

# Geomonitoring



Building activities affect ground conditions, adjacent constructions and the object, which is being constructed. The impact can cause damage, which is perceptible immediately, but can also, cause damage, which develops or can only be noticed at a later stage. Fugro executes a number of measurements during the various building and operational phases in order to minimise the impact and prevent damage. Monitoring the behaviour of the sub-soil and of constructions enables an operating method which would be risky without this knowledge.

## MONITORING THE SUB-SOIL AND CONSTRUCTIONS

The following measurements, automatic or manual, monitor the behaviour of the sub-soil and of constructions before, during and after construction:

- piezometers;
- ground-water-level and height of rise;
- inclination;
- extension/compression;
- ground-pressure;
- compressive and tensile forces;
- displacement and distortion;



## MONITORING MEASUREMENTS

Constructions can be monitored with the following measurements:

- pile length by acoustic measurements;
- static or dynamic load testing;
- vibration monitoring
- edge joint monitoring;
- distortion of surface and subterranean constructions;
- monitoring of cracks;
- photographic assessment;
- plate load test;
- pile foundation inspection.





#### GEOPHYSICAL MEASUREMENTS

The following geophysical investigations to establish the soil structure and to locate buried obstacles are also executed by Fugro:

- ground probing radar (GPR) investigation;
- electro magnetic (EM) investigation;
- geo-electric investigation;
- magnetometer investigation.

#### SPECIALIST TAILOR-MADE MEASUREMENTS

The Geomonitoring Department consists of people, educated in various disciplines and with vast experience. We can also supply innovative solutions for non-standard measurements. We have at our disposal our own instrument builders, designers and consultants; this enables us to provide total solutions. Examples of this type of projects can be found on our

**websites: [www.fugro-nederland.nl](http://www.fugro-nederland.nl) and [www.fugro.nl/pannerdensch](http://www.fugro.nl/pannerdensch)**



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