

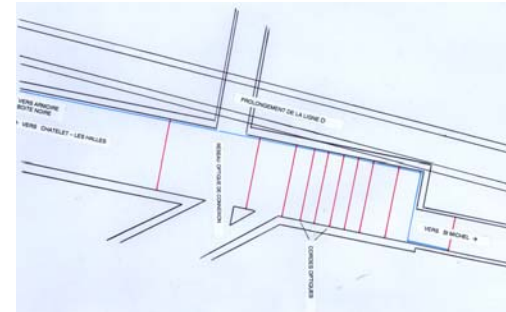
Châtelet- Saint Michel Stations, Paris

osmos

Integrated safety for structures



Traffic continues during installation



Installation of the Optical Strands on the tunnel vault

Surveillance of the effects of neighboring work

Client

Paris transport system (RATP).
Department of Structural Engineering and Urban Planning

Structure

Tunnel vault, built in automatic block (Jacobson type) pre-fabricated elements, in the section on line B of the fast suburban network (RER) between the stations of Châtelet and Saint Michel, built in 1971

Context

Line B is subject to very heavy traffic: 270 trains a day.
In order to extend line D, it was necessary to drill an adjacent tunnel, which would cause vibrations and shocks on the tunnel on line B, destabilizing the terrain, which is composed of clay and alluvium clay.

Client's requirements

The client wants to maintain traffic on the line during the work. Taking convergence measurements when traffic is halted is onerous financially.
The client wants to take measurements on the adjacent work continuously (24/24 7/7) so that, if the alarm threshold is reached, he can halt it.

Instruments

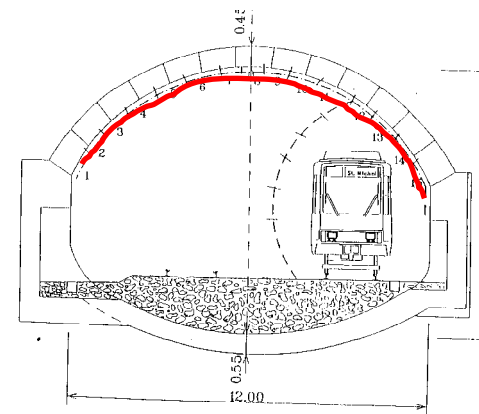
- 1 monitoring station
- 10 Optical Strands 15 meters long
- 3 temperature probes

Initial results

The data recorded indicated that the vault was stable, so that the neighboring work could continue, uninterrupted.
The OSMOS system was also used to validate stability after completion of the work.

Advantages for the client

The client did not have to stop the railway traffic while the work was carried out.
He was also able to use the OSMOS system to monitor the work undertaken previously.



Section of the vault fitted with OSMOS instruments

Manual convergence measurements compared with OSMOS measurements

