

## Montoir de Bretagne: preloading and reinforcement

Soil reinforcement

1997 - 2010



FRANCE - Loire-Atlantique

Client

PORT AUTONOME DE NANTES - SAINT NAZAIRE

Owner

Port Autonome de Nantes - Saint Nazaire



### The Project

The platforms behind the various quays of the freight and container terminal on the Montoir de Bretagne site are intended to accommodate logistics warehouses.

These projects must take account of substantial geotechnical constraints related to the scale of the highly-compressible muddy deposits that have filled the channel cut into the rock of the Armorican massif by the predecessor of the present river Loire: the compressible thickness can vary from a few metres to more than thirty metres according to the sector.

### Our Services

TERRASOL assisted the Port Autonome de Nantes - Saint Nazaire with ten or so preloading operations undertaken since 1997. The unique set of data collected was used to develop and validate a geotechnical model able to simulate the results of the pre-loadings, taking into account the consolidation and creep of the deposits, the drainage systems installed, and the history of the backfill operations.

In a sector where the load anticipated by these pre-loadings was proved to be insufficient in view of the constraints of a new project, a reinforcement system by rigid inclusions was finally selected and was the subject of a project geotechnical study (G2), followed by a mission of supervision of geotechnical works (G4).

#### Key-points of our mission

- Geotechnical summary
- Prediction and monitoring of settlements related to pre-loadings
- Project and detailed studies of the reinforcement solution with rigid inclusions