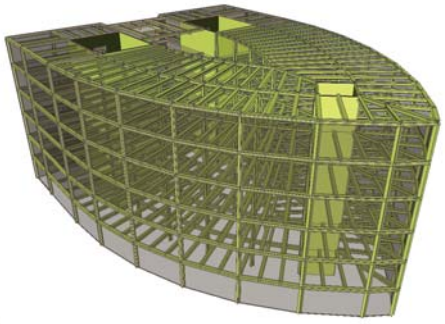
Scia Engineer 2008
New features in this release

Scia Engineer

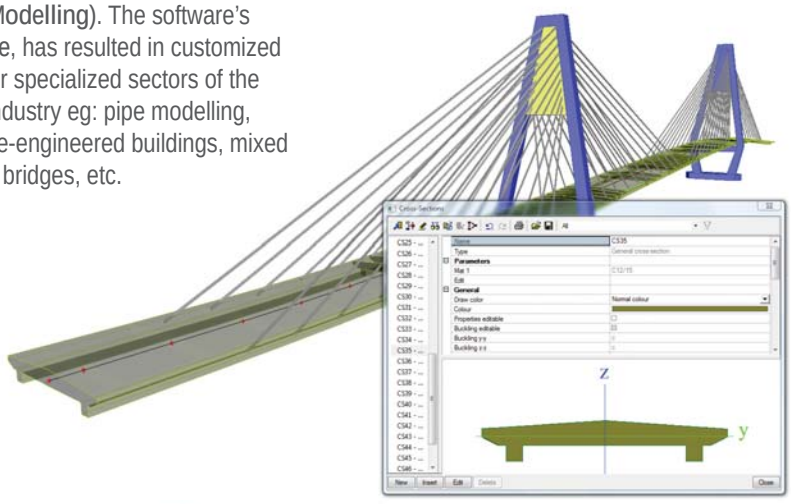
The Scia Engineer software is designed and developed to provide structural engineers and designers with an efficient, comprehensive and robust tool for modelling, analysing, designing and producing drawings of steel, concrete, timber, aluminium and composite structures.

Scia Engineer contains a calculation system for static, dynamic and stability analysis of structures and for their design according to appropriate technical building standards. It is based on the finite element method and used to calculate and design structures consisting of 1D components such as columns, beams, curved members and 2D components such as walls, plates, curved shells, etc.



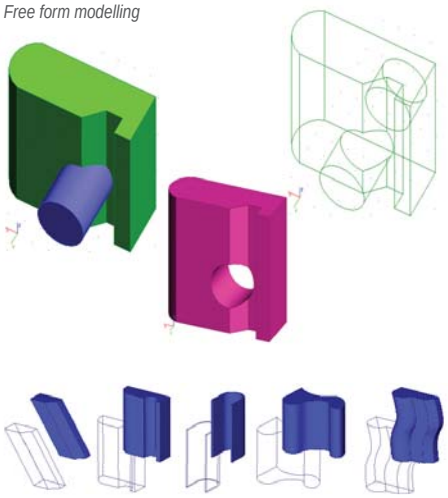
Facade panels, loading panels on "slabs"

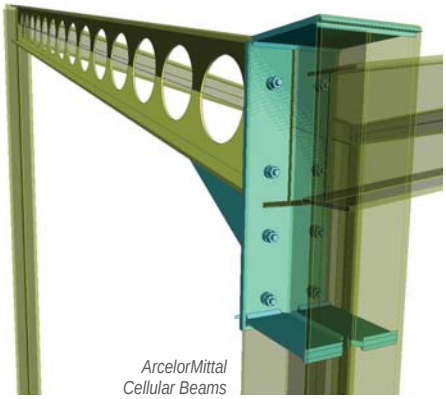
Scia Engineer is also a platform used for modelling structural work in 3D; it has a dual model (structural model and analysis model) and is strong component for BIM (Building Information Modelling). The software's open interface, has resulted in customized applications for specialized sectors of the construction industry eg: pipe modelling, scaffolding, pre-engineered buildings, mixed concrete steel bridges, etc.



Member recognizer

Free form modelling





ArcelorMittal Cellular Beams

Speed

- Drawing engine optimized
- Document with fixed presentation objects to prevent regeneration
- Delete function drastically faster
- Concrete code checks optimized and improved with new algorithms
- Steel code checks with faster response
- Load panels to transfer loadings to beams
- Batch processing for automatic design
- Support of 64 bit memory access for solving large structures!

Multi-material Design

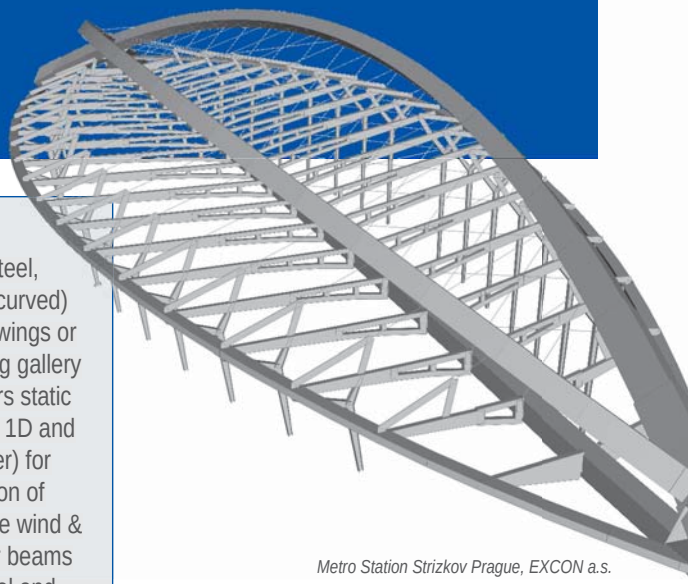
- National annexes for Eurocodes
- British steel code BS 5950 & Spanish steel code EAE 2004
- Aluminum structures: support of EN 1999
- Cellular beams: in cooperation with ArcelorMittal
- Mixed concrete-steel bridges
- Mixed concrete-steel beams & slabs
- Plates with ribs & orthotropic plates
- Compression only wall elements (e.g. bricks)

Interoperability & BIM

(Building Information Modelling)

- Automatic conversion of solids to structural elements
- Free form modeler
- Clash check
- Support of Adobe PDF 3D for interactive documents
- IFC 2x3 import/export certified by IAI
- Revit Structure link
- Tekla Structures link

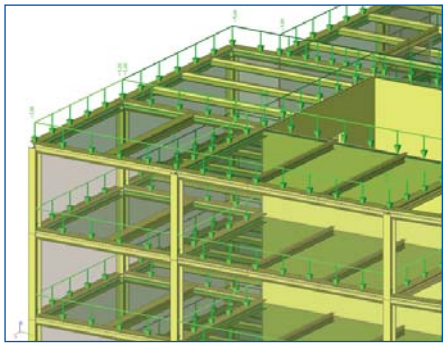
Launch of 3 special editions



Metro Station Strizkov Prague, EXCON a.s.

Concept Edition Scia Engineer

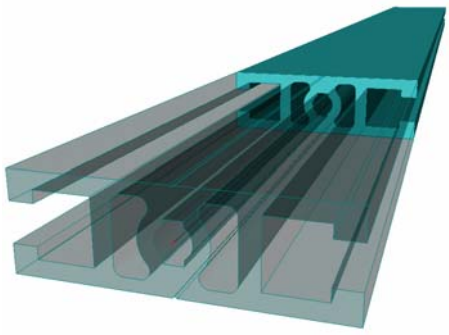
This version of the software attracts engineers starting in modelling structures in steel, concrete or other materials. Flat or curved plates and beam members (straight or curved) constitute the 3D model built using gridlines, construction templates, imported drawings or direct input. In this edition the productivity toolbox with active reporting and drawing gallery shows the full power of the object based design software. The starter edition covers static (linear and geometric nonlinear) analysis with automatic finite element generation. 1D and 2D members are checked against one integrated building code (Euro norm or other) for steel as well as concrete. Unity checks with stresses & buckling effects, optimization of sections (hot-rolled, built-up, thin-walled, cold formed, ...) are present for steel. The wind & snow generator is included. The design of reinforcement (longitudinal & lateral) for beams & columns or plates & walls in concrete is to the latest norm, including crack control and punching. Practical reinforcement (bars, stirrups, meshes) is added to check deflections; it results in impressive 3D views of the entire model. For daily work the Concept Edition of Scia Engineer is the best choice. It is design software whose quality will support engineers in convincing construction owners and authorities.



Load input on loading panels

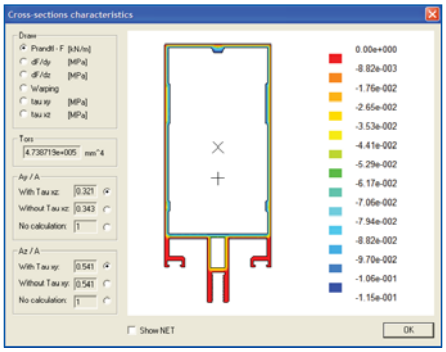
Professional Edition Scia Engineer

It is the version for the experienced design engineer. It adds to the basic edition more modelling facilities: arbitrary cross-sections (shape, materials), real parametric modelling of every input parameter (geometry, loading, ..). This version has a BIM Workgroup toolbox, enabling exchanging models with other software (architectural, structural) by member recognition, Structure2Analysis conversion, and others. Loading generators for live loads, mobile loads on beams & plates are integrated. The Finite Element Analysis covers all nonlinearities (pressure only surfaces, nonlinear springs & gaps), stability analysis and dynamics (frequencies, modes, damping, seismic loads, time dependant loading).
The design part is enhanced with fire resistance checks for steel (incl. resistance or temperature-time checks) and concrete sections. Steel connections with endplates, bolts, stiffeners and welds are designed for a variety of geometries (rigid frame, pinned column-girder, bolted diagonals, beam-beam), and stored in a user expert library. General arrangement drawings and connections detail drawings accompany the impressive 3D visualization in the engineering report. For concrete design the code dependant deformations are calculated. The roundtrip interface to a 3D RC modelling CAD software, and the concrete templates result in an integrated modelling-analysis-design software for any type of structure.



Expert Edition Scia Engineer

In addition to the content of the professional edition, the expert edition will interest the most demanding users. A few excerpts: clash detection of models, advanced mobile loads and train loads, construction stages (deformations of phases being added). The expert gets a world of design power for pre-stressed and post-tensioned concrete with time-dependant analysis (creep, ageing, relaxation, losses), tendon modelling and section checks. Other complex structural design work is enabled for cables (incl. pre-stressing) and membranes (tension only), and for soil-structure interaction (considering stresses in the subsoil). Critical buckling modes take account of nonlinearities (traction only, pressure, non-linear springs).



Design of aluminum sections

NEMETSCHEK Scia

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