

# LA VALLEE VIADUCT

LE PECQ - FRANCE

## Monitoring of viaduct movements during grouting works

R.E.R. line A is one of the most frequently used lines of the Parisian transportation system.

It crosses the River Seine on several bridges built in the 1870's.

The RATP, in charge of running the line, has decided to improve the foundations of La Vallée viaduct.

The works had to be done without interrupting the train traffic and without any risk to the passengers.

SolData and the IGN (French Geographical Institute) have installed several CYCLOPS to monitor 18 arches of the viaduct over 220 linear metres.

The complete system was set up in 2 days:

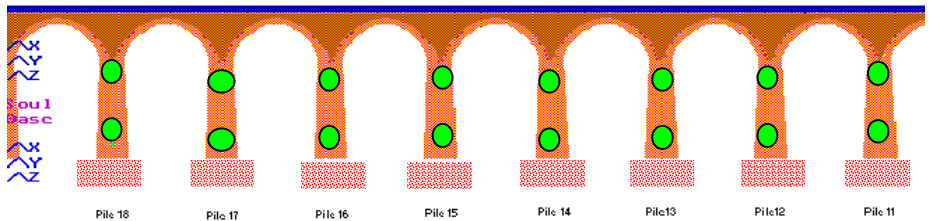
- Prisms were fixed on piles.
- The theodolite base station was on the roof of an electricity generator next to the site.
- Reference targets, installed in adjacent areas, allowed to correct the atmospheric effects and to compensate for the movements of the theodolite itself.

Each monitoring target gave 3 displacement values: X, Y, Z. The certified accuracy at 120 m was 1 mm in the 3 dimensions.

The system was programmed to set off an alarm as soon as a 5 mm movement was detected.



La Vallée Viaduct – RER A



Grouting works beneath the viaduct's piles and monitoring targets on the piles

OWNER :	R.A.T.P.
SPECIAL WORKS :	SOTEM
DATE OF WORKS :	1997
<b>WORKS CARRIED OUT :</b>	
<ul style="list-style-type: none"> <li>• Real-time monitoring of 18 arches of the viaduct and alarms.</li> </ul>	