



# Shrinkage and swelling behavior of clay when drying out

## Graduation assignment

**CRUX is a leading independent consulting firm in the field of geotechnical engineering, geohydrology and environmental remediation.**

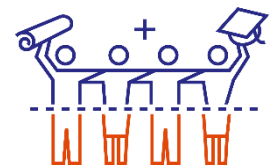
Through our intensive cooperation with our sister companies BouwRisk (monitoring) and CEMS (engineering microservices), we are able to provide innovative, (geo)technical design solutions for all subsurface issues. One of these issues concerns bearing capacity for low embankments on weak soils.

Due to climate change, the Netherlands faces increasingly hot and dry summers which will lead to an increase in foundation damage. While the research toward this damage mechanism is mainly focussed on peat layers and wooden piles, the

effect on clay layers is not to be underestimated. This is especially the case when the clay layers are susceptible to swelling and shrinkage. A good example of this damaging effect can be seen in the town of Roden, where the combined effects of artificial lowering of the groundwater table combined with a dry summer lead to extreme structural damage.

The focus of this thesis is to use both numerical studies and lab tests to obtain a better understanding of this behaviour and develop a better risk assessment protocol for this type of damage.

Looking for another assignment or internship? Contact us and ask about the opportunities.



Interested in taking on this subject in a dynamic and professional working environment? Get in touch:

**CRUX Engineering BV**  
Korneel de Jong  
dejong@cruxbv.nl  
M +31 (0)6 344 175 91  
cruxbv.nl

Good coffee, challenging projects and being part of Jong CRUX are the basics of your career at CRUX. We are happy to tell you about the opportunities.