

Name: Professor
John Burland

Job: Geotechnic
Engineer

John works in civil engineering, studying the engineering behaviour of the ground and groundwater at a site selected for a major building project – such as a bridge, tunnel or large building.

The job involves a considerable amount of detective work to analyse the underlying geological formations and to anticipate and design for the response of the ground to engineering construction works.

Benefit of the work: Civil engineering constructions taking into account all possible factors influencing how long a structure will stand firmly means that a major project will benefit people for tens or even hundreds of years.

Think you might be interested? Here are some of the skills you might need.

Personal skills or aptitudes:

- Attention to detail
- A fascination for unravelling puzzles
- The ability to stick with a project despite difficulties.

Key skills:

- Problem solving
- Numeracy – there quite a few calculations to be done in engineering and geotechnical work
- ICT – computer programs are a great help
- Teamwork – on major sites, you'd be one of a huge team
- Communication – you need to pass facts on in plain English to the developers and contractors; giving presentations to stakeholders might also be important.

Skills Build

First steps – moves you can take now

Study a variety of constructions and how they hold up. Look at everything from Meccano and Lego to CAD (Computer-Assisted Design) structures. Model-making can help you get a feel for design and an understanding of what is a probable or an improbable structure.

Third floor

To become a geotechnical expert, you need to put in the study time. A levels in the sciences are good options, but you could go for a vocational A level in construction and the built environment, plus another GCSE A level subject or VCE A level in engineering.

Fourth floor

Going on to HE (higher education) means you'll be studying hard for a geological sciences or geotechnics degree. You might be tempted into engineering – or to mining engineering or vulcanology (the study of volcanoes). There's more choice in this area than you might think. Specialist studies can take you to the roof. These higher qualifications mean you'll be able to work anywhere in the world your expertise is needed. There was a definite need for John's experience and skills in Pisa!

