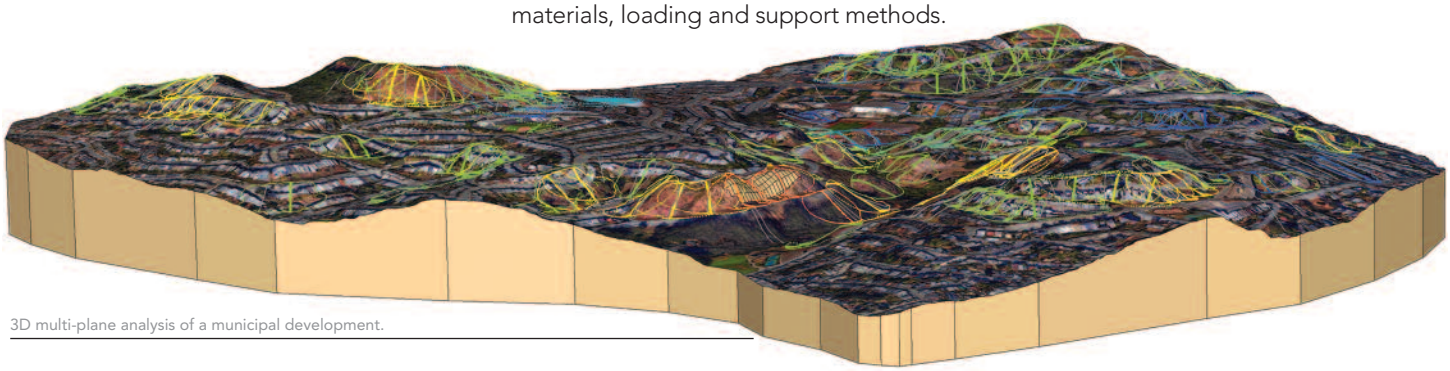
www.soilvision.com

SVSLOPE 3D

LIMIT EQUILIBRIUM SLOPE STABILITY ANALYSIS

Classic Limit Equilibrium and Stress-based Methods of Slope Analysis

SVSLOPE® 3D represents the new standard in slope stability analysis. Users can perform classic limit equilibrium slope analysis of soil or rock slopes by the method of slices or newer stress-based methods. The lion's share of the extensive *SVSLOPE*® 2D feature set has been extended to *SVSLOPE*® 3D. This includes the most complex geometry paradigms, anisotropic and unsaturated materials, loading and support methods.



3D multi-plane analysis of a municipal development.

SIMPLY THE BEST GEOTECHNICAL SLOPE STABILITY PACKAGE ON THE MARKET

- **2nd generation** 3D analysis also includes 2D analysis functions
- Easy to use with a **more advanced yet intuitive user interface**
- Accommodates **3D enclosed volume meshes** allowing for improved representation of field conditions
- Recent **10X speed improvement** (2017) leaves all other's claims of being faster without merit
- More **comprehensive search capabilities for slope failures** including Entry & Exit, Slope Search, Moving Wedges and Fully Specified slips combined with General Surface, Wedge or Ellipsoid
- Unmatched **true Multi-Plane Analysis (MPA™)** feature, allowing application over large regions considering ellipsoid or compostie ellipsoid & fault slips
- **Superior circular & non-circular composite fault slip shape** options. Faults can be defined by planes or meshes
- **Creation of complex 3D models and surface intersections with SVDESIGNER™** conceptual model builder
- Easily generate **3D models from 2D cross-sections or slice 3D models into 2D cross-sections**
- Advanced **probablistic analysis** in 2D (Monte Carlo, Latin Hypercube) and Alternative Point Estimation Method (APEM)
- New and improved **Block Searching**
- Optimization of **Critical Slip Surfaces**
- **Multi-orientation** analysis
- **Kulhawy stress-based analysis*** (used with SVSOLID™GT)
- Comprehensive set of **more than 20 available material models** including multiple unsaturated, ALM 1/2/3, Anisotropic Strength & Function, Power Curve 2, Frictional-Undrained, Hoek-Brown and Mohr-Coulomb Curved Surface Envelope models among many others
- **More available options of saturated/unsaturated transient or steady-state seepage** than any other package when coupled with your choice of SVFLUX™GE, SVFLUX™GT or SVFLUX™WR
- More comprehensive **Interslice Force Function capability** including Clipped-Sine, Trapezoidal, Fredlund-Wilson and user-defined
- **State-of-the-art report-ready graphical presentation of results** that is the best in the industry with no additional manipulation required
- More **heavily benchmarked solver** with history of 3D research dating back to 1993. Based on many peer-reviewed publications on 3D limit equilibrium slope stability
- Import Clara/W, Slope/W, Slide, DXF, SHP, ESRI and borehole data

Our award winning limit equilibrium slope stability package continues to receive significant development effort from our team. The net result is a number of features which solidify the software's position as the best geotechnical stability package on the market.

Advanced searching methods are implemented to correctly determine the location of the critical slip surface. 2D or 3D analysis is possible for increased accuracy in the calculation of the factor of safety. Advanced probabilistic analysis (2D only) or accommodation of spatial variation (2D only) is possible with the software. SVSLOPE® can be combined with SVFLUX™ to import pore-water pressures or SVSOLID™ to import soil stress conditions.

All of the analysis modules within SVOFFICE™5 are tightly integrated with our SVDESIGNER™ conceptual modeling software and the subsequent abilitiy to represent complex models built from triangulated surfaces (TINS) as well as grids.

The team at SoilVision Systems Ltd. represents an advanced group of geotechnical engineers and software developers with M.Sc. and Ph.D. degrees and decades of experience which ensures that your modeling will be successful and reliable. This allows users to be confident that results from SVSLOPE® are correct.

SVSLOPE® is currently being used on world-class slope stability projects. Top slope stability industry experts already support the use of SVSLOPE® as the new standard in slope stability modeling.

SVSLOPE 3D
LIMIT EQUILIBRIUM SLOPE STABILITY ANALYSIS

Technical Information

CALCULATION METHODS
- Ordinary/Fellenius
- Bishop simplified
- Janbu simplified
- Corps of Engineers #1
- Corps of Engineers #2
- Lowe-Karafiath
- Spencer
- Morgenstern-Price
- GLE (Fredlund)
- Sarma
- Kulhawy*
- Rapid drawdown (Duncan & Wright)
- Rapid drawdown (Effective stress + B-bar)
    - Coupled with SVFLUX™

SOLVER
- Highly optimized computation engine
- Rapid parallel processing
- Metric or Imperial units
- Peer-reviewed
- Heavily benchmarked
- Developed based on research started in 1993

GEOMETRY/MODELING
- Unlimited regions
- Unlimited materials
- Finitie element integration
- Overlapping regions
- Extrude 2D to 3D
- 3D enclosed volume meshes
- Import borehole data
- Import regions from DXF files
- Import shape files (SHP)
- Import ESRI ASCII grid files
- Import from Clara/W, Slope/W and Slide
- Slice 3D models to 2D cross-section
- Create 3D models using SVDESIGNER™
    - Advanced surface intersections
    - Import OBJ, 3DS, DEM, DTM, DXF
    - Import DAT (TecPlot)
    - Import CSV/XLS

GROUNDWATER COUPLING
- Couple with SVFLUX™GT
- Couple with SVFLUX™GE
- Couple with SVFLUX™WR
- Ru
- B-bar
- Piezometric lines
- Grid of pressure heads
- Phreatic correction
- Steady-state
- Transient-state (saturated/unsaturated)
- Climate

STRESS COUPLING
- Couple with SVSOLID™GT
    - Allows for more comprehensive Kulhawy stress-based analysis

LOADING
- Point loads
- Distributed loads (uniform or variable)
- Seismic loads (Spectral Pseudo-Static)

MATERIAL STRENGTH MODELS
- Mohr-Coulomb
- Mohr-Coulomb - curved surface envelope
- Undrained strength (Phi = 0)
- Undrained strength ratio
- SHANESEP
- Depth-dependent undrained
- No strength (water)
- Infinite strength (bedrock)
- Anisotropic strength
- Anisotropic function
- Anisotropic linear model (ALM1, 2, 3 and 4)
- Barton-Bandis
- Shear/Normal function
- Bilinear
- Hoek-Brown
- Hoek-Brown generalized
- Power-Curve 1 and 2
- Frictional-Undrained
- Unsaturated
    - Phi-b
    - Vanapalli
    - Fredlund
    - Vilar
    - Khalili
    - Bao

SLIP SEARCH METHODS
- True 3D Multi-Plane Analysis (3D MPA™)
    - Large region application
    - Ellipsoid
    - Composite ellipsoid & fault
- Mulit-Orientation analysis
- Grid and tangent
- Entry and exit
- Moving wedges
- Slope search
- Fully specified
    - General
    - Wedge
    - Grid
    - Ellipsoid
    - Combination

INTERSLICE FORCE FUNCTIONS
- Constant
- Half-sine
- Clipped-sine
- Trapezoidal
- Army Corp of Eng assumption 1 & 2
- Lowe-Karafiath
- Fredlund-Wilson
- Fully specified

ADVANCED FEATURES
- Includes 2D and 3D analysis
- Excess pore pressure
- Export 3D slips to SVSOLID™ for SSR analysis
- Comprehensive unsaturated analysis
- Unsaturated shear strength
- Tension cracks
- Reinforcement
- Anisotropic regions
- Rapid drawdown

SUPPORTS
- Active vs passive anchors
- End-anchored bolts
- Easily define/edit patterns
- Grouted tiebacks
- Grouted tiebacks with friction
- Soil nails
- Hong Kong soil nails
- Geotextiles
- Piles and Micropiles
- Back analysis of support force
- User-defined support model

GENERAL
- 2nd Generation 3D slope stability software
- Highly advanced CAD features
- Easy to use and intuitive user interface
- Optimized menu system
- SVOFFICE™5 Manager (beginner/expert mode)
- 64-bit multi-core CPU and multi-threading
- Recent 10X speed improvement (2017)
- Compatible with Windows 7, 8, 10
- Batch analysis
- Extensive QAQC program
- Fully-integrated help system
- Unmatched customer support
- Responsive update cycle
- Industry-leading graphical representation of results (fully scaleable/report-ready)

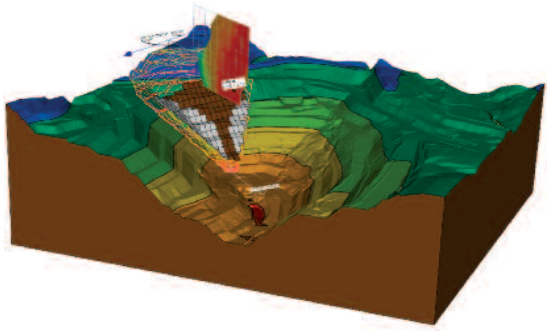
PRICING (USD) - Also includes SVSLOPE® 2D

Standard Perpetual (full purchase)	**$5,695**
Standard Annual Lease	**$3,417/year**
Professional Perpetual (full purchase)	**$8,995**
Professional Annual Lease	**$5,397/year**
Mining	**Contact us for pricing**

Network licensing can be purchased for 150% cost of personal single user licenses.

Exclusive **VIP-Upgrade** subscription gives you an ***All-Access Pass*** to new versions (major updates) and new general feature additions (minor updates), maintenance releases and bug fixes as well as priority technical support. You may enjoy these benefits for as long as you are a subscriber.

Contact us for a quote or more details...



SOILVISION®
120 - 502 Wellman Crescent
Saskatoon, SK S7T 0J1 CANADA
T: +01 306 477 3324
F: +01 306 955 4575
soilvision.com • contact@soilvision.com

SVS20171026