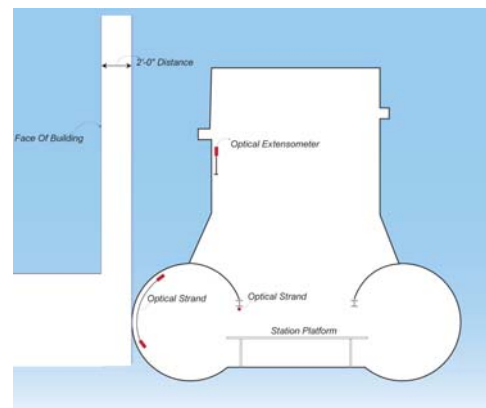


Subway tunnel, 119 Fulton Street, New York City, USA

osmos

Integrated safety for structures



Sensor location



Optical Strand on a beam

Monitoring of a tunnel under adjoining works

Client

Shuster Management

Structure

Subway tunnel at Broadway Nassau Street Metro Station, under Fulton Street.

Context

The client is adding 7 stories to an existing building immediately adjacent to the subway structure. The NYC Transit Authority was concerned about the surcharge of the additional building load on to the subway tunnel.

Client's Needs

The client wishes to monitor the subway tunnel during the construction of the adjacent project to ensure that the increase in stresses in the tunnel structure is within acceptable limits.

Instrumentation Installed

- 4 Optical Strands (2 at the tunnel walls, 2 at the station beams)
- 3 Optical Strand extensometers at the mezzanine level
- 2 temperature sensors
- 1 monitoring station

Initial Results

First results indicate that the additional load has a negligent effect on the subway structure. We were also able to capture the effect of trains on the structure in a dynamic mode.

Client Benefits

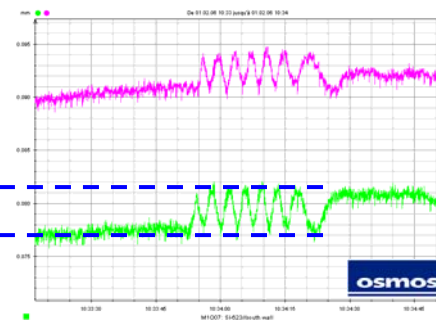
The monitoring of the subway structure was required for a building permit. The ability to monitor with OSMOS equipment saved money over traditional methods and provided a more accurate view of the results



Optical Strand on the tunnel vault



0,004 mm



Dynamic deformation after a metro train passing: The train wheels are highly visible