Project

Forward-thinking geotechnical expertise helps protect New York hospital from flooding

Summary

- Haley & Aldrich's geotechnical team helped a hospital located in a floodplain protect its infrastructure and operations.
- We designed and constructed a cost-effective flood wall that met the Federal Emergency Management Agency's (FEMA) 500-year flood wall requirements and and would enable the hospital to withstand major storms
- The hospital remained fully operational during the project. And after project completion the flood wall withstood a real-life test: back-to-back tropical storms caused major flooding and damage 2,000 buildings in the area, but left the hospital unscathed.

Client challenge

Our Lady of Lourdes Hospital, a multiservice and critical care facility in Binghamton, New York, suffered severe repercussions when a nearby river flooded in 2006. In addition to approximately $20 million in damages, the hospital was forced to evacuate its patients and temporarily shut down for two weeks.

The hospital, located in a floodplain, needed an immediate solution to protect its infrastructure and operations from flooding. It also needed to improve its long-term resilience to future flooding as a result of the growing frequency and intensity of storms brought on by the uncertainties of a changing climate. The hospital hired Griffiths Engineering to design and construct a flood wall. Griffiths then recommended Haley & Aldrich to manage the geotechnical aspects of the project based on our ability to develop creative solutions to complex problems — fast.

Our approach

To most effectively address the hospital's needs, we assembled a team of accomplished engineers from several of our offices and enlisted their geotechnical expertise in the design and construction of a flood wall. This wall would meet FEMA's 500-year flood wall requirements and enable the hospital to withstand major storms. After a thorough investigation, we not only prepared design recommendations for the initially planned flood wall, but also proposed a more cost-effective alternative. Haley & Aldrich also monitored the construction phase to verify that construction plans and specifications were followed, and Lourdes remained fully operational during all phases of the work.

The wall was completed in June 2011 and severely tested during tropical storms Irene and Lee, which hit Binghamton later that summer. In contrast to the major flooding that damaged 2,000 buildings in the same area, thehospital remained dry and was able to maintain the continuity of its operations — providing critical care and support for the community's medical needs.

Value delivered

- Developed alternative flood wall alignments and design criteria to lower costs and complexity when constructing the flood wall
- Ensured the hospital remained fully operational and able to provide services when back-to-back tropical storms hit in 2011

Photos courtesy of Ed Aswad, Carriage House Photography.

For more information, contact:

Edward Zamiskie

Market Leader, Government

Carrie Layhee

Senior Client Account Manager, Geotechnical Engineer