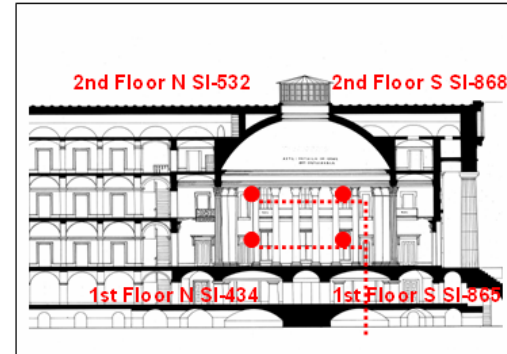


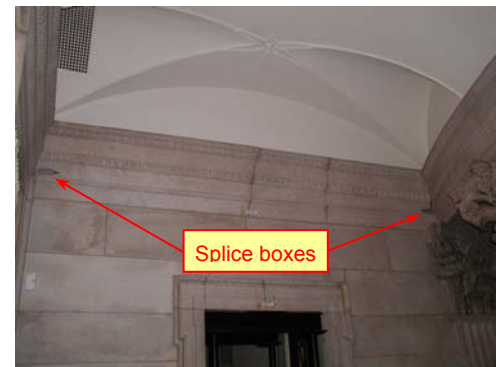
Federal Hall, New York City, USA

osmos

Integrated safety for structures



Horizontal Optical Strands location on the 1st and 2nd Floors



Unobtrusive installation. Here, the Optical Strand cannot be seen. The splice boxes at either end of the strand are barely visible.

Preventive Monitoring of Effects of Geotechnical Work

Client

National Park Service / Einhorn Yaffee
Prescott Architecture & Engineering
New York

Structure

Federal Hall
28 Wall Street
New York City, USA

Context

Built in the 1840's, Federal Hall is a four-story building constructed from marble and brick bearing walls, masonry arches, and vaulted floors.

The client had observed several disorders, including significant cracks, between the exterior walls and the masonry around the rotunda.

Client's Needs

The client therefore decided to conduct an investigation of the possible causes of the damage. An important additional consideration was the possible effects of geotechnical work planned in the immediate vicinity of the building, in view of its stabilization.

Instrumentation Installed

- 9 Optical Strands on four levels
- 1 triaxial accelerometer
- 5 crack watcher X-Triggers
- 4 temperature sensors (one per level)

The compatibility of OSMOS optical strands with esthetic concerns made it possible to carry out the installation unobtrusively.

Initial Results

The monitoring revealed that all levels of the structure exhibit roughly similar deformations. This may mean that the structure behaves like a statical "monolith".

Client Benefits

"The OSMOS system has been an important component of our decision making process. And the sensors in the public spaces are unobstrusive – a determining factor for a public monument. In the coming months, we will be able to monitor the structure during the construction phase of the project. This will allow us to modify methods of construction whenever we obtain readings that exceed our specified limits"

Marie Ennis, P.E.

Project owner of Federal Hall National Memorial



Close-up of splice box at one end of Optical Strand.



Crack watcher X-Trigger on the subbasement level.