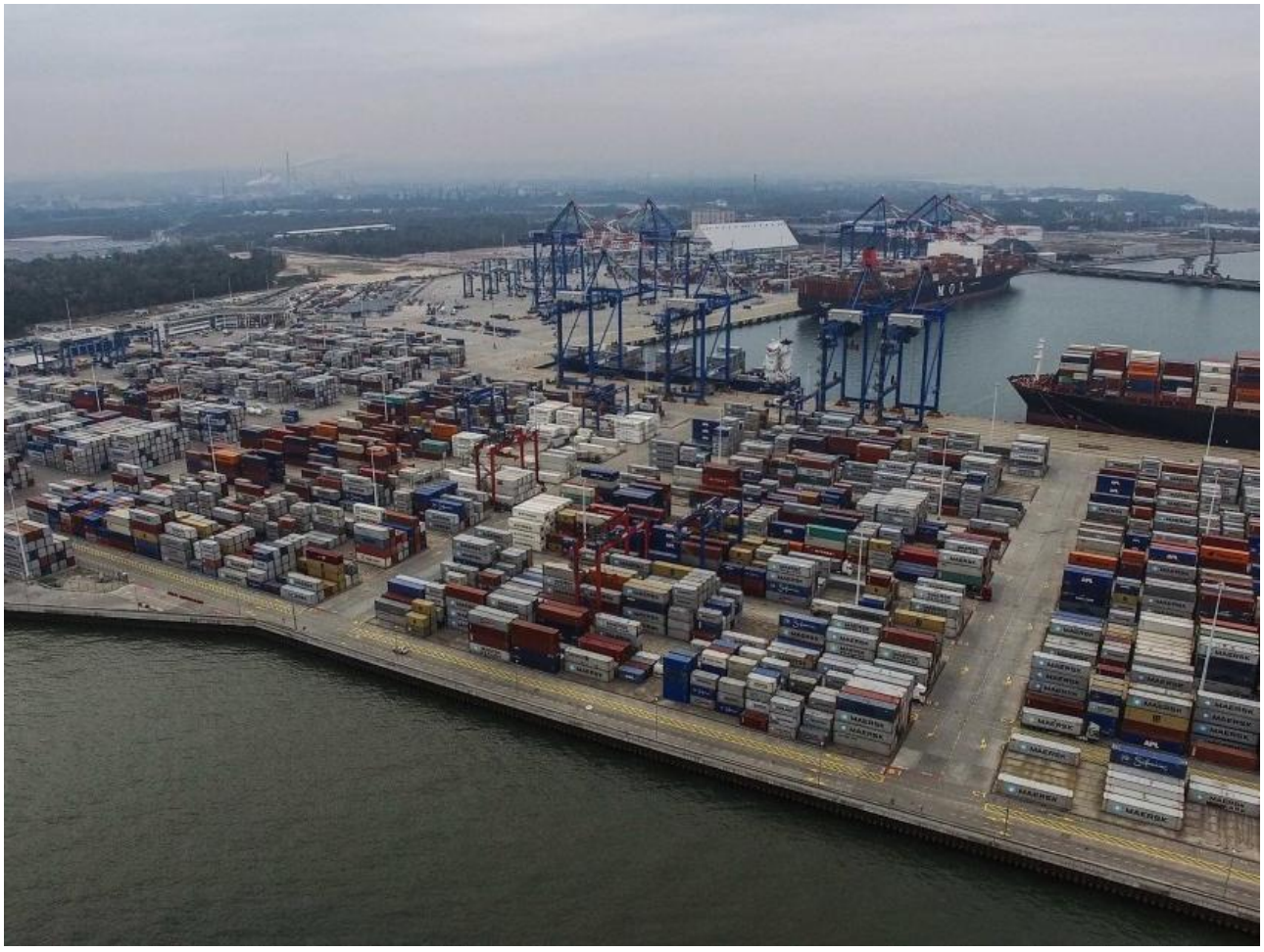
DCT Container Terminal North Port

Gdańsk

In order to improve access to the existing DCT container terminal, the ground under the modernized access track and under the foundation of the new crane had to be reinforced.



The project

The modernisation of DCT, Poland's largest container terminal and the only deep-water terminal in the Baltic Sea, was carried out by Hochtief Polska, which commissioned the geotechnical works to Keller Polska.

The challenge

The geotechnical investigation showed that there are loose and medium compacted sandy soils with local silt layers in the subsoil, and in some places areas of total loosening and voids in the subsoil caused by illegal amber mining were found. The above mentioned conditions made it impossible to directly install the designed access track and the foundation beam of the gantry crane. A cheap method of reinforcement guaranteeing safe, direct foundation of the track and crane was sought.

The solution

Vibroflotation technology, i.e. vibrocompaction, was chosen as the method of soil reinforcement under the track and crane. Loose and medium compacted sands, as well as local weakness and voids were filled with sandy material and compacted accordingly, eliminating weakness and ultimately compensating for settling along the track and along the crane joist foundation. In total, about 2100 vibroflotation points were made under the access track and the crane beam to a depth of 3 to 8.5 m p.p.t. and a total length of about 8200 mb. The control probing confirmed the high effectiveness of the method and achievement of the assumed in the project degree of soil compaction ID ≥ 0.65. Keller's works were performed in May/June 2006.

Project facts

Owner(s)
DCT

Keller business unit(s)
Keller Polska

Main contractor(s)
Hochtief

Engineer(s)
prof. Michal Topolnicki- Keller Polska

Solutions
Bearing capacity / settlement control

Markets
Industrial

Techniques
Vibro compaction