

Ground Models in support of Euro Code 7 (2nd generation) Course Programme

Overview

EuroCode7 now requires every construction involving ground engineering to have a “**Ground Model**”. Despite being a Formative requirement in the Code, the Code does not define what a Ground Model is, how it should be generated, the competences required to produce it and its use. However, the Ground Model should interface with that part of EC7 called the Geotechnical Design Model. Experience shows that the Ground Model needs to be a living document that is amended during ground investigation and construction of the engineering works as the ground is progressively revealed. Companies will use their Engineers and Geologists to generate these models depending on their availability, and the training proposed here is for those tasked with this job whose background is from a degree in engineering.

This one-day course will provide professionals with an engineering background with the fundamental knowledge required to generate and use a “Ground Model” in accordance with EC7 (2nd Generation).

Intended for

This course is aimed at those who have graduated in civil, water and environmental engineering and now become responsible for generating a Ground Model for their company when no qualified engineering geologist is available to do so. It is also aimed at those engineers responsible for the Geotechnical Design Model and who need to know what should be expected from the Ground Model to which they are meant to interface, and the implications of its shortcomings. It therefore caters for recent recruits and young staff as well as those in more senior positions responsible for design.

Objectives

The course will provide:

- an appreciation of what a Ground Model is and what it is meant to do,
- how the Ground Model can reflect the Geotechnical Complexity Class of the works and its associated zone of influence,
- what the model should contain and from where that information can be obtained,
- how it can be generated and presented (as a word model, as vertical cross sections, as maps, as block diagrams, and as computer assisted 3D images and data sets),
- checks on the accuracy and reliability of a Ground Model and how it handles uncertainties,
- how the model interfaces between the Ground Model and the Geotechnical Design Model and Ground Reference Conditions,
- and the on-going role of a ground Model as a record of conditions encountered to the end of construction and into the serviceability of the works.

The course will do this with the aid of a Case History, the various stages of which will be used to illustrate and demonstrate the generation and evolution of a such a model and its interface with the Geotechnical Design Model.

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| Session 1 | Role and Purpose of the Ground Model. |
| Session 2 | How Geotechnical Complexity and Zones of Influence are accommodated by a Ground Model. |
| Session 3 | Model content and sources of information. |
| Session 4 | Generation and Presentation of a Model ± computer assistance. |
| Session 5 | Matters of accuracy, reliability and uncertainty for the Ground Model. |
| Session 6 | Interfaces with the Geotechnical Design Model and Ground Reference Conditions. |
| Session 7 | The on-going role of the Ground Model. |