

Shopping Center Parking, Heerlen, Netherlands

osmos

Integrated safety for structures



LIRIS Autonomous Optical Strand installed on post

Prediction of a collapse 3 days in advance

Client

Heerlen Municipality

Structure

Parking located under residential buildings and a shopping center.

Context

Geotechnical soundings had advanced a suspicion of grounds decompression situated at 70 meters under the existing structure.

Client's needs

The client wished to be informed in a very premature way about any structural distortion, and wanted to be able to take the entire safe disposals measures in case of any risk of collapse.

Instrumentation

- 16 Optical Strands, including 4 LIRIS Autonomous Optical Strands
- 1 Temperature Sensor
- 1 Monitoring Station

First results

After the installation of 16 sensors on the pillars of the parking the 25th of November 2011, the first results showed a normal structural behaviour. On the 28th of November, abnormal evolution of the deformation was recorded by the Optical Strands showing a worsening distribution of the mechanical efforts. The client decides to evacuate. On the 2nd of December, one of the pillars breaks and the slab collapse.

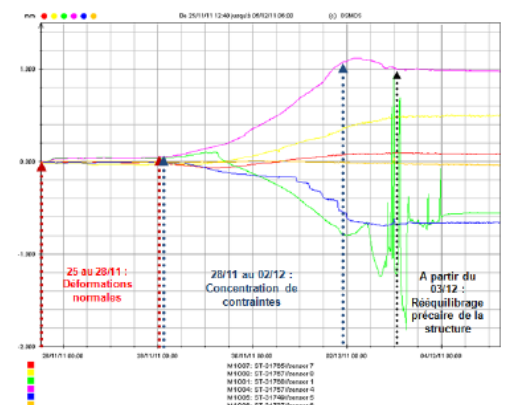
Client benefits

Thanks to the precocious information supplied by OSMOS, the client had been able to act three days before the collapse by evacuating the residents and closing the shopping center.

Nobody has been hurt.



Structure after collapse



Deformation graph analysis of the structure before and during the collapse

osmos

benelux

Integrated safety for structures