What makes GEO5 unique?

**Combination of Analytical and Numerical Methods**

Analytical methods enable effective and rapid structural design and verification, however in some cases additional verification and modelling should be done by using FEM. The same program environment and the possibility of transferring data between programs allow the user to take full advantage of the GEO5 suite.

**Supporting Many Standards**

Geotechnical methods applied in GEO5 software are used all around the world. GEO5 adopts a unique system of implementing standards and partial factors, which are separate from the structural input. GEO5 contains a database of standards, however it is possible to create user defined standards.

GEO5 supports:
- Factor of Safety (ASD)
- Limit States Theory (LSD)
- Eurocodes EN 1997, including National Annexes
- Load Resistance Factor Design (LRFD – USA)
- Other geotechnical standards (SNIP – Russia, GB – China)
- Standards for reinforced concrete (EN, ACI, SNiP, GB, AS...)

Very affordable packages coupled with attractive maintenance and leasing plans are available. Please ask your dealer for pricing.
Geotechnical Software

Stratigraphy
This program is designed to process results from site investigations (boreholes, wells, CPTs, DPTs, SPIs, DMTs...), to generate 2D or 3D geological models and then to export cross sections and geological profiles into other GEO5 programs.

Stratigraphy - Logs
This extension module of the Stratigraphy program is designed to produce geological data reports from site investigations. It provides a comprehensive database of pre-defined templates and the ability to create user-defined templates and data reports.

Stratigraphy - Cross-Sections
This extension module of the Stratigraphy program is designed for easy creation of geological cross-sections (including lenses, faults). It provides a scaled output of the cross-section with field tests and soil profiles. No CAD program is needed.

Stratigraphy - Earthworks
This extension module of the Stratigraphy program is designed for modelling structures, such as foundation piles, roads, railways, quarries, slopes, and others. It also provides calculation of earthwork or terrain movement volumes.

Point Cloud
This program allows fast processing of point clouds (up to 100 million points) and export of resulting points into the Stratigraphy program or external files.

Analytical Solutions

Slope Stability
This program performs slope stability analyses by optimisation circular and polygonal slip surfaces. The program can model anchors, geo-reinforcements, nails, presence of water (above or below terrain), surcharge and earthquake effects.

Slope Stability - Water Flow
This extension module of the Slope Stability program allows the determination of the pore pressure in the slope by using the steady state or transient groundwater seepage analysis by the finite element method.

Sheeting Check
This program is used to make advanced design of retaining walls using the method of elasto-plastic non-linear analysis. It allows the user to model the real structure behavior using stages of construction, to calculate the deformation and pressures acting upon the structure, to verify the internal anchor stability, cross-sections (steel, RC, timber) and the strength of the anchors. The program has a comprehensive library of commercially available sheet piles.

Sheeting Design
This program is used for quick design of non-anchored and anchored retaining walls. The results show the required embankment lengths, the internal forces and the forces in anchors. The program provides verification of RC, steel or timber cross sections. The program has a comprehensive library of commercially available sheet piles.

Rock Stability
This program is used to analyze the stability of rock slopes on a predefined plane or varying slip surface. It is also solving rocks wedges in stereographic projection.

Nailed Slopes
This program checks for the slip and overturning stability of a reinforced block. It also calculates the internal stability of a nailed wall utilizing a straight or broken slip surface and the bearing capacity of the nail(s) and its global stability using the Slope Stability program. The concrete cover can be reinforced using a steel mesh.

Analytical Solutions

Ground Loss
This program is used to calculate ground loss in road embankments, railway embankments, and earth dams. It performs a detailed analysis of the ground and the structure to determine the volumes of earthwork and the required embankment height.

Cantilever Wall
Gravity Wall
Abutment
Prefab Wall
Gabion
Masonry Wall

GEO5 contains multiple programs for the analysis of retaining walls and supporting structures. These programs provide verification of overturning, slip and the bearing capacity of the foundation soil. They enable the user to check the cross-section strength (plain concrete, RC, masonry) or the stability of wall blocks. The global stability can be checked in the Slope Stability program.

MSE Wall
This program is used to analyse a variety of earth structures reinforced by geogrids (a comprehensive library of commercially available geogrids is implemented). The program checks for slip and overturning of a reinforced block, calculates the internal stability of a wall (extendable or inseparable reinforcement) and the global stability using a fully optimised circular slip surface.

Pie
This program is used to analyse the vertical bearing capacity of a single pile loaded in tension or compression, pile settlement and horizontal bearing capacity. The program allows for the design of various cross-section types (RC, steel pipe, timber pile).

Pile CPT
This program verifies the bearing capacity and settlement of a single pile or a group of piles, based on the results provided by cone penetration tests (CPT).

Micropile
This program is used to verify steel tube micropiles. When calculating the bearing capacity of a micropile, the program verifies both the root and the shaft.

Pile Group
This program is used to analyse a pile group (pile raft foundation with a rigid pile cap) using the spring method (FEM) and analytical solutions. Floating piles and piles constrained within subsoil can be analysed. The program allows for the design of various cross-section types (RC, steel pipe, timber).

Anti-slide Pile
This program is used for the design of pile walls which stabilise slope movement or increasing the safety factor of the slope.

Shaft
This program is used to analyse spatial earth pressures on a circular shaft and to determine the internal forces on the structure.

Beam
This program enables the analysis of foundation/ground beams on elastic subsoils together with the automatic generation of load combinations according to EN 1990.

Settlement
This program can determine the vertical settlement and the time-dependent consolidation under surcharge or embankment loading.

Earth Pressures
This program calculates the earth pressures (active, passive, and at rest pressures) acting on an arbitrary shaped structure.

Ground Loss
This program is used to analyse and determine the shape of the subsidence trough above excavations and evaluate the damage to buildings situated in the affected area.

Try GEO5 Data Collector App
Download from Google Play and Apple App Store.

www.finesoftware.eu