Geocomp

Technologies to manage risk for infrastructure

Project Brief

Atlanta International Airport APM Tunnel Excavation

Client:

Atlanta International Airport

Location:

Atlanta, GA

Service Provided:

- Real-time performance monitoring

Value Provided:

- Reduced risk by monitoring unexpected performance during construction
- Enabled proactive and cost-effective approach to managing risk

Background & Project Challenges

The addition of Maynard H. Jackson International Terminal at Atlanta's Hartsfield-Jackson International required the expertise of various companies and professionals. As part of the expansion, the Automated People Mover (APM) trains needed to be extended from Concourse E to the new international terminal.

Geocomp Role & Accomplishments

Geocomp provided performance monitoring to the project team. The project involved the open-cut excavation of twin tunnels as wide as 67 feet in fill soils of varying composition. The tunnels, located in the area of active baggage handling in Concourse E and in the area of Taxiway D by the control tower, also pass through existing structural walls at Concourse E, requiring significant demolition of portions of these walls.

The excavation is braced by a soldier pile and lagging system and underpinning of the existing pile caps with hand-excavated piers to depths of about 40 feet. The movement of the adjacent existing tunnel was a concern due to the unbalanced earth load of the excavation.

Excavation in variable consistency ground is suspect to unexpected behavior, such as sudden deformation or ground collapse. Such an event could cause significant disruption in airport operations in the area of work, potential hazard to people, damage to equipment, and delays.

The potential for major consequences coupled with the potential of significant deformations and/or unexpected performance presented considerable risk to the project. The project team chose a proactive and cost-effective approach to managing this risk using Geocomp's *iSiteCentral*™ real-time monitoring program. The system provides early warnings of unacceptable or surprise performance in time so that protective measures can be implemented to stop the undesirable performance or reduce the consequences.