2005 by the East Automated People Mover (EAPM) contract.

MWAA issued detailed specifications that called for real time deformation monitoring with data made available through the internet. To meet the stringent monitoring requirements Clark/Shea contacted Leica Geosystems.

The specifications called for optical monitoring targets mounted on buildings structures, support of excavation and tunnel linings, with fully automated motorized total stations with a measurement precision of 1 mm for sight distances up to 100m, with wireless data links to control site. The system was to operate 24/7 and the data made available real time on the internet.

Leica's solution included multiple TCA1800 Automated Total Stations with data transmitted via radio data links to a central location situated three miles from the actual instrument monitoring stations. The survey network is controlled by Leica's GeoMoS (Geodetic Monitoring Software).

Leica contacted Geocomp Corporation to develop a link between the GeoMoS system and Geocomp's iSiteCentral online data collection and presentation system. Geocomp created a secure IP link between the iSiteCentral SQL database and SQL database used by the GeoMos system.

Data added to the GeoMos system is automatically loaded into the iSiteCentral database, from which the iSiteCentral web pages create reports. The work was completed within two weeks of notification to start, and enabling web access to real time instrumentation data from the Dulles site.

EMP Height - January - April

