

Fitchburg State University Science Facility Modernization Project

Client:

Massachusetts
Division of Capital
Asset Management

Location:

Fitchburg, MA

Service Provided:

- Instrumentation & monitoring installation with ongoing management

Value Provided:

- Reduce risk
- Enhanced safety
- Real-time monitoring for less cost than traditional survey methods and much more data over time
- Ability to see impacts immediately to help manage the demolition
- Real-time monitoring for less than traditional survey methods

Background & Project Challenges

Fitchburg State University in Massachusetts has developed a two-phase, \$57.3 million plan to modernize its science facility. Phase One consists of demolishing the outdated Parkinson Gymnasium and replacing it with a 57,300-square-foot science facility. Phase Two consists of the renovation and modernization of the existing Condike Science Building next door. The result will be a state-of-the-art 100,000-square-foot science complex.



Geocomp Role & Accomplishments

Geocomp's challenge was fulfilling vibration and structural monitoring requirements set forth by the Massachusetts Division of Capital Asset Management during the demolition activities of Phase One.

Monitoring was particularly important on this project considering the close proximity of the 250-ft-tall Dupont smokestack just feet from the Parkinson Gym foundation. The demolition work had the potential to cause settlement of the smokestack and other surrounding structures. Geocomp designed and implemented an instrumentation program that could monitor these hazards in real time, allowing project engineers to see potential problems and initiate remedial action quickly.

The monitoring program consisted of the following instruments:

- 1 Leica automated motorized total station
- 2 Instantel mini-mate seismograph and geophone pairs
- 8 structural monitoring points

Continuous vibration readings and hourly deformation readings were taken and made available on Geocomp's *iSiteCentral*TM website. Any movement of these structures could be monitored in real time with sub-millimeter precision. Geocomp was able to provide real-time monitoring for less than half the price of traditional survey methods that involve manual data collection. Additionally, displacement and vibration threshold limits were also used. The system was configured to send text and email messages to the project team within five minutes of exceeding these limits. In the event of an alert, project engineers had the ability to analyze data and decipher whether or not a threshold event existed. If necessary, Geocomp could also collect more frequent data to provide additional information, to meet owner and/or contractor requirements.

The instrumentation and real-time monitoring services provided by Geocomp reduced risk, enhanced safety, and pushed the project closer to completion on time and on budget.