PROJECT DESCRIPTION
MEASUREMENT & PHOTOGRAMMETRY
FIELD MEASUREMENT AND ANALYSIS

UNDER your feet
Develop | Design | Consult
Geotechnical Engineering GmbH

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| Project: | Bahndamm |
| Location: | Barendrecht, Netherland |
| Year: | 2006 |

Measurement installation of a geosynthetic load transfer layer over high speed piles (HSP) for railway embankment

## PROJECT DESCRIPTION

For the intersection, free crossing of a two-track tramway line and a motorway the access dam for the tramway had to be constructed. The up to 8.5 m high dam was constructed with a slope angle of 1:2. To minimise construction time and long-term maintenance cost a combination of HSP-Piles and a load distributing geosynthetic layer was designed which can be locally adopted to subsoil conditions and which minimises the effects of differential settlement To review the design assumptions and to investigate the load transfer within the reinforced soil structure an extensive measurement program was installed.

## POJECT FACTS

- 350 m tramway dam within a recreation area, no preconsolidation possible
- Subsoil with extremely low bearing capacity existing of peaty and clayey deposits up to a depth of 20m
- Groundwater table at 0,40 m under surface
- 7.500 piles with a diameter d = 180 mm and 500 piles with d = 273 mm and pile head widening
- Local bearing capacity increase of dam fill material by the use of cement stabilisation within the dam

## OUR SERVICE

- Determination of geosynthetic tension forces by analytical and numerical calculations
- Conception, layout and installation of equipment to determine geosynthetic strains and vertical pile forces
- Installation of pressure cells, load cells and strain gauges
- Determination of relevant cross sections for measurements
- Comparison of measured and calculated load distribution

Project was carried out in cooperation with Institute for Geotechnical Engineering of Clausthal University of Technology.