

Soil stabilization takes center stage

Geopier Foundation Company comes to the aid of St. Elizabeth's Hospital in Washington, D.C.

Planning began in the 1990s for the new hospital on Saint Elizabeths' East Campus. The 438,000-square-foot, two-story hospital for the mentally ill will house nearly 300 patients. But before the project was completed this spring, there were some challenges to overcome.

Located in the southeast section of Washington, D.C., Saint Elizabeths encompasses 360 acres. It has been largely ignored from the 1950s through the end of the 20th century. But now this historic site is back to business, serving the public's needs.

Unconsolidated fill requires extra attention

Before reconstruction began, some existing buildings had to be razed. These deteriorating structures were once part of a naval communications center during World War I and World War II. And a large ravine that bisects the East Campus, where the hospital would be built, contained uncontrolled fill extending to depths of up to 30 feet below grade.

"There was unconsolidated

fill from years ago. Trucks were dumping unknown debris in there; there could've been tree stumps or hazardous waste. We eliminated all those variables by putting in a specialty foundation system," said Mark Thifault, senior project manager and construction manager for Gilbane Building Company. "We integrated the Geopier Foundation Company's Rammed Aggregate Pier System. The time that we saved working with Geopier meant we didn't have to dispose of materials and then rebuild. We easily saved months and months, and probably hundreds of thousands of dollars."

When examining the soil conditions, fill of silty or sandy clay was found at depths ranging from 5 to 31 feet below the existing ground surface. The fill stratum was underlain by residual soils of silty clay, sandy gravel, and clayey sand. Groundwater was encountered at 30 feet.

Building near the existing structure

The new construction was within 40 feet of the exist-



ing hospital, so safety and security were issues. Secure fencing was put in place. And keeping the project on schedule was crucial.

According to Jim Payne of Tompkins Builders and general contractor for the Saint Elizabeths project, Geopier Foundation Company helped to that end.

"If you compare the Geopier Technology to other soil stabilization techniques, it's faster, cleaner, easier and overall superior. It has less of an impact on the surrounding environment than other soil enhancement approaches. It wasn't until we got on the job site that we really understood how well it works," Payne said.

"Geopier improves the orchestration of activity. And it helps with job flexibility. We could install three or four Rammed Aggregate Pier® elements, move onto another task and then go back to it.

You also know immediately whether the system worked or not because you can test it right away. You're not waiting for it to cure."

Mark Thifault, senior project manager, echoes Payne's sentiments.

"Watching a Rammed Aggregate Pier element being built is quiet, fast and efficient," says Thifault.

The job schedule: exceeding expectations

To support the new hospital's foundation, more than 1,300 Rammed Aggregate Pier elements were installed at depths ranging from eight to 21 feet. And in less than a month — 23 days — the foundation was in.

"Geostructures beat the schedule they gave us. I believe they exceeded their own expectations, and they exceeded our expectations as well," Thifault said.