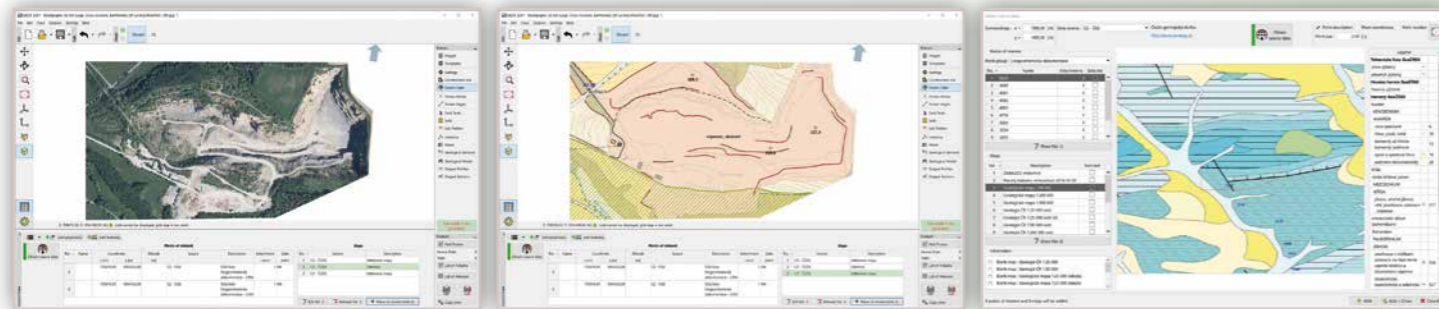# Stratigraphy - Geological maps and site investigation data

The GEO5 Stratigraphy program enables the import of geological maps and site survey data from various sources, including topographic and satellite world maps (OpenStreetMap, Google Maps).
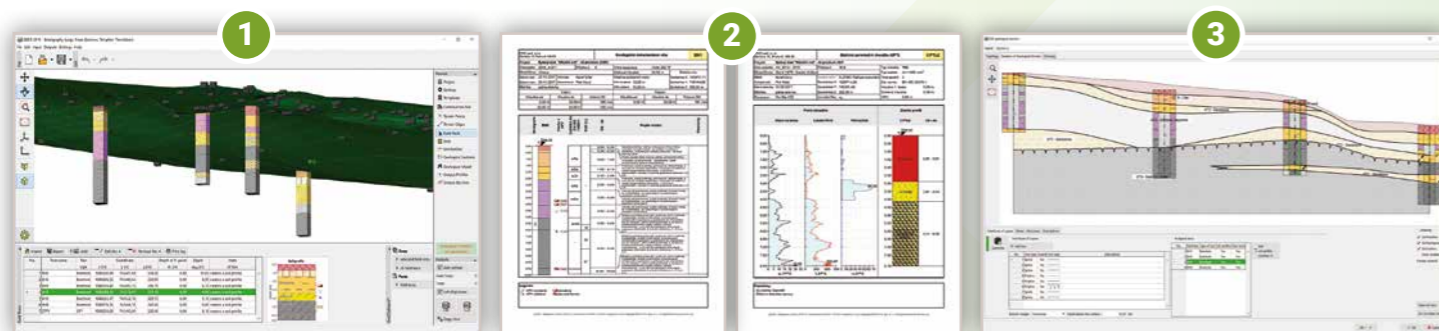

Ortophoto map

Vector map

Geological map

# Stratigraphy - BIM and 3D modelling

The GEO5 Stratigraphy program is designed to integrate the site investigation with the geotechnical calculations.

1
• Create a digital model of terrain from the loaded points
• Input or import boreholes and field tests

2
• Create and print reports of all tests

3
• Make geological interpretation of tests by creating geological cross sections
• Define geotechnical soil types and groups
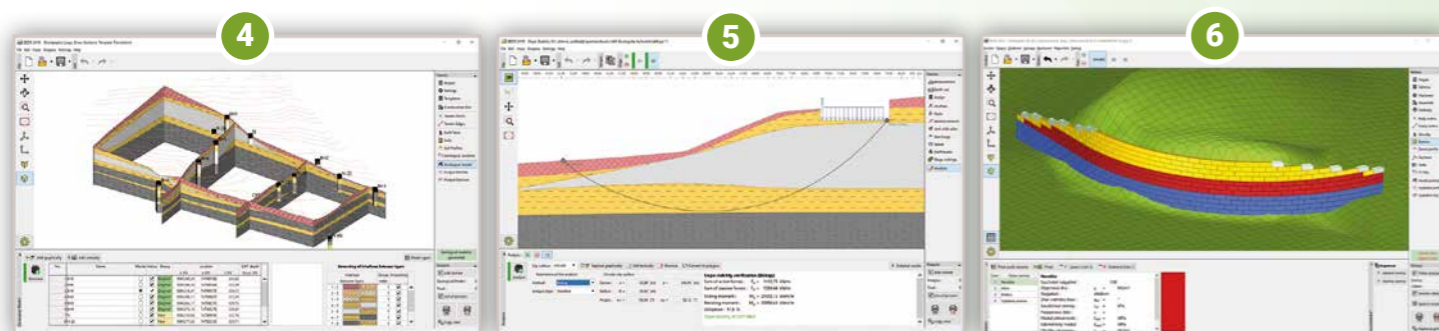
4
• Generate a 3D subsoil model based on created cross sections
• Input soil parameters for geotechnical soil types

5
• Export the final cross sections and soil profiles to the GEO5 design programs

6
• Modelling of structures, calculation of earthworks or terrain movement volumes.
• Placement of structures directly into the 3D geological model

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GEO5
Geology Package

• Professional subsurface data reporting system
• Easy interpretation of tests in geological cross sections
• Creation of 3D and 2D geological models
• Export of cross-section and soil profiles to other GEO5 programs
• BIM support - export to IFC, LandXML and DWG formats
• Point Cloud processing
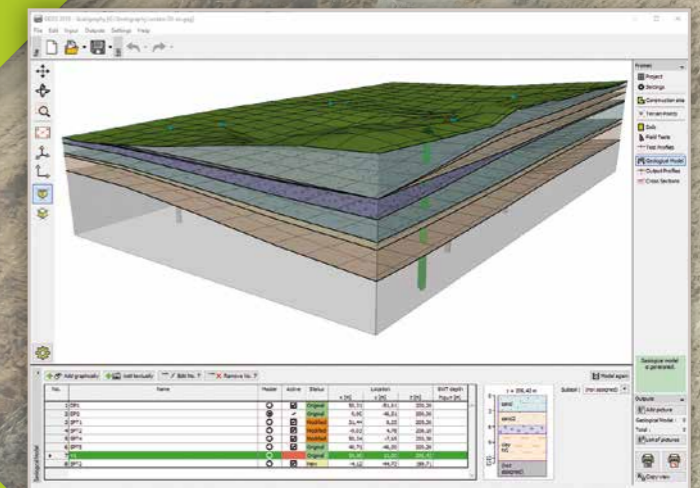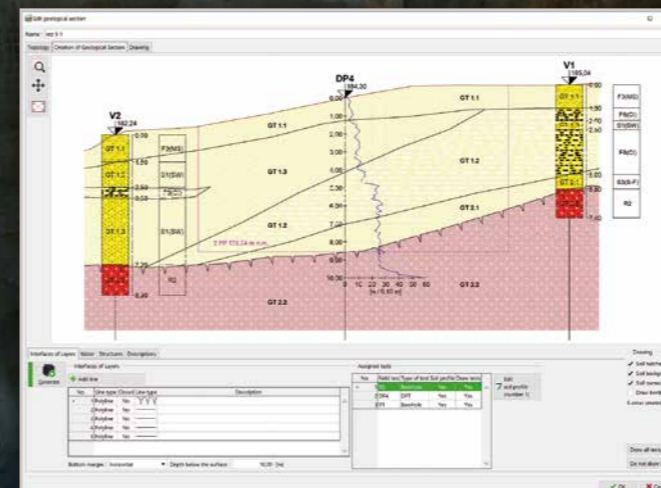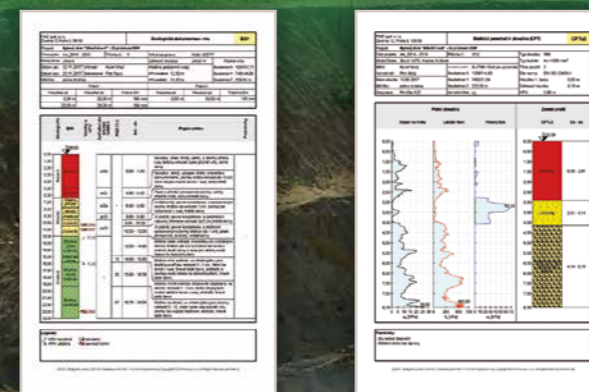
Stratigraphy - Logs

The Stratigraphy - Logs module is used for geological data reporting from site investigation (boreholes, wells, penetration tests). It provides a comprehensive database of pre-defined templates and the ability to create user-defined templates and data reports.
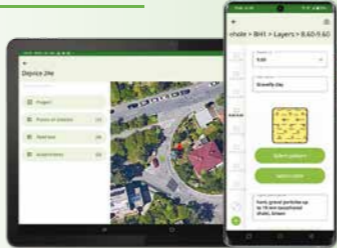
Program features

- Professional site investigation reports including boreholes, wells, cone penetration tests, standard penetration tests, dilatometer tests, pressuremeter tests ...and more
- Comprehensive database of pre-defined templates
- Ability to create user-defined templates and data reports
- Catalogue of patterns and colour shades (gINT, GeProDo, DIN 4023, GEO)
- Automatic creation of soils catalogues during input of boreholes
- Many types of casing, annular fills and head types for wells
- Print outputs to full page or in selected scales
- Export to wide range of formats (PDF, MS Word,...)
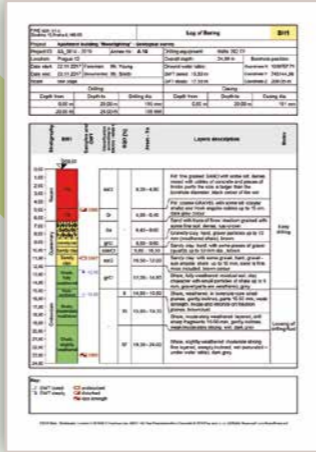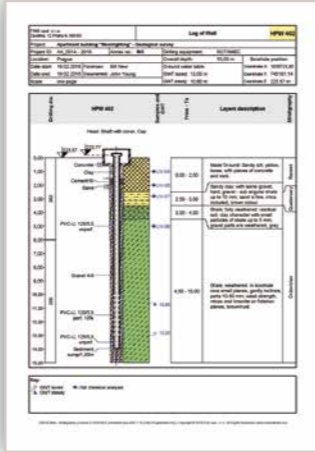
Mobile app **GEO5 Data Collector** (for Android and iOS) is used for data collection in the field or laboratory and works with mobile phones and tablets. The mobile application and the Stratigraphy program can then exchange these data.

- Two way data transfer between the app and PC
- Easy data and table input on mobile phones and tablets
- Work with maps, GPS
- Ability to attach photos, videos and audio recordings

Stratigraphy - Earthworks

The Earthworks module is designed for modelling structures, such as foundation pits, roads, railways, quarries, slopes, and others. It also provides calculation of earthwork or terrain movement volumes.

Program features

- Gradual modelling of earthworks using construction stages
- Input terrain from geodetic measurements or by defining earthworks
- Earthwork input mode - fill, excavate or combination of both
- Calculation of earthworks - against previous stages or original state
- Calculation of the change of the water volume above the terrain
- Calculation of excavation volumes of individual soils with consideration of bulking
- Auto reduction of points number when importing cloud of points
- Export cross sections for verification into other GEO5 programs
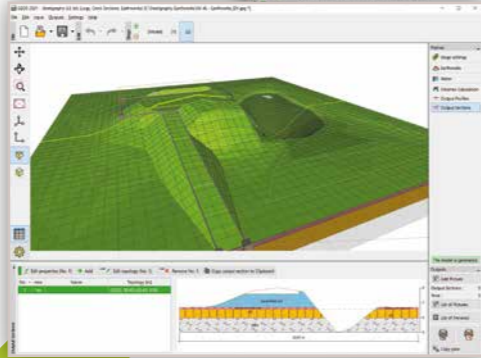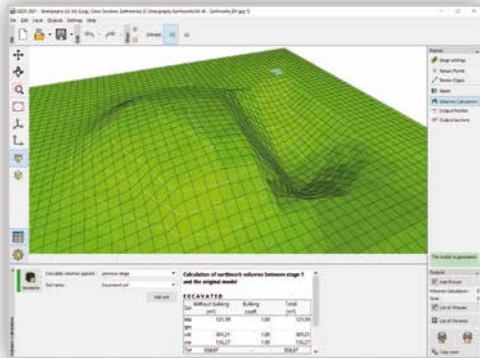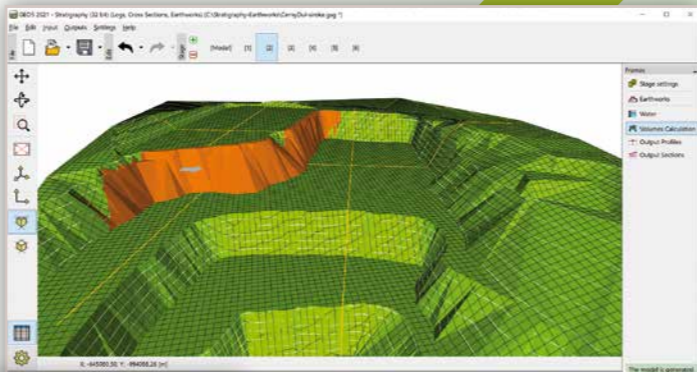
Stratigraphy - Cross Sections

The Stratigraphy - Cross Sections module is designed for easy creation of geological cross sections from site investigation data (boreholes and field tests). Geological interpretation can be done by inputing of interfaces between layers, faults and by connecting of boreholes into the model – all of that without any need for additional CAD programs.

Program features

- Straight or polyline shape of cross sections
- Viewing of selected field tests and soil profiles
- Easy input of interfaces between layers
- Creation of faults and lenses
- Definition of the geotechnical soil types and groups
- Input of different ground water levels
- Drawings of structures, auxiliary lines and user´s descriptions
- Different scaled outputs in both directions
- Possibility to display field test results or user-defined data for each layer
- Data preparation for 3D geological model
- Cross section export to PDF, DXF, DWG formats
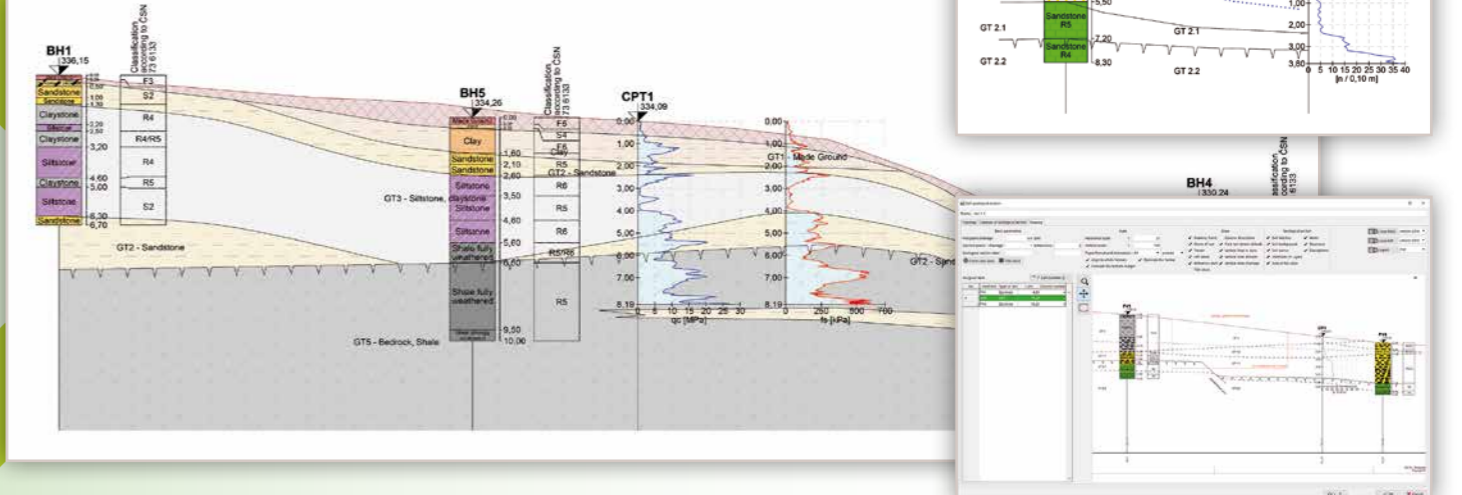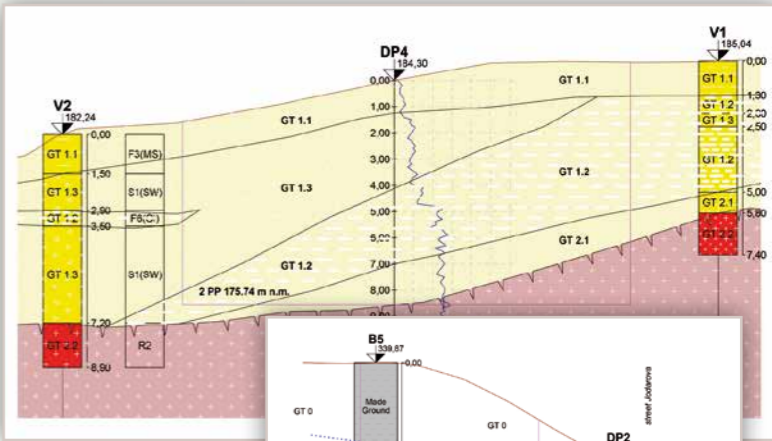
Point Cloud

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

Program features

- Data import in LAS, LAZ, E57 formats
- Simple and fast reduction of point cloud size
- Ability to remove objects, reduce vegetation
- Simple noise reduction
- Defining the construction site and cropping of point cloud
- Clear table with all modifications
- Possibility of coordinates change of the whole point cloud
- Display of colored images, altitude, or LIDAR intensity
- Export of points, construction site, and orthophoto to Stratigraphy
- Tracking of construction over time using construction stages in Stratigraphy - Earthworks
- Export of resulting points in LAS and TXT format

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