



## Slope stability assessment

**Cornwall Consultants Ltd** are able to undertake analytical slope stability assessment in all material types, including soil and rock slopes. Using specialist analytical software and industry best practice methodology, Cornwall Consultants Ltd are able to make a comprehensive quantifiable assessment of slope stability and assessed risk, in accordance with relevant standards (EC-7).

Cornwall Consultants Ltd are able to work with contractors and designers in the formation and engineering of slopes, both cuttings and embankments, to maximise slope angles and increase developable areas. At Cornwall Consultants Ltd we are able to couple knowledge of soil behaviour with expertise in the analytical approaches necessary to balance safety with cost efficiency.

At Cornwall Consultants Ltd we are able to provide experienced and qualified engineering geologists who are able to undertake ground investigation works in accordance with relevant standards, to identify and assess the strength characteristics of the slope, and identify risk factors that are pertinent to soil or rock slope instability. We are able to provide bespoke advice and recommendation with regard to soil and rock slope remediation and stabilisation to mitigate the risk of ongoing or future slope instability.

### Slope stability assessment: What is involved...?

**Soil slopes:** In the first instance it may be necessary to undertake an intrusive site investigation, in order to ascertain ground conditions across the slope, including the nature and strength of superficial deposits, the depth to bedrock, and the presence of ground and surface water. This will entail an intrusive investigation, typically involving the excavation of shallow boreholes, or trial pits.

On completion of the site investigation, the characteristics and strength properties of the ground will be assessed, and strength parameters will be assigned to the superficial soils. This information may then be input into specialist software to model slope stability and mechanisms for failure.

The slope stability risk is presented as a Factor of Safety (FoS), analysis and assessment can be tailored to the requirements of our clients and results can be presented in accordance with industry standards.

**Rock slopes:** Where there is a risk of rock slope instability, Cornwall Consultants Ltd will provide a suitably qualified and experienced engineering geologist to site to inspect the rock slope, and to undertake scanline surveys of the exposure. The scanline survey consists of careful measurements of the discontinuities (faults and fractures) within the rock mass, as well as an assessment of external risk factors acting on the slope face.

The information from the scanline survey is then presented on a stereographic multi-dimensional projection, this enables the interaction between the discontinuities to be assessed via a process of kinematic analysis. An experienced modeller can then provide both a likelihood of rock slope failure, and can also predict the likely mechanism of rock fall from the slope, such as a toppling, wedge or planar type failure.

### Slope face remediation and stabilisation

In the event that the slope stability assessment highlights significant risk of slope instability, Cornwall Consultants Ltd can provide recommendations on appropriate and cost effective remedial measures. Depending on the nature of the slope, these may include slackening of the slope face, removal of unsafe material from the slope face, removal or control of groundwater (drainage) and in some cases proactive slope stabilisation measures (installation of mesh, soil nails, bolts, grouting etc).