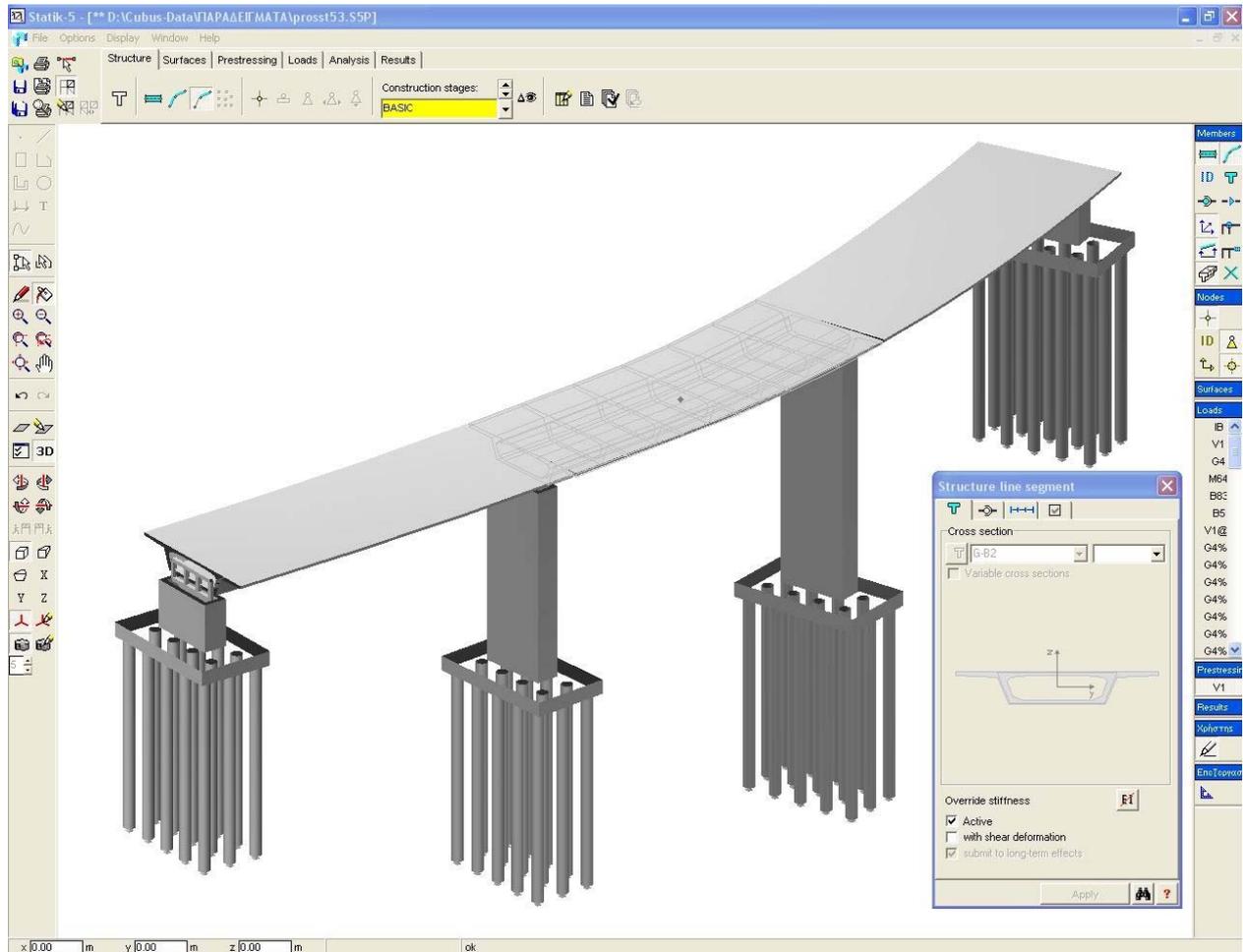


STATIK-5

Space frame analysis

Theory of 1st and 2nd Order
Dynamic with Response Spectra
Nonlinear Calculations

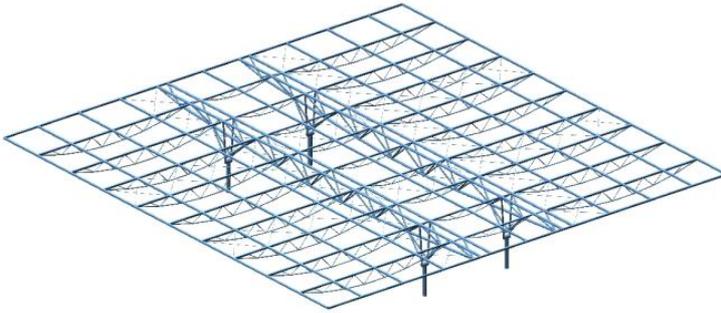
Stability
Prestressing



Statik-5 is a comprehensive tool for the design and analysis of plane and spatial frames according to 1st and 2nd order theory. The program offers excellent modelling capabilities for structural geometry and loading. The state-of-the-art interactive user interface is fully graphical and easy to learn. It was optimized for fast data input and efficient data modification. Like all programs of cubus's series 5, Statik-5 uses the intuitive object-oriented graphics editor, print manager (cubus Viewer) and project manager (cubus Explorer).

cubus Hellas Ltd

Software · Consulting Services

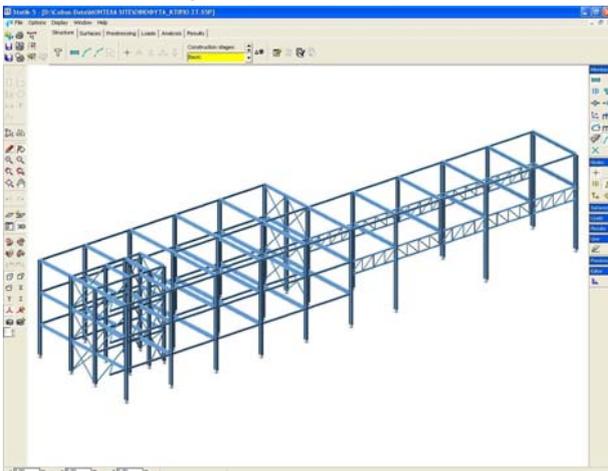


Structural Model

- General plane and spatial frames
- Virtually unlimited number of elements and nodes (limitation due to available computer memory only)

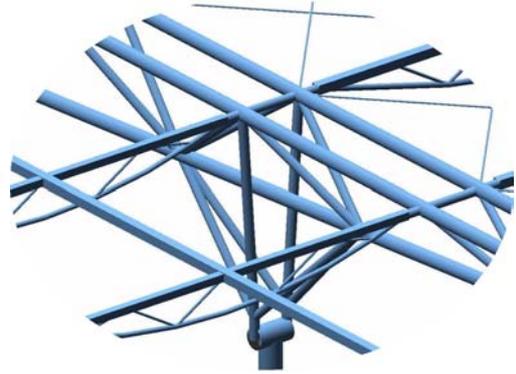
Members

- Constant or linear varying cross sections
- Automatic linear interpolation of cross section geometry for intermediate points
- Structure lines with linear varying cross sections for the modeling of arbitrary curved structure geometry
- Eccentric connection to members and supports
- Hinges (with or without elastic spring) at members end
- Truss members, acting in compression or tension only



Cross Sections

- Extensive library of hot-rolled steel sections
- Extensible library of parametrized sections (solid, thin-walled, reinforced concrete sections)
- Fully graphical definition of general, user-defined sections (polygonal shape, composite, reinforced, prestressed etc.)

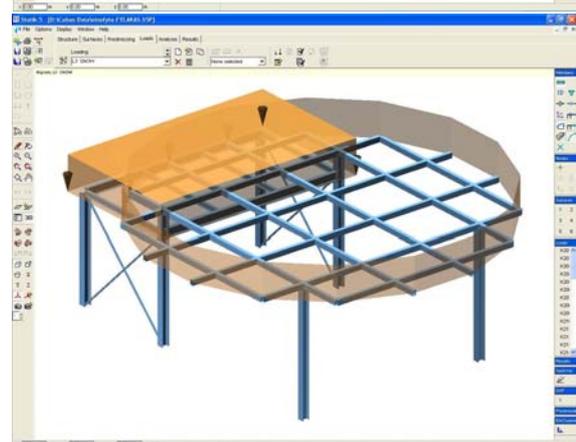
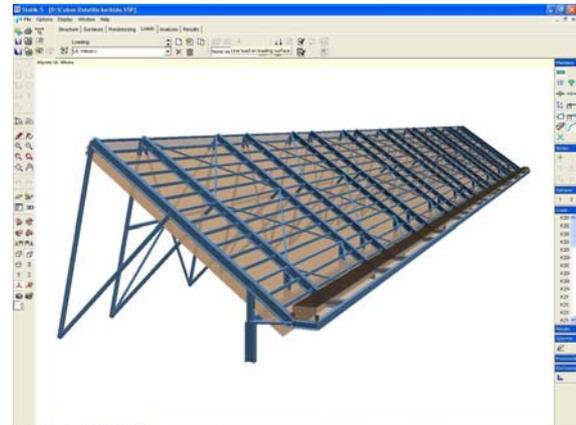


Nodes

- Individual support conditions (blocked, elastic or free) for each degree of freedom
- Supports with compression or tension only
- Constraint conditions for nodes and individual degrees of freedom

Loading Model

- Nodal, member and surface loads grouped to load cases
- Nodal loads: Forces, moments, prescribed deformations
- Member loads: Concentrated or linear distributed loads (force, moment, strain, curvature) in global or local directions (including projective directions)



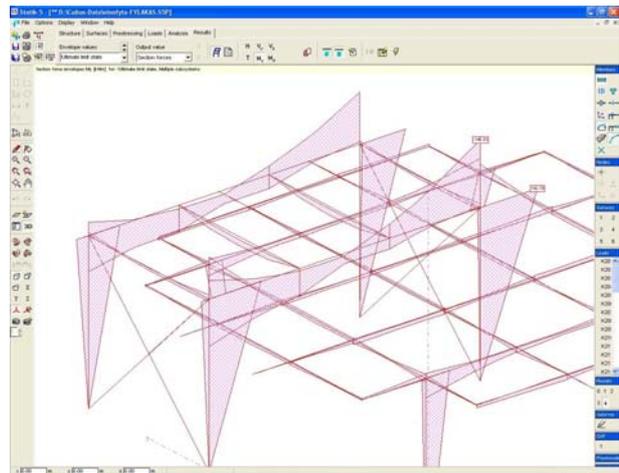
- Trapezoidal loads over a member serie
- Member loads with eccentricities
- Surface loads: Concentrated, line and area loads positioned on a plane surface with automatic load transfer to selected (underlying) supporting members
- Acceleration loads for self weight and earthquake
- Cross sections (also composites) with their mass per lenght
- Combined load cases (as linear combination of other load cases, for calculations after 2nd order theory or nonlinear)
- Load generators for highway bridges etc.
- Code specific characterization of loadcases to actions

Analysis

- Linear elastic analysis according to 1st and 2nd order theory including initial deformations
- Initial deformations can be generated automatically after different criteria
- Nonlinear analysis of load cases for nonlinear supports and members
- Buckling load and corresponding eigenmode
- Dynamic analysis: Natural vibrations and response spectrum
- Analysis of long-term effects due to creep and shrinkage

General Results

- Numerical and graphical output of section results in tables, diagrams or plots. Automatic generation of result sections due to geometry and local position of loads
- Superposition of results of different construction stages
- Selective output generation (working planes, partial subsystems, selected objects etc.)
- Automatic or interactive labeling of graphical output
- Result browsing: Display of diagram values at current cursor location
- Special notification of diagram zones, where given values are exceeded
- Units and number of digits for labeling and table output user defined for every kind of result
- Result presentation in user defined units and accuracy



Results for Load Cases and Load Combinations

- Section forces, reactions, member deformations and nodal displacements
- Cross section results: stresses, strains etc. at cross section's edges or user defined positions; extreme values per stress component and material

Results for Envelope Values

- Result superposition: Automatic according to national codes (actions, design scenarios, limit states) or manual (interactive definition of superposition rule)
- Envelope values for section forces, member deformations, support reactions
- Envelope values for section results (stresses, strains etc.)

Results for Influence Lines

- Influence lines for user defined moving loads

RC Design and Cross Section Analysis

- Automatic post processing with analysis program FAGUS-5 for reinforcement design
- Linear and nonlinear cross section analysis: e.g. design, ultimate load, interaction diagrams

Supported National Codes

- EC2, DIN, E-DIN, SIA, OeNorm, EH91, GReek Norm etc.

User Interface

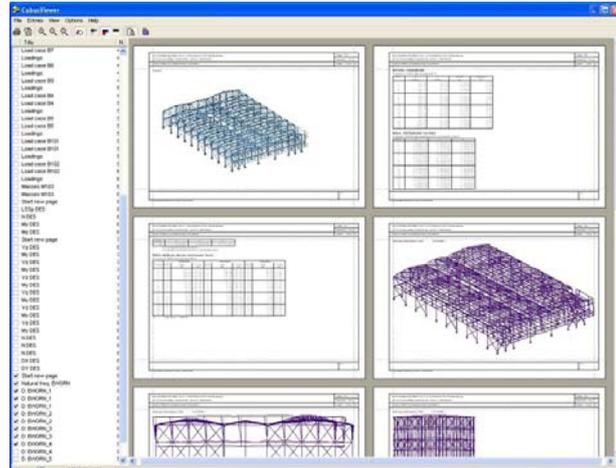
- Fast and efficient, fully graphical input of structural elements (members, supports) and loads using the intuitive, object-oriented graphic editor in 2D and 3D
- Working with user-defined partial subsystems, working planes and views for simplified input of complex structures
- Multistep undo/redo function
- Optimized interface for fast data input and data modification of single objects and series of objects
- Integrated object search for defined properties
- All graphical data in layers for easy visibility and selectability changes
- Highly interactive structural analysis: Actual results are recalculated on the fly after input modification (e.g. geometry, cross section, supports, loads etc.)
- Multiple document interface with simple data exchange (copy and paste)
- Integrated CAD drawing functions for supplementing output with dimension lines, constructions, notes, sketches etc.
- Configurable user interface (colors, symbols sizes, fonts, units, output accuracy, predefined settings for dialogs etc.)
- Extensive online documentation: Context sensitive, printable form, full text search
- Microsoft Windows application (NT4, 2000, ME, XP)

Interfaces

- Import and Export of DXF-files
- Export of all numerical and graphical data into other Windows applications (clipboard, Word, Excel etc.)
- Text interface for import of structural and loading model
- Import of STATIK-4 projects

Print Manager (Cubus Viewer)

- Editable preview of all output data: Changing print order, scales, colors, visibility
- User-defined page layout (page format, company logo, texts, borders etc.)



Project Manager (Cubus Explorer)

- Project explorer with Windows-Explorer functionality
- Additional functions for project archiving, compression and decompression
- Graphical preview of projects

Optional Modules

- 3D extension: Analysis of spatial structures
- Nonlinearities: Nonlinear analysis (supports and truss members)
- Specialities: Buckling, construction stages, curved structure lines, nodal constraints, axis point for cross sections
- PT module: Prestressed and post-tensioned members
- Dynamics: Natural frequency and response spectrum analysis
- Long-term effects

Sample Structures

