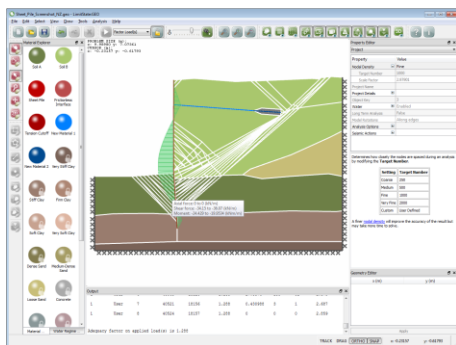
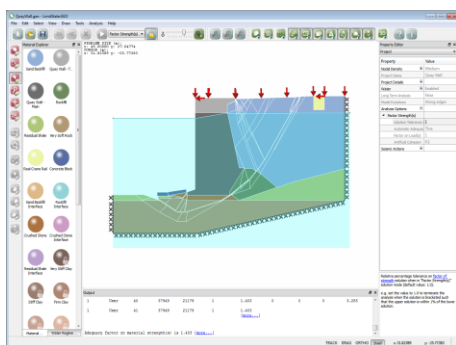


An upgraded soil reinforcement model takes into account tensile, compressive and bending failure.



Query stress and moment distributions within soil nails, sheet pile walls and other forms of soil reinforcement.

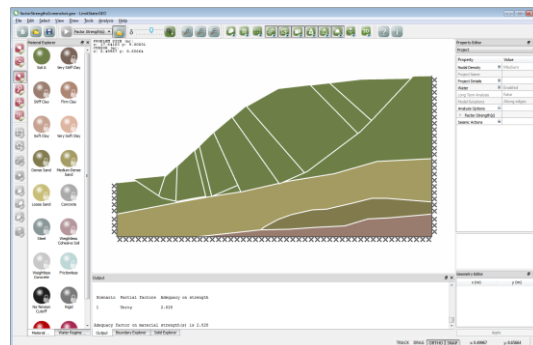


Enhanced water modelling allows water pressure distributions to be assigned on a per-zone basis as well as specification of a standard water table.

What's new in LimitState:GEO 3.0

New means of assessing safety

- It is now possible to analyse the ultimate limit state (ULS) in one of two ways, by:
 - Factoring **load(s)**
 - Factoring **material strength(s)**
- In each case a solution is obtained rapidly with a single click, without the need to spend time manually factoring parameters etc.
- Quickly determine whether your construction is under / overdesigned for the chosen set of partial factors. The software is also fully compatible with the Eurocode 'Design Approaches'.
- Alternatively, when material strengths are factored and partial factors are set to unity a global factor of safety can be obtained, facilitating direct comparison with traditional methods.
- Factoring material strength(s) provides the most natural means of analysing slope stability problems.



Problems can be analysed by automatically factoring material strength.

Improved water modelling

- New water modelling options allow users to model a different water pressure distribution in each soil layer. Possibilities include:
 - Conventional water table
 - Uniform potential
 - Uniform pressure
 - User-defined grid of pressure values
- Easily model water features such as perched water tables, aquicludes and aquifers.

More flexible soil reinforcement model

- The engineered element material has been updated to allow tensile and compressive failures to be modelled, allowing commonly used elements such as geotextiles and soil nails to be modelled more accurately.
- Different interface materials can be added to each side of an engineered element, allowing even more representative models to be generated e.g. for sheet pile walls.
- Post analysis tensile force and bending moment diagrams can be displayed for engineered elements and used to determine details such as:
 - Tensile stress distribution in soil reinforcement
 - Bending moment distributions in sheet pile walls

Add-in modules

A number of add-in modules are now available to provide additional functionality and increased productivity in special circumstances:

Extra-large problem capacity

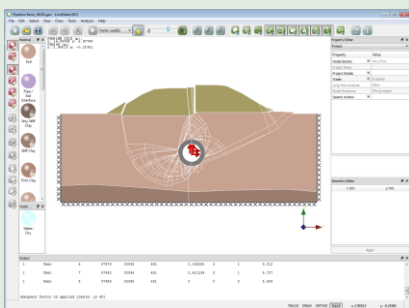
- A 64bit kernel version of LimitState:GEO allows very large problems to be solved, ideal for when highly detailed and accurate solutions are required.

Command-line interface

- The command-line interface add-in allows users to run the software from a command prompt or batch file, ideal when conducting parametric studies or when needing to run a sequence of analyses on a PC unattended.
- Modify parameters such as material and loading properties via command-line arguments, without the need to manually edit files.
- Full reports and solution files are automatically generated, as well as individual GEO files corresponding to each parameter change.

Spatial variation of material properties

- Create a grid of varying undrained material strengths within material zones using data from a spreadsheet.
- Particularly useful when tackling offshore geotechnical problems.



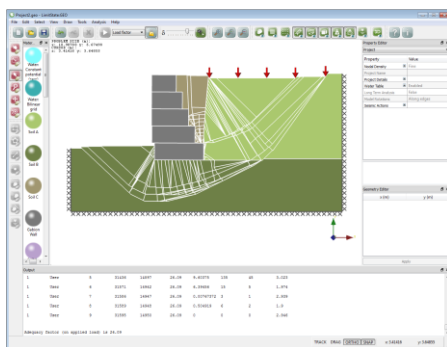
The 'spatial variation of material properties' add-in is useful for assessing buried pipelines and other offshore geotechnical problems

More informative

- A diagnostics tool has been added to check the consistency of models during production and as they are solved. Warning and error messages highlight areas where attention is required and practical information is provided to enable fixes to be made.
- The existing explorers have been updated to contain extra information, permitting rapid comparison of the properties in all parts of a problem, and hence to quicker identification of potential issues.

Quick create wizards

- A new 'Analysis' tab has been added to all wizards. This allows users to set the desired accuracy and the type of analysis to be set from the outset.
- The range of quick create wizards has also been extended to include:
 - Gabion walls
 - Reinforced soil walls
 - Sheet pile walls



Gabion, reinforced soil and sheet pile wall models can be created quickly, then modified, using new built-in wizards

Updated interface

- The look and feel of the software has been modified with a new colour scheme and new 'Windows 7' theme.

Fully supported

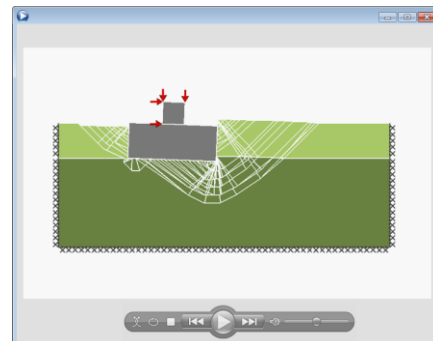
Whether you are in need of technical advice or assistance with your model, our support team are on hand to offer expert advice on all aspects of the software.

Try LimitState:GEO 3.0 for yourself

Visit www.limitstate.com/download to obtain your copy of the latest version of LimitState:GEO then try it free for 30 days.

New output options


- The results of a LimitState:GEO analysis can be exported in more file formats than before, for use in presentations and reports:
 - AVI movies / GIF animations
 - PNG or JPG bitmap images
 - EPS, PS or ASY vector drawings



Export solution graphics in a variety of useful formats, such as AVI video.

Other enhancements

In addition to those listed, many other enhancements have been made to the software, including:

- For quicker, more robust analyses, the LimitState:GEO solver engine now utilizes version 6.0.0.135 of the world renowned MOSEK interior point optimizer. 
- Added new 'frictionless' built-in material with zero shear strength and unit weight (useful for modelling smooth interfaces).
- An improved palette allows users to assign a range of natural and artificial colours to materials.
- Higher quality default rendering enhances the look and user experience.
- Various enhancements to the report output, including the ability to export as a PDF