

PRODUCT HIGHLIGHTS

Structural Engineering Software Products

ACRONYM SOFTWARE INCORPORATED

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SODA performs least-weight design of standard steel sections. SODA operates under Windows™ 9x, ME, NT, or 2000, provides graphical views of structure and loads, deflected shape, shear and moment diagrams and controlling design code clauses. SODA allows for the design, verification and analysis of a broad range of steel structures (2D & 3D frameworks, up to 2000 members & 1500 nodes & 100 load cases, multiple support & connection conditions, first-order & second-order behavior, etc.). SODA permits design and verification under five different American and Canadian steel design codes. SODA 4 is to be released in the Spring 2003.

ATIR ENGINEERING SOFTWARE

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Product: STRAP Version 10.5 (STRuctural Analysis Program): Fully graphical 3D, static and dynamic, frame and finite element analysis and design program. Developed specifically to meet the demands of the Structural Engineer, STRAP's pre and post analysis options speed and simplify data input and results interpretation. Comprehensive post-processors are available for rolled and light gauge steel, concrete, and composite sections designed to U.S (AISC, AASHTO-steel, ACI, AISI) Canadian, British and European codes. The powerful graphical interface of STRAP enables the user to define even the most complex models with only a few commands.

The light gauge steel designer of STRAP allows structural engineers to analyze and design light-gauge steel structures of any complexity. The user can define any shape of section to be used in the model design.

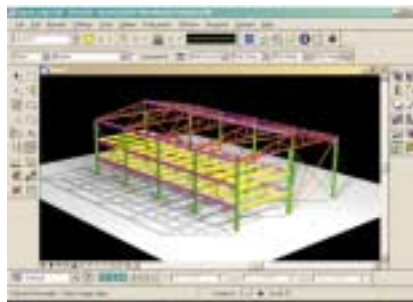
New features of Version 10.5 include: an

option to produce a 'General arrangement drawing' for steel and concrete models; integration to the BEAMD system that details reinforced concrete beams and produces a beam schedule; and addition of the ASCE standard (ASCE7-98) for earthquake design.

Product: STRAP for Bridges: This module is intended for bridge engineers who design bridge structures of all shapes for moving loads. The program creates 3D influence lines for any point and calculates the critical effect of the vehicle loads.

BENTLEY SYSTEMS, INC.

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Bentley's structural for MicroStation TriForma optimizes MicroStation TriForma for structural design and construction documentation. Using parametric and solid modeling tools, structural engineers can create models of buildings, plants and other structures that contain both geometric and attribute information. Rule-based floor plans, sections and elevations, as well as quantity and cost reports, can be extracted from these 'intelligent' models, ensuring coordination of construction documentation and synchronization with the design.

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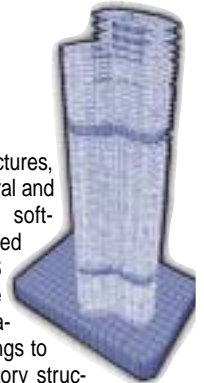
SAM is design software for bridges that integrates analysis with code checking, increasing productivity for bridge design engineers.

The major features are: Analysis: Use line girders and distribution factors, analyze curved decks with grillages, or model complex structures with finite elements. Bridge Loading: Automated full 3-D load pattern generation from influence surfaces with unique benefits you won't find elsewhere. Save days of time every time! Design: The only bridge software to integrate design & code checking with analysis, saves hours on every bridge project. Code check sections, pre-stressed girders and steel composite girders. Training: Training for effective software use, and for effective bridge modeling techniques. A small investment can make a major saving.

COMPUTERS AND STRUCTURES, INC.

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Computers and Structures, Inc., specializes in structural and earthquake engineering software. The products offered by CSI (SAP2000, ETABS and SAFE) cover a wide range of structural applications from high rise buildings to multi-use one- and two-story structures (industrial structures, hospitals) and bridges (suspension and cable stayed bridges, multi-span bridges) to transmission towers. For nearly three decades, CSI software has been used for the analysis and design of major projects in over 100 countries.



C-CONCEPTS, INC.

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ERITower is a state-of-the-art analysis and design tool for the telecommunications industry. Designed specifically for telecommunications towers, this program automates the analysis and design required to meet the TIA/EIA-222-Standards. The program can analyze and design 3 and 4-sided guyed towers, 3 and 4-sided self-supporting towers, round or tapered monopoles and guyed monopoles. Wind profiles may be either the TIA or the ASCE 7 standards. Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated, eliminating the need to consider "nodes and elements."

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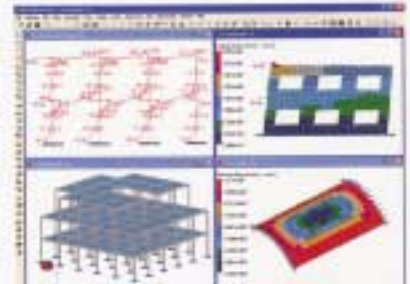
Extensive graphics plots include material take-off, plot plan, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots. Reports are generated in Microsoft Word rich text format.

COMPUTATIONS & GRAPHICS, INC.

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REAL3D-Analysis 2002 is a comprehensive structural analysis program that provides accuracy, reliability and ease of use to structural engineers. Elements include beam and truss, thin and thick plate bending, compatible and incompatible plane stress, shell and solid (brick).

Unique features include 128-bit floating point solver, multiple document interface, compelling graphics based on industry-standard OpenGL, real-time panning, zooming and rotation. Text and graphical reports in HTML format, True 32-bit, fully integrated Windows program written from the ground-up in standardized, object-oriented C++ programming language.



PRODUCT CASE STUDY

Projects:
Doncaster Viaduct

Darrington to Dishforth
bridge

STRUCTURAL ENGINEER:
Bullen Consultants (UK)

SOFTWARE:
SAM Bridge Design Software
(by Bestech)



Bullen Consultants in the UK have been using the SAM integrated bridge design software for the past year on a number of bridge design and rating schemes. These vary from a 15-span, 2030'-long composite steel viaduct that uses a ladder deck construction in Doncaster (UK) to a number of ratings of multi-span, simply supported bridges on the Darrington to Dishforth (UK) project.

The Doncaster project involved an evaluation of the viaduct (on behalf of AMEC Civil Engineering Ltd). The viaduct consists of a two-girder, steel-composite structure that comprises 15 continuous spans, carries two 24' roadways with 4' sidewalks and a 6' central reserve, and is

supported on twin reinforced-concrete piers. All of the pier structures are supported on piled foundations.

The single continuous deck has a steel-composite construction with two main girders of 8' continuous depth, and cross girders spanning between at 12' centers. Formwork spanned longitudinally between the cross girders to support the cast-in-place concrete deck construction. Parapet units and copings were formed in concrete and followed the curve of the deck.

Spans varied with an average span length of 145'. The maximum span was 157' and the minimum was 78'. The viaduct crossed numerous obstacles including a river and a railway.

The bridge superstructure was checked using a SAM grillage to model the deck. Due to the horizontal layout of the viaduct, the structure was split into two separate models, with two of the spans from each model overlapping in the middle. This first grillage had a horizontal alignment on a radius of approximately 1310', with the second grillage modeling the straight section. This allowed SAM's 3D Live Load Optimizer to be used to rate the viaduct.

SAM's 3D Live Load Optimizer was used to check for worst-case loading throughout the differing span lengths. The structure was checked to full-standard loading along with two permit vehicles totaling up to 225' in length. Alignment definitions were used to ensure that the permit vehicles followed the road profile around the curved model.

Finite element models of the cantilevers to the parapets were also used to check the cantilevers for local and global effects.

As part of the Darrington to Dishforth project, the Highways Agency required existing structures to be rated to meet current loading

requirements. Ten structures on the scheme were rated using SAM. The bridges were modeled using the SAM graphical user interface for both model geometry layout and definition of the beams.

The bridge layout was defined using graphical tools for creating the design lines, carriage-ways, span-end lines and support conditions, from which the grillage meshes were produced. The previously defined beams were graphically associated with the grillage model, and the section properties used for analysis were calculated automatically.

Analysis of each bridge deck was carried out to determine the critical bending and shear diagrams for the members in the grillage model using the optimal load-placing tools in SAM. The results of the analysis were transferred to the integrated beam module where the beam sections were checked in accordance with the rating code. This resulted in a substantial saving in time by avoiding data transfer between programs.

"A typical, simply supported 40'-span bridge that would have normally taken four or five days to analyze and obtain design results can now be done in half a day," said Paul Musgrave, Principal Engineer at Bullen Consultants, Durham, UK.



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Structural Engineering Software Products

COMPUTER AIDED STRUCTURAL TECHNOLOGY

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WinSTRUDL is a finite element program that analyzes 2D and 3D truss, frame, and plate structures under static and dynamic loads. It designs concrete, steel beam, column, and footing members according to ACI and AISC codes. A comprehensive graphic model generator enables you to draw, point, and click to define structure and loading with ease. A continuous beam program is also included for quick calculations. Apart from graphical input, you can also operate in the traditional STRUDL format and submit data as a batch run. WinSTRUDL's capability is unlimited and is known to solve more than 20,000 joints and 10,000+ load cases.

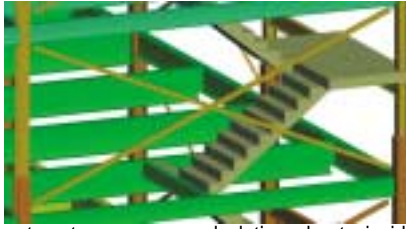
18-year-old WinSTRUDL is used by more than 2,000 consultants in 30+ countries. It is on sale for less than \$600. Capability, options, ease-of-use, price and performance makes WinSTRUDL the best value on the market.

CSC

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Innovative software for structural engineers. 3D+ provides totally integrated modeling, drawing, analysis and design. Use AutoCAD to create a complete structural model for analysis and design. Engineering design drawings generated automatically and updated to reflect changes. Saves time, reduces errors and improves coordination of design information.

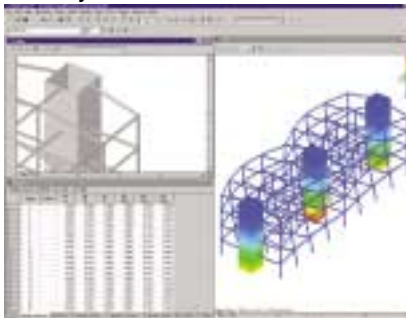
S-FRAME for powerful 2D/3D analysis integrated with S-STEEL for comprehensive steel design. Using TEDDS it's simple to create and



automate your own calculation sheets inside Microsoft Word-with no programming knowledge. Produce calculations that look like traditional engineering documents and can be revised at the click of a button. Unlike a spreadsheet, TEDDS includes a library of structural calculations and data e.g. ASD, LRFD, ASCE7-98, IBC2000. Fastrak Connect provides moment connection design. Products can be used independently or together for an integrated solution.

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Multiframe is a three dimensional software system for linear or non-linear static or dynamic analysis of framed structures. Featuring fast, interactive graphics, Multiframe provides a completely graphical approach to structural modeling, analysis and detailed design.

Smooth direct data and graphics exchange with Excel, Visio, MathCAD, AutoCAD and others integrates Multiframe with your existing design tools. CAD tools such as automatic generation, duplication and rotation of structural elements simplify the process of constructing a frame model. The program includes clipping, masking and transparency functions that allow the user to interactively slice through the structure to view and highlight areas of interest. Searching and sorting functions also make it easy to find key design values and produce required reports.

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LGBEAMER-Software for the design of cold-formed steel framing (cee's, zee's and channels). Models single or multi-span members, including cantilevers, with flexural and axial loads. Analyze single, boxed, back-to-back or 'built-up' members using the AISI "Specification for the Design of Cold-Formed Steel Structural Members.", including the 1999 Supplement. Input section geometry in drop-down style from industry standard and manufacturer databases, or build custom sections. Complete flexibility of bracing intervals, including sheathing braced design where allowed by the Specification. Metric and English Units. Only \$375.

D-Coder: Tabulates wind pressures in accordance with IBC 2000 (ASCE 7-98) and the 1997 UBC for both MWFRS and Elements and Components. Determines seismic coefficients for base shear, and elements and components in accordance with 2000 IBC and 1997 UBC. Also tabulates dead, floor live and roof live/snow loads as well as deflection limits.

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Structural Expert Series (SES) by Digital Canal: Digital Canal provides a software suite encompassing your entire project needs including analysis, design and detailing. Our modules are easy to learn and use. Their power and flexibility will surprise you! The cornerstone of the SES series is our Frame Analysis & Design product, which runs stand-alone or integrated within AutoCAD. This powerful, flexible and easy to use analysis and steel design program utilizes CAD to model, analyze, and design structures, giving it unequalled graphics capabilities and providing a swift and significant return on investment.

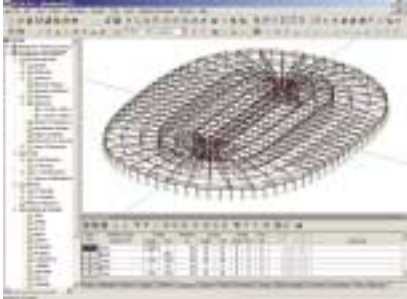
Also available inside AutoCAD or AutoCAD LT is StrucPro. Inexpensive and efficient are the keys to this 2D detailing and drafting program. Additional productivity enhancing products include: Steel Design, Spread Footing Design, Wind Analysis, Timber Design, Multiple Load Footing Design, Retaining and Masonry Wall Design. Free evaluation CD and bundle pricing available!

PRODUCT HIGHLIGHTS

Structural Engineering Software Products

DLUBAL ENGINEERING SOFTWARE

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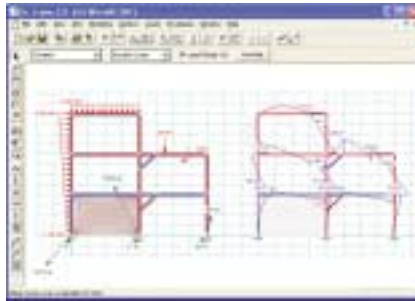


RSTAB is a 3D structural analysis software package for the design of steel, timber and concrete structures. RSTAB is outstanding in its graphic user interface and allows easy modeling and handling of complex structures. RSTAB includes free editable factored load combinations, linear and non-linear analysis methods, stress analysis including section properties and warping for any thin-walled sections, moving loads, dynamic analysis including (UBC and IBC), buckling analysis and more. Design modules are available for steel, timber and concrete structures. RSTAB can be controlled externally

by a programmable COM interface (e.g. Visual Basic). Import and export to ProSteel3D and XSTEEL is included. RSTAB allows visual modeling of structures by using methods like Drag & Drop, navigation trees and spreadsheets. The analysis results are presented in a customizable report including images and user graphics. More information and demo versions are available for download at www.dlubal.com.

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Dr. Software, LLC specializes in the development of real-time structural modeling software for engineering and architectural professionals and students. Our products feature unique

direct manipulation modeling capabilities embedded within rich environments that allow users to concentrate on behavior rather than details of the user interface. As a result, modeling can become an exploratory activity rather than a bookkeeping task. There is no distinct pre- or post-processing—everything happens in real time. Our structural products include:

Dr. Beam Pro: a direct manipulation environment for beam modeling and Dr. Frame: a direct manipulation environment for modeling truss and frame structures. Free demo versions can be downloaded from the Dr. Software web site. Educational pricing available.

GT STRUDL

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casec@ce.gatech.edu

For nearly three decades, GTSTRUDL has been regarded as the most reliable, accurate, and powerful structural engineering software solutions available. GTSTRUDL is a database driven system with integrated features for linear and nonlinear, static and dynamic frame, and finite element analysis, steel and concrete frame design, and offshore jacket analysis and design. GTSTRUDL covers applications from high-rise buildings to industrial structures, long-span bridges to transmission towers, and sports

PRODUCT CASE STUDY

Project:
Bard College
Performing Arts
Center, Annandale-on-
Hudson, NY

STRUCTURAL ENGINEER:
DeSimone Consulting
Engineers, P.L.L.C.

SOFTWARE:
RISA 3-D

Bard College's new \$24-million performing arts center will house opera, dance, and orchestral productions and the campus' theatrical teaching facilities. The exterior of the buildings will showcase Frank Gehry's metal "skin" design. Computer-generated curves define a form to which thin stainless steel sheathing follows. Behind the "skin" will be custom-built steel members placed at 10' increments. The shape of each piece has been defined by the architect in a 3-D modeling packaged called CATIA, and

will be translated and imported into advanced plate-cutting machines.

RISA-3D was an integral part in the analysis and design requirements of the project. It was used to design the typical back-of-the-house steel structure, and the curved steel members and bracing system that support the metal exterior enclosures.

"We could spend a large sum of money to purchase the design package that CATIA offers, and then have no one who could use it," said Stephen V. DeSimone, P.E., executive vice president of DeSimone Consulting Engineers, P.L.L.C. of New York City, NY. "Instead we chose to invest in a more economical design package that everyone in our office can operate - RISA-3D. The trick is how to convert the geometry to RISA-3D."

DeSimone Consulting Engineers solved this problem by developing a propri-

etary software program that translates spatial points between the two programs. "We create hundreds of geometry defining points that are then easily imported into RISA-3D," said DeSimone project manager Chris Cerino. "With that starting point, the structure is easily defined using RISA-3D's graphical interface."

Cerino says that the project illustrates the versatility of RISA-3D. "It easily handled everything from concrete slabs to curved steel beams," he said.



PRODUCT HIGHLIGHTS

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stadiums to nuclear containment structures. No longer do engineering firms need multiple programs for multiple applications. GTSTRUDL can efficiently handle projects with the assurance of accuracy and reliability that engineers require. Evaluation software available upon request.

GT STRUDL Structural Design & Analysis, Quality Assured, Software System has the following features: graphical creation of frame and finite element models, Model Wizard, 80 pre-defined tables of steel shapes, user defined tables of steel shapes, data sheets to define/view/edit and sort information, and a graphical results display that includes: static and animated deformations and mode shapes, steel code check results, force/moment diagrams, stress contours, envelopes, steel design for various design codes, steel design wizard, automatic analysis, design & member smoothing, automatic self-weight for active member & joints, automatic effective length factor calculations, deflection check & design, material quantities report design based on geometrical constraints, concrete design for US/British codes, and linear dynamic analysis that includes response spectrum, transient, steady state, and harmonic loadings, elastic buckling analysis, nonlinear static and dynamic analysis, including: nonlinear springs, geometric nonlinearity for members, nonlinear cable elements, plastic hinges, and push-over analysis.

INTEGRATED ENGINEERING SOFTWARE, INC.

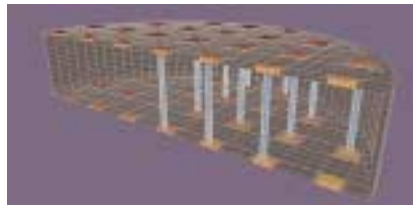
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VisualAnalysis 5.0: Single License Price: \$395 - \$1835. VisualAnalysis 5.0 is a very simple tool for doing everyday structural analysis and design. The new Advanced level product provides time-history analysis, cable elements, semi-rigid (PR) connections and incredibly fast analysis. Just sketch the model, define properties and apply loads graphically. Many ways to build models: text-file, DXF import, sketch, parametric generation, spreadsheet, and copy & paste! Create professional reports, and full-color diagrams.

VisualAnalysis has the features you need, a

Microsoft Office style menu, and integrated context sensitive help to make it easy to use. Analyze just about any structure and design members, frames and trusses in steel, wood, concrete, and cold-formed steel. Also provides tools for base plate and footing design, load generation, smart preliminary member sizing and more. A free-trial version is available.

ShapeBuilder 3.0: Single License Price: \$395. ShapeBuilder 3 provides structural and geometric properties for built-up and custom sections. It calculates area, moment of inertia, section modulus, and many more properties. ShapeBuilder 3 leverages an extensive shape library and provides easy ways to create many common shapes-like reinforced concrete or composite steel sections.



ShapeBuilder goes beyond most simple section calculators by providing advanced engineering analysis of members: stress contours, reinforced concrete interaction diagrams, and torsional analysis. It also offers a CAD like interface for graphical creation and manipulation of shapes. Shapes can be exported to almost any program including VisualAnalysis and AnalysisGroup.

AnalysisGroup 2.5: Single License Price: \$495. AnalysisGroup analyzes six typical structural problems: circular tanks, shear wall systems, beams on elastic foundations, rectangular mat footings, plate bending, and continuous beams. You provide the geometry, boundary conditions and loads, while the software does all the hard work of making FE models. You get streamlined data entry, interactive graphics, and presentation quality reports. This program also works inside MathCAD and MS Excel!

INTEGRATED STRUCTURAL SOFTWARE

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ROBOT Millennium is the state-of-the-art finite element structural engineering software. It is a recognized system in the analysis and design of various structures including buildings, bridges, industrial facilities, civil and mechanical engineering. The software performs static/dynamic analysis of 2D/3D projects using beams, plates, shells and solids elements.

Engineers worldwide have chosen ROBOT for its timesaving competitive advantages. Among them, flexible and powerful modeling,

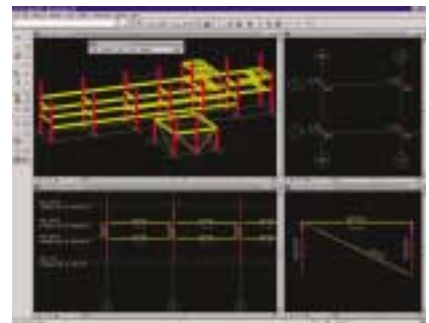


integrated steel and concrete design, automatic meshing of plates and shells, ability to use volumetric finite elements, advanced analysis types and comprehensive output reports, allow for tremendous productivity gains.

Analysis includes harmonic, seismic and pushover, linear/non-linear time-history, non-linear with true cables, P-Delta and large displacements, beam material non linearity and plastic hinges. ROBOT is an effective tool to compare alternate designs in steel and reinforced concrete following the latest American and International codes. ROBOT is also interfaced with many CAD/CAE software using DWG and other formats.

INTERGRAPH PROCESS, POWER & OFFSHORE

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FrameWorks Plus 7.2 (US\$4200) is integrated structural software that produces intelligent models and comprehensive fabrication and detailing data packages; engineers use model data for physical members, accurate material takeoffs, and realistic project reviews in 3D. Supports 3D modeling and drawing, fabrication and detailing of beams, columns, braces, cutouts, sleeves, and concrete slabs and walls as well as offshore marine structures including rig jackets and floating platforms. SDNF and CIMsteel compliant, FrameWorks Plus runs on Microsoft Windows NT. Provides certified interfaces to GT-STRUDL, LARSA, STAAD-Pro, SAP2000, RAM Steel, X-steel, SDS/2, StruCAD, CDS. Features a comprehensive library of AISC and BCSA tables and standard section data from 15 countries.

PRODUCT HIGHLIGHTS

Structural Engineering Software Products

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Space Gass is a general purpose structural analysis and design program for 2D and 3D frames, trusses, grillages, beams, etc. It features a graphical user interface that allows you to input, edit and monitor your entire structural model graphically. Of course, input via datasheets, text files and a structure wizard are also available.

Space Gass employs a state-of-the-art wavefront matrix solver enabling lightning fast solutions. Solvers for linear and non-linear static analysis, dynamic frequency analysis, dynamic response spectrum analysis and buckling analysis are available. It even includes a specialist cable element that models the catenary action of cable members in guyed masts, cable nets and the like. Most international design codes are supported including AISC-LRFD and AISC-ASD

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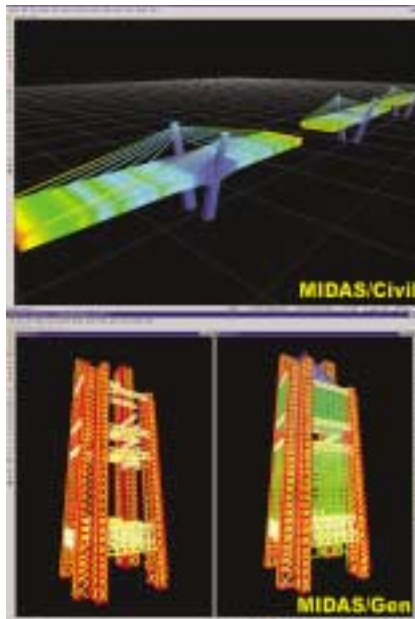


Can't find estimating software that suits your needs? We couldn't either. That's why we developed MEI Steel Estimating Software. Designed by a steel estimator for steel estimators. MEI Steel Estimating Software is a powerful, yet easy to use, tool for estimating the costs associated with steel fabrication projects regardless of size. The software leads the estimator through the steps necessary to produce a complete and accurate estimate while targeting desirable ratios, profit margins, etc. There is

even an automated audit function to identify potential omissions, inconsistencies or errors that may be present in the estimate. Once the estimate has been completed, the software automatically generates the project's scope of work. Visit our website to view the guided tour of the software's capabilities and try a fully-functional trial version free for 15 days.

MIDASOFT INC

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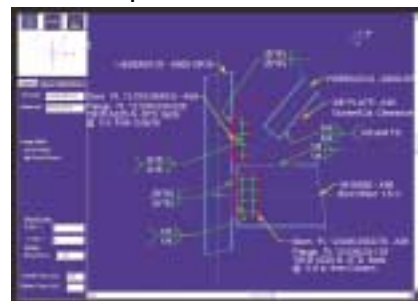
MIDAS Programs for Integrated Modeling, Analysis & Design of Civil/Bridge & Building Structures will change the way of engineering practice. Save your time for making changes and developing design alternatives. Experience an increase in productivity and accuracy. Produce presentation-quality graphical results and animations.

MIDAS/Civil (Civil-Bridge structures) offers: AASHTO LRFD Live Load Analysis & Reinforced Concrete Design, stage post-tensioning for box girder and general bridges, bridge construction sequence analysis, skewed slab & frame bridge + culvert wizards, suspension & cable-stayed bridge analyses, dynamic boundary nonlinear analysis, heat of hydration analysis, auto mesh generation module, and section property calculator.

MIDAS/Gen (Building structures) offers: ACI, AISC, AISI, CSA, Euro, BS & SSRC, lateral design load generation, building construction sequence analysis, building model generation wizard, P-Delta & large displacement cable analysis, dynamic analysis, base isolators & dampers, pushover analysis, and stage post-tensioning.

OMNITECH ASSOCIATES

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www.desconplus.com



DesconWin and Descon Brace programs are used to design connections of steel structures. ASD and LRFD versions of both programs are available. DesconWin designs shear and moment connections. Beam-to-column flange, beam-to-column web, and beam-to-girder connections as well as beam and column splices are designed using DesconWin. Column splice alternatives include direct welding, butt plate, welded/bolted flange plates and welded/bolted web plates. Column splice is designed for combined compression, moment, tension, and shear. Design of column web stiffeners and doubler plates are included in DesconWin.

Descon Brace designs vertical bracing connections including connections of Knee and K-Braces. Descon Brace has been expanded to include brace connections to column base and V-brace connections. Gusset plate to column connection options include direct welding, bolted/welded single plate, and bolted/welded clip angles. Connections to HSS columns have been implemented in recently released Descon Brace 3.1. Both programs generate detailed calculation reports, drawings and DXF files.

OPTI-MATE, INC.

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optimate@enter.net
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DESCUS performs analysis, design, code check and ratings for curved (and straight) steel girder bridges in English or Metric units. Program complies with latest AASHTO Curved Girder Guide Specifications for WSD and LFD. No LRFD specification exists for curved girders. However, LRFD loading cases may be run. Features included: "I" and box girders, rolled shapes, shear connectors, stiffeners and composite action. A new feature includes a Microstation input data processor. Free 15-day trial.

MERLIN DASH performs analysis, optimum design, rating and code check for WSD, LFD

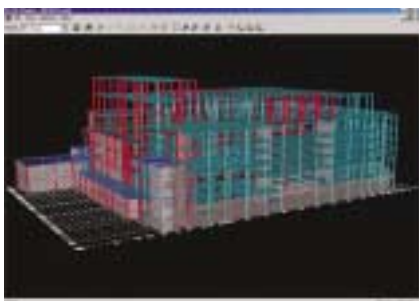
PRODUCT HIGHLIGHTS

Structural Engineering Software Products

and new LRFD. All live load functions calculated using live load generator. Multiples of HS and user-defined vehicles may be run concurrently. Inventory, Operating and Posting Ratings are automatically determined. Includes "I" girders, rolled shapes, variable depth web, shear connectors, stiffeners, auto bolted splice design, composite action, slab pour sequence analysis, integral abutments and settlements. Free 15-day trial.

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The RAM Structural System – Includes RAM Steel, RAM Concrete, RAM Frame and RAM Foundation, providing complete integration of the analysis, design and drafting for buildings and their foundations. Also available are Special Seismic Provision Checks for Steel and a Drift Control Module based on energy theories. Version 8.0 has just been released, containing many new modeling, productivity and design features.

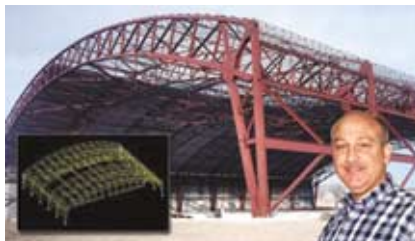
RAM Advanse – RAM Advanse is a full-featured 3D finite element analysis and design tool, suitable for almost any type of structure, with design capabilities for wood, steel, cold-formed steel and concrete, and includes integrated footing design. RAM Connection – Steel connection design software, running either in stand-alone mode or completely integrated with RAM Advanse or the RAM Structural System.

RAM Perform – RAM Perform 2D and 3D are advanced software products for non-linear and pushover analysis and design. Written by Dr. Graham Powell, Professor Emeritus of the University of California at Berkeley and author of the industry standard DRAIN-2Dx, RAM Perform includes the most recent advances in push-over analysis and design.

RAM Design Productivity Tools – Includes RAM SBeam for the analysis and design of steel composite and non-composite beams, RAM SColumn for the design of steel wide-flange, tube, and pipe columns, and RAM BasePlate, for the design of steel base plates and anchors.

RESEARCH ENGINEERS INTERNATIONAL

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STAAD.Pro is the choice of 46 out of 50 leading Structural Engineering firms, 46 out of 50 state DOTs and 7 out of the top 10 engineering universities. STAAD.Pro features a state-of-the-art user interface, visualization tools, powerful analysis and design engines with advanced finite element and dynamic analysis capabilities and OpenSTAAD (the first open architecture structural software allowing users to customize and integrate it with any application). From model generation, analysis and design to visualization and result verification, STAAD.Pro is the professional's choice for steel, concrete, timber, aluminum and cold-formed steel structures.

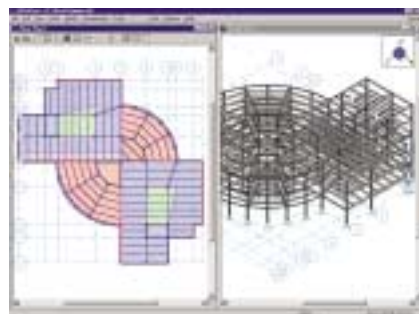
STAAD.Pro is designed for engineers, by engineers who understand the process of modeling, analyzing and designing a structure. Our 20 years of experience, along with input from practicing engineers, has helped make STAAD.Pro the easiest-to-use Structural Analysis and Design software on the market today. STAAD.Pro is ISO 9001 and NRC 10 CFR Part 50 and 21 certified.

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RISAFloor designs floors and integrates with RISA-3D Director, providing a complete solution for building design. RISAFloor models floor systems, manages loads, optimizes members, and produces drawings. Seamless integration with RISA-3D Director lets you design both the gravity and lateral system from one model. Lateral systems, including loads, are automatically created and managed. RISAFloor features include additive, two-way and tapered loads, continuous beams, automatic self-weight, steel, composite and timber design including manufactured products, relative and absolute deflections.

RISA-3D is a versatile, general purpose analysis and design package that designs



industrial structures, buildings, bridges, towers, tanks etc. RISA-3D features include physical members, hot rolled and cold formed steel design, wood design, torsion per AISC Design Guide 9, tapered member design, area loads with 1-way or 2-way attribution, plate/shells, dynamics and response spectra analysis, rigid diaphragms and moving loads with AASHTO databases. RISASection, RISABase and RISAFoot provide simple or biaxial analysis of custom sections, footings or base plates. All RISA products provide high quality graphics and custom reporting.

SAFI QUALITY SOFTWARE INC.

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SAFI 3D Structural Office Software is an integrated structural analysis, verification, evaluation and design program for buildings, bridges, bridges, transmission towers, electric sub-stations, tubular transmissions structures and more.

SAFI is powered by state-of-the-art analysis, evaluation and design techniques and equipped with a user interface. For analysis SAFI includes linear and non-linear capabilities, seismic, modal, dynamic analysis and finite elements. Productive features such as tension or compression members and springs, surface area loads with automatic redistribution, physical member concept for analysis and design, with model generation using parametric technology, and model editing using graphical selection techniques.

The Steel Calculator and Concrete and Footing calculators allow you to verify, design, and optimize steel beams, columns, and critical concrete sections and footings in seconds.

PRODUCT HIGHLIGHTS

Structural Engineering Software Products

For Steel SAFI supports the LRFD, ASD, Canadian codes CAN CSA -S16.1 and CSA S6-2000, and the European EC-3 code using standard AISC, CISC or European sections or parametric sections shapes. Design optimization and automatic section selection features make economic structures a reality.

Data exchange supports AutoCAD interface by way of DXF file, Structural Modeler, SDNF (Steel Detailing Neutral File), KISS and also interfaces to FrameWorks, X-Steel and SDS 2.

Results can be visualized either graphically or numerically. Reports are available in several formats including SAFI Crystal reports, Excel, Access and ASCII text files. All graphics can be printed or copied to the clipboard for use in external programs. The end user can purchase the whole SAFI Structural Office version or the application of choice.

STAT-EASE, INC.

**2021 E. Hennepin Ave., Suite 480
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info@statease.com
www.statease.com**

Stat-Ease, Inc. provides statistical software, training and consulting services. Its mission is to put the power of statistics into the hands of scientists, engineers and quality professionals. Stat-Ease produces two top-rated PC packages for design of experiments (DOE):

Design-Ease—helps make breakthrough discoveries. Wizards make it easy to set up two-level factorial, general factorial, fractional factorial and Plackett-Burman designs. The program also provides simple one-way designs. A point and shoot interface with progressive toolbar icons leads the user to statistically valid predictive equations. Graphics simplify (continued) analysis at every step.

Design-Expert—includes all of the features of Design-Ease plus powerful DOEs for process optimization including three-level factorials, central composite, Box-Behnken and d-optimal designs. The program also offers mixture experiments including simplex, extreme vertices and d-optimal designs; combined mixture/process designs plus screening for up to 24 components. Rotatable 3D response surface maps (RSM) lead experimenters to the peak of performance. Design-Expert then uses sophisticated multiple response optimization routines to find the "sweet spot" that meets all specifications. You'll find 30-day free trials of both software packages at www.statease.com.

STEEL JOIST INSTITUTE

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Myrtle Beach, SC 29577-6760
Ph: 843.626.1995
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stljoist@infi.net**



The Steel Joist Institute offers a computer program to assist the qualified professional engineer in determining probable vibration characteristics of floor systems using open web steel joists. This program is designed for use in conjunction with The Steel Joist Institute's Technical Digest #5 "Vibration of Steel Joist-Concrete Slab Floors," a copy of which is included with the computer program. A comprehensive 58-page user's manual is included.

The cost for the program is \$125.00 and includes postage and handling. A copy of Technical Digest #5, which is included with the computer program, can be purchased separately for \$15.00.

STEEL STRUCTURES TECHNOLOGY CENTER, INC.

**24110 Meadowbrook Rd, Ste 104
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Ph: 248.893.0132
Fax: 248.893.0134
rshaw@steelstructures.com
www.wps-designer.com**

WPS Designer, a new software program for developing and evaluating welding procedures, is now available from the Steel Structures Technology Center. The program creates and evaluates Welding Procedure Specifications in accordance with the requirements of the AWS D1.1:2002, Structural Welding Code-Steel.

WPS Designer facilitates the technical analysis, design and approval of Welding Procedure Specifications (WPS's) and Procedure Qualification Records (PQR's) using AWS D1.1:2002, with pre-qualified groove-welded joint configurations, base-metal data and filler-metal information, built-in preheat tables and PWHT requirements, complete welding-cost estimating functions, and storage/retrieval of WPS's and PQR's, all with fully interactive Windows interfaces.

Unlike many other welding software programs that require the user to research and input welding parameters into a database format, WPS Designer provides suggested operat-

ing parameters and performs calculations enabling the user to verify and adjust the WPS's as needed.

STRUCALC 5.0

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StruCalc 5.0 for Windows is one of the most intuitive programs available for the design and analysis of light commercial and residential structures. The design package includes 10 modules that can be used to design multi-span beams, joists, rafters, hip beams, laterally loaded columns, rectangular footings, and continuous footings. The built-in material database includes values for solid sawn lumber, glu-lams, I-joists, structural composite lumber, tube steel and wide flange steel. It supports all of the major U.S. building codes including the 2000 IBC. Only \$395.00 plus s/h.

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ROBOT Finite Analysis and Design Software for Structural Engineering is built exclusively on Windows technology and is compatible with Windows 95/98/NT/2000.

Key Features of Robot: Flexible and quick modeling, with library of structures and CAD files import-export; 2D/3D frame and truss analysis; Surface Finite Elements such as plates and shells with automatic meshing; 3D Solid elements; a broad range of analysis: linear, non-linear, static, dynamic, modal and spectral; advanced options such as true Cables, P-delta, buckling, seismic, time-history, and push-over; design checks and member optimization for steel structures according to ASD, LRFD, CSA16.1; complete calculation of rein-

PRODUCT HIGHLIGHTS

Structural Engineering Software Products

forcement for concrete elements according to ACI 318; other international codes for steel, concrete and timber design; section builder for composite and custom shapes with detailed stress analysis; material bill of quantities; generation of moving loads as per ASHTO; snow and wind load generation on towers as per EIH standard; advanced analysis capabilities with fast algorithms; powerful and immediate post-processing of results; creation of fully customized and interactive reports in any Windows processor; new COM technology to link ROBOT to your in house programs and applications

STRUCTURAL ENGINEERS, INC.

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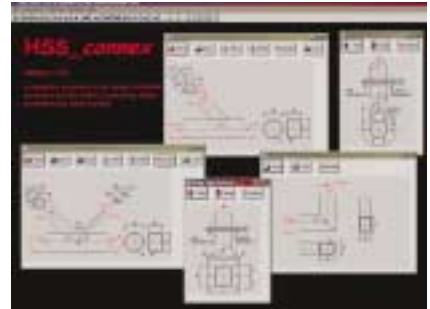
FloorVibe is Windows-based software for the analysis of floors for annoying vibrations. FloorVibe uses the criteria in the AISC Design Guide 11 Floor Vibrations due to Human Activity. Floors can be evaluated for walking in

offices, residences, churches, and shopping malls; rhythmic activities like aerobics and lively dancing; and the effects of motion on sensitive equipment. FloorVibe has databases for hot-rolled sections, Smart beams, and K-series joists, and calculation procedures for LH- and DLH- series joists, joist-girders, and built-up sections. FloorVibe produces a complete design report with all calculations for ease in checking. FloorVibe also provides on line expert advice. Technical assistance is also available by phone, fax, or e-mail.

TUBE GROUP

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HSS_connex is a program dedicated to designing Hollow Structural Section (HSS) truss connections and is a complement to existing written guides such as the AISC HSS Connections Manual. The scope extends to welded T, Y, K (gap and overlap) and KT truss



connections, including webs with flattened ends, multiplanar connections, double chord connections, bolted flange-plate connections and many more special cases. Full databases of cold-formed, round, square and rectangular HSS members are included for both the ASTM A500 specification (with AISC-specified section properties) and the CSA specification, for any tube grade produced. The program works on all Windows platforms (Win95 and up), operates in either imperial or metric units, and Version 1.04 (2002) is now available.