



## PROJECT BRIEF

# Cornell University Fall Creek Bridge Instrumentation & Monitoring

## PROJECT PROFILE

### CLIENT:

The Pike Company and Cornell University

### LOCATION:

Cornell University  
Ithaca, NY

### VALUE:

- Triggered event data is processed and sent to an FTP location for instant evaluation and to provide deflection measurements from acceleration

### SERVICES PROVIDED:

- A structural monitoring system including accelerometers, weather monitoring station, data collection and management system
- Video camera integration to capture real-time movements of the bridge

“During a weather event, the monitoring system triggers on and collects a 30 second burst of data at 100 Hz on all channels and wind conditions continuously recorded at 10 minute intervals with video of movement.”



## STRUCTURAL HEALTH MONITORING & DATA AUTOMATION

Geocomp’s challenge was to design and install sensors, a data logger and a data management system inside an environmentally controlled enclosure to collect real-time data at high-peak weather conditions, trigger the system to collect and store data and a video sequence of the behavior of the bridge. All of the sensors were installed from the underside of the bridge, 110-ft above the rushing waters of Fall Creek and Ilenroc bluestone sheer cliffs. Six accelerometers and a weather station monitoring wind speed, wind direction and ambient temperature are part of the monitoring system installed below the bridge deck. A rolling trolley system was used to access the underside locations at quarter and mid span. During a weather event, the monitoring system triggers on and collects a 30 second burst of data at 100 Hz on all channels and wind conditions continuously recorded at 10 minute intervals along with video of the bridge movements. The purpose of this system is to monitor and measure the behavioral changes of the bridge through the ever changing weather of Ithaca now that the structure is cocooned by the new netting.



## BACKGROUND

A system was installed to limit access to lethal means of self-harm on Fall Creek Pedestrian Bridge at Cornell. The system is comprised of horizontal stainless steel mesh nets, supported by steel struts projecting from the bottom of the bridge structure at each side of the bridge. Eight foot high vertical mesh wing-walls are attached to the sides of the panel system located below bridge deck level. The contractor’s project included installation of sections of eight-foot high black chain-link fencing at all abutments, thermal sensors located below bridge deck level on each side of the bridge, and a campus run video monitoring system.