

Award-winning paper in 2019

Papers published in *Geotechnical Engineering* are eligible for awards from the Institution of Civil Engineers. Papers from any of the ICE journals can be nominated for several awards. In addition, each journal has awards dedicated to their specific subject area.

On Thursday 4 June 2020, the award was announced for the following paper published in *Geotechnical Engineering* in 2019. The editorial panel nominated their best papers and an awards committee chaired by Tim Broyd allocated the award.

Crampton Prize

The Crampton Prize, presented for the best paper on geotechnics practice, was awarded to Verreydt *et al.* (2018).

Abstract

In the framework of the reorganisation of several historical wet deposits of a chemical processing plant, one of the oldest wet deposits was cleared because of environmental and economic considerations. The stored sludge (around 350 000 m³) was transported to the neighbouring environmentally controlled deposit, Veldhoven (Ham, Belgium), and stacked on top of existing sludge, using the sludge itself as dyke construction material.

To calibrate the embankment stability analysis procedure, a full-scale slope failure test was conducted on an embankment built with industrial calcium fluoride (CaF₂) sludge. The Norwegian Geotechnical Institute–active, direct simple shear, passive (NGI–ADP) material model was used to perform a finite-element back-analysis of the full-scale slope failure test. Anisotropic conversion factors are suggested to convert the in situ measured vane shear strengths to shear strengths at different anisotropic stress states, which can then be implemented in the NGI–ADP model. The simple and quickly executable in situ vane shear test was used to master the uncertainties linked to the heterogeneity of the sludge. Sludge heterogeneity not only depends on sludge composition, but also on manipulations during transport and handling of the sludge at the construction of the elevations. The results of the full-scale slope failure test support the proposed modelling of the embankment stability problem.

REFERENCE

- Verreydt K, Van Gemert D, Rauwoens P, Houtmeyers J and Claes T (2019) Analysis of a full-scale slope failure test on a sludge embankment. *Proceedings of the Institution of Civil Engineers – Geotechnical Engineering* **172**(5): 417–431, <https://doi.org/10.1680/jgeen.18.00181>.