

Rendering textures in the visualisation of Plaxis 3D

Background

Plaxis 3D is a system for creating, calculating and evaluating 3D models of soil and structures, such as tunnels, dikes and skyscraper foundations. The system consists of an input module (3D modeller), a calculation module (using the Finite Element Method), and an output module (visualisation of results).

Problem definition

Plaxis 3D models can be quite extensive, representing the actual situation on a building site. This includes soil layers of different materials, such as sand and clay, but also structures made of, for example, concrete. The model is visualised in the main GUI window using OpenGL.

It is already possible to distinguish different materials by assigning them a color in the visualisation of the model. It is even more compelling that textures can be assigned to materials. Such textures resemble the appearance of the material, making it easier for the user to recognise different materials in the visualisation of the model.

Project goals

This internship comprises the extension of Plaxis 3D, and the OpenGL visualisation of the model in particular. The implementation will be offering facilities for visualising textures, but also for storing them, for example in the material database.

The user of Plaxis 3D must at any time have the possibility to (temporarily) disable the visualisation of textures in the model.

How to apply

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