

ANALYSIS OF THE PHASED BUILDING OF A BREAKWATER

Purpose(s): Design check verification for the phased building of a breakwater

Client: Sogréah

Date: February 2003

Location: Confidential

Partners: -

Project manager:

Daniel BILLAUX

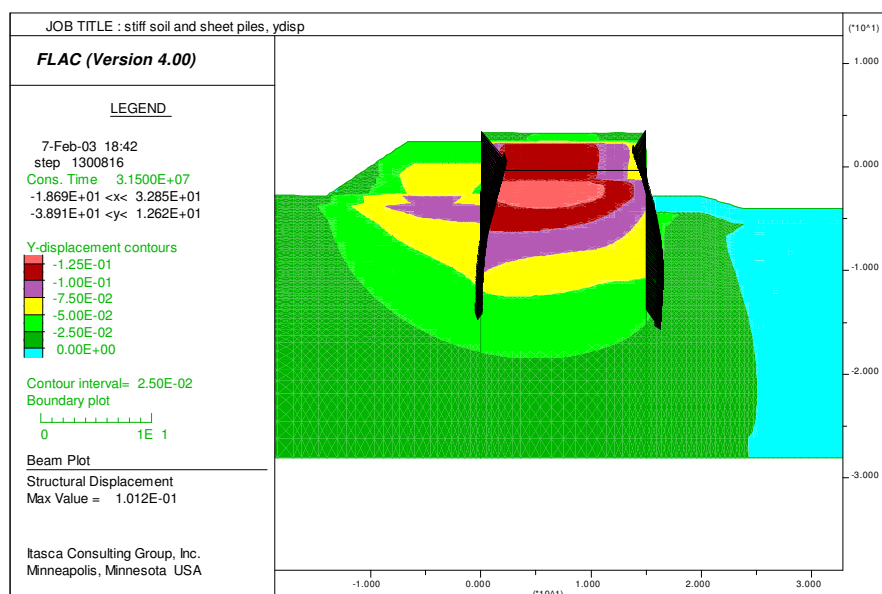
Code(s) used: FLAC

In order to build a breakwater on a compressible sea floor, **pre-loading by a temporary island** was planned.

Using the FLAC software, a two-dimensional model was built to confirm stability during the **eight phases of construction**.

The breakwater also was tested by simulating extreme conditions (a storm) and long-term settlement. These **coupled hydro-mechanical simulations** included eleven phases, from temporary island construction to application of a lateral load due to swell.

The model allowed the required pre-loading time to be assessed.



Vertical displacement contours and sheet-pile displacement vectors

KEYWORDS:

- Offshore
- soil-structure interaction
- Temporary loading

⇒ **RESULTS:**

- The stability of the breakwater was confirmed.
- The sheet-pile displacements, and the loads they must sustain, were evaluated.