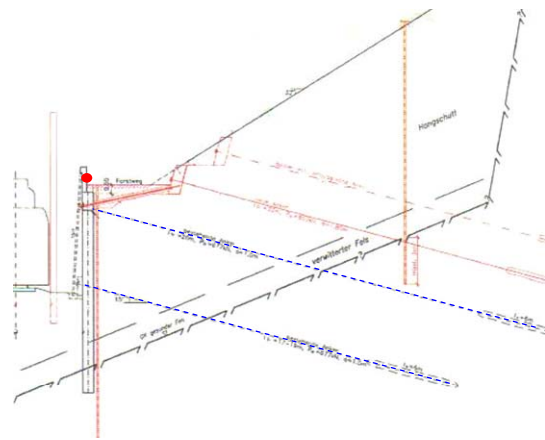


Olten Retaining Wall, Switzerland

osmos

Integrated safety for structures



Section of the retaining wall. Optical Strands generating line is localized with the red spot. Tie positions are in blue.



Installation of the Optical Strands, along the wall.

Safety availability of a retaining cantilevered wall

Client

Swiss National Railway Company SBB

Structure

Retaining cantilevered wall boarding railway tracks.

Context

The structure shows some failure (slip of strands) and must be reinforced. A project of consolidation is carried out.

Client needs

The client wishes to ensure the safety availability of the retaining wall while the reinforcing process is being undertaken. He wants to detect any failure of an anchorage.

Instrumentation

- 1 monitoring station
- 12 x 10 m long Optical Strands
- 6 inclinometers
- 6 temperature sensors

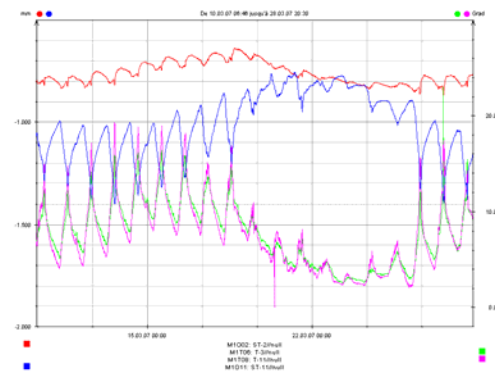
First results

During a calibration period, the normal behaviour of the wall and the influences of external parameters are defined. A characteristic elongation of a part of the superior wall would prove a failure in the anchorage.

The structure has not shown any weakness during the first period of the reinforcing process.

Client benefits

The client is ensured to detect early enough any failure in the structure to undertake quickly appropriate measures to protect the railroad traffic, which is kept in use.



Reaction of Optical Strands (elongation in mm, ST1 in red and ST11 in blue,) to temperature variation (in pink and green)



Sketch showing the position of Optical Strands (In red) and inclinometers (in green).



ANDREAS STEIGER
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