



Software, Services & Training

QUALITY LIGHT STEEL FRAMING MEMBERS AND CONNECTIONS

Software, Services & Training

Cold-Formed Steel Design Services & Training



Services Light Steel Framing (LSF) Design Assist Service
Architectural Specification Review Service
LSF Shop Drawing Engineer Referrals
Contractor Lead Service
Clip Take-Off Service



Training Practical Training for the Architects, Engineers, & Contractors
Intro to Light Steel Framing Design
Mid-Rise Load Bearing Steel Stud Framing Design
Wind-Bearing Steel Stud Framing Design
Diagonal Strap Bracing Design
Cold-Formed Steel Construction Techniques
Intro to BIM in Light Steel Framing
BIM / Revit Basics
SteelSmart® Framer – Wall Framing, Shear Wall Framing & Floor Framing

Cold formed Steel Design Software



SteelSmart® System Software



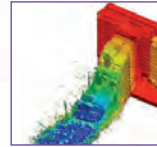
SteelSmart® Framer Plugin for Revit

Non-linear Structural Analysis Software



Extreme Loading® for Structures Software

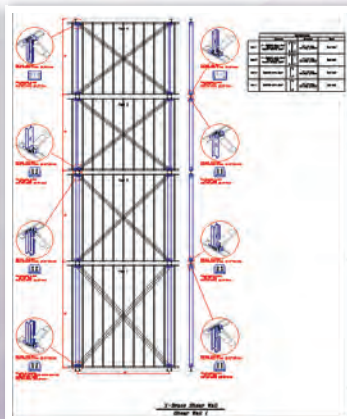
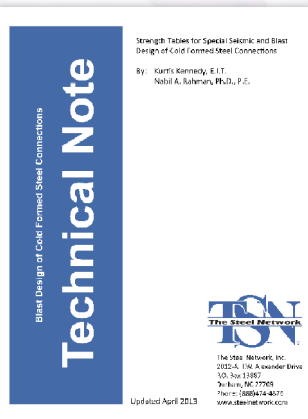
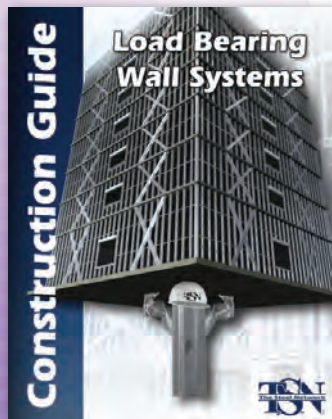
ASI Structural Engineering Support Services



Services Blast Design Configurations
Progressive Collapse Compliance
Wind-Seismic-Blast Requirements
Cost Saving Numerical Analysis
Demolition Planning
Specialized Structural Expertise

Leveraging the TSN Advantage

The Steel Network, Inc. provides solutions for all standard light steel framing applications. It is TSN's goal to provide the best value, while ensuring safety and efficiency. Toward this end, TSN provides a host of resources and opportunities to support the successful design, optimization, and implementation of your next light gauge (cold-formed) steel project. Contact us or visit our website to find out how TSN can find savings on your next project.



Technical Resources Available:

- Design Assist/Product Optimization
- Technical Support
- Custom Connection Testing
- CAD Details
- BIM Objects
- Blast & Seismic Solutions
- Lab Test Reports
- ICC-ES Evaluation Reports
- Technical Notes
- LEED® Data Sheets
- Material Safety Data Sheets (MSDS)
- Submittals & Approvals
- Component Design for Blast

For all of our technical information, visit www.steelnetwork.com/Site/TechnicalData

Cold-Formed Steel Design

Complimentary Services

Light Steel Framing Design Assist Service:

TSN provides a Design Assist Service that will evaluate all aspects of your light steel framing project for optimization. Think of the Design Assist Service as one step before the creation of shop drawings. The purpose is to show you how to complete your metal stud framing job faster, lighter, and more efficiently. We can do anything from optimizing only the openings and clip connections, to redesigning the entire load bearing mid-rise steel frame system. Each design assist is tailored to your needs. Maybe you have a job that has our products specified, but you aren't quite certain how our metal studs or steel clips will fit with various components on the plans. The Design Assist is a perfect tool to provide clarity, and clearly explain how the entire steel structure will work together.

TSN's experience includes thousands of projects nationwide. It is our goal to facilitate the most cost-effective approach to using CFS on your project.

Benefits of TSN's Design Assist Service:

- Reduce cost by optimizing your materials
- Bring clarity and transparency when it comes to the problem sections of your project
- Win more jobs by providing a more accurate, thorough, and realistic bid
- Save labor hours by minimizing materials and constructing the building more efficiently
- Accelerate construction schedules by optimizing headers, studs, & more

Why Use TSN for your light steel framing products?

- Products are load tested & rated
- Connectors are manufactured from 50ksi, mill-certified steel
- Connectors include guide holes for fast and accurate installation
- TSN is the only manufacturer with an ISO:9001 Certification for Quality Management
- Only Manufacturer with an inhouse CFS Design & BIM Framing Software
- All of TSN's Products are Made in the USA!



Architectural Specification Review Service:

The Steel Network, with its sister company, Applied Science International, LLC (ASI), provides a five-part specification guide that is current with the latest International Building Code (IBC), including product data references for all TSN products as well as structural engineering best practices.

Specifications can quickly become out-of-date and can cause issues in the submittal process and in choosing a qualified manufacturer. Our specification specialists also offer a complimentary specification review in which they will provide you with recommended language to bring your specification templates up to date with current industry standards and the highest quality light steel framing products on the market.



Complimentary Specification Reviews Provided For:

- 024120 – Division 2 Section: Substantial & Special Structures Demolition
- 054000 – Division 5 Section: Cold-Formed Metal Framing
- 072000 – Division 7 Section: Thermal Protection
- 092216 – Division 9 Section: Non-Structural Metal Framing

TSN is dedicated to develop, produce, communicate, and deliver the finest products in the light steel framing industry. Implementing TSN's suggested language can add value and reduce liability to your future projects by reducing installation costs, reducing installation schedule, and ensuring the highest quality product is installed.

Light Steel Framing Shop Drawing Engineer Referrals:

The Steel Network supports independent Shop Drawing Engineers that provide the highest quality light steel framing design services using our SteelSmart System design software & SteelSmart Framer BIM framing tool. We are happy connect you to an experienced Shop Drawer.

Contractor Lead Service:

TSN strives to be more than just a manufacturer of light steel frame members and connectors. We truly desire to be a network and resource to our partners. One of the ways we strive to be a resource is by making our partners aware of jobs in their market that might be in line with the type of work they do.

We've got our finger on the pulse of the Light Steel Framing Industry and we'd love to share our knowledge. Sign up for our leads list, and we'll send over any applicable work that we come across in your area.



Clip Take-Off Service:

At The Steel Network, we are obsessed with adding value to our customers. One of the things we kept hearing was that customers would like to see free clip takeoffs.

Because of that feedback, we have begun offering free clip takeoffs in conjunction with our Design Assist Service for light steel framing projects that you've won. Building steel buildings can be complicated, we understand, if you have a steel framing job, and you would like some help with the clip count, we will be glad to be of assistance.

Cold-Formed Steel Design

Training

Practical Training for the Architects, Engineers, & Contractors

TSN offers a number of unique learning opportunities for structural engineers, architects, and contractors with weekly webinars, regional seminars, software specific training and customized training taught by experienced structural engineers and leading scientists. Whether you are an individual or an entire team, TSN delivers a solid foundation in real-world problem-solving using the advanced design and engineering tools needed in today's construction workplace. Our commitment to continuing education and training is at the forefront of what we do. With every course we offer a certificate of completion that can be used to self-report PDH, CE, CEU, and other continuing education requirements.



Introduction to Light Steel Framing Design

New to Light Steel Framing (LSF)? LSF, also known as Cold Formed Steel (CFS) is steadily gaining ground as a preferred method in commercial construction for exterior curtain wall framing (on structural steel/reinforced concrete structures like office buildings, convention centers, and stadiums) and mid-rise structures (like hotels, apartment buildings/dormitories, military barracks, and hospitals). In this course, learn from experts in the LSF industry about the history of Cold Formed Steel, its durability, resistance to pests, and fire ratings. Discuss current specifications, design standards, and learn standard nomenclature for products including thickness, material strength, and coatings.

SteelSmart® System – Mid-Rise Load Bearing Steel Stud Framing Design

Interested in mid-rise loadbearing light steel framing? Loadbearing light steel framing is an economical option for the loadbearing system in structures like hotels, apartment buildings, dormitories, military barracks, and hospitals. In this course, learn about different components of loadbearing steel stud framing, how they are designed, SteelSmart® System structural design and detailing software, and review example projects including:

- Wall & Floor Systems
- Wall Sheathing and Mechanical Bracing
- Design of Wall Tracks - Partial Bearing on Concrete - Load Distribution Members
- Shear Walls – Diagonal Strap Bracing
- Construction Bracing

SteelSmart® System – Wind-Bearing (Curtain Wall) Steel Stud Framing Design

Interested in curtain wall light steel framing? Light steel curtain wall framing is used on structural steel/reinforced concrete structures like office buildings, convention centers, and stadiums. In this course learn about the differences between Infill and Bypass Framing, how they are designed, SteelSmart® System structural design and detailing software, and review example projects including, Curtain Wall Openings, Wall Sheathing and Mechanical Bracing, and Sliding and Rigid Connections

SteelSmart® System – Diagonal Strap Bracing Design

Interested in using diagonal strap bracing to resist lateral wind and seismic loads in mid-rise loadbearing light steel framing? StiffWall® diagonal strap bracing is an economical option to replace concrete or CMU walls for lateral load resistance. In this course, learn how to size the components of StiffWall® system; chord members (columns), corner connection (Boot) and diagonal straps. Also learn how to design StiffWall X-Braced Shear Walls using SteelSmart® System structural design and detailing software.

Cold-Formed Steel (CFS) Construction Techniques

Interested in building with light steel framing or looking for a refresher? In this course learn the responsibilities of contractors and installers in the design and construction of light steel framing for curtain wall and the load bearing system. What are the economics of Project Budget and Schedules? Understand LSF construction methods and learn about how TSN's Design Assist Service can help save you time and money on your next project.

Introduction to Building Information Modeling in Light Steel Framing

Are you using best practices for Cold Formed Steel Design? Recent advancements in Building Information Modeling (BIM) have made it an essential tool in the design, estimation, and construction process of light steel framing. This course explains how to design and build more effectively with Cold Formed Steel and covers advancements in BIM as it applies to this field.

- Benefits of BIM - Levels of Development (LOD)
- BIM in Light Steel Framing
- Demonstration of Capabilities of SteelSmart® Framer (BIM Framing Tool)

Building Information Modeling (BIM) / Revit Basics

This course prepares Users for the basics of creating 3-D Building Information Models (BIM) for light steel framing using Autodesk® Revit®. This course is intended to prepare new Revit users with the baseline knowledge they will need to start using the SteelSmart Framer plugin for Revit.

SteelSmart® Framer – Wall Framing, Shear Wall Framing, & Floor Framing

Broken into 3 separate courses, providing Users an introduction to Wall Framing, Shear Wall Framing and Floor Framing in SteelSmart Framer, a powerful new light steel framing plugin for Autodesk® Revit®. ASI's SteelSmart Framer was developed exclusively for TSN to provide engineers and contractors with a powerful new tool to better design, estimate, and communicate light steel framing on projects using Autodesk® Revit® Building Information Modeling (BIM) software.





SteelSmart System 7.8

With 2018 IBC, AISI S100-16 & ASCE 7-16

The industry's #1 tool for the design of Members, Connections, Fasteners & Details

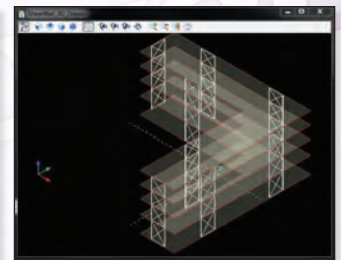
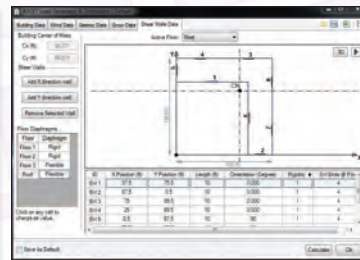
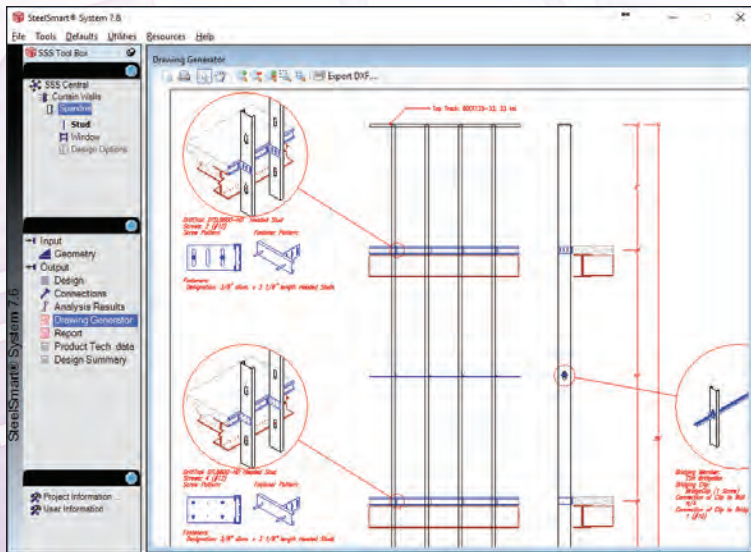
Introduction:

SteelSmart® System (SSS) provides construction professionals with an essential tool engineered for both fast and accurate design. SSS 7.8 raises the bar for light steel framing analysis and design by seamlessly integrating the well-known analytic power of its predecessors with additional functionality and accessibility.

Available as a complete suite, SteelSmart System 7.8 will streamline production through the design and detailing of members, connections, and fasteners. Available design modules include: Curtain Wall, Load Bearing Wall, X-Brace Shear Wall, Floor Framing, Roof Framing, Roof Truss, and Moment-Resisting Short Wall. SSS 7.8 incorporates two Advanced Features, the Load Generator and Distributor and the Layout and Connection Details Generator, that further aid the user in the design process.



Order online at www.steelSMARTsystem.com



Load Generator and Distributor

The Load Generator and Distributor tool uses the dimensions and load specification for a building to calculate the lateral wind and seismic forces according to ASCE 7 "Minimum Design Loads for Buildings and Other Structures." Now included in the Load Generator is the IBC 2015 and ASCE 7-10 design codes for development of lateral forces and snow loads. The output from the load generator gives the laterals forces distributed between floor levels and the shear walls at that floor level. The method of distribution considers either rigid or flexible floor diaphragms, while considering torsional effects when rigid diaphragms are selected. Output can be exported directly into the X-Brace Shear Wall design module or into an Excel spreadsheet.



Layout and Connection Details Generator

A major feature of SSS is the Layout and Connection Details Generator. The framing layout of components is generated with connection details that include connection design data (clips designations, number of fasteners, embedment lengths, and screw patterns). The drawing generator is included within all 7 primary design modules, and will create a detail upon successful design of components. The drawings can be printed or exported in the AutoCAD® DXF format allowing the drawings to be easily transferred into other drafting software.

In addition to the Layout and Connection Details generator, there is also a library of component details within SSS. Details are split into 7 categories including: Curtain Wall, Load Bearing Walls, Shear Walls, Products Details, Floor Framing, Roof Framing, and LSF Systems.



Contact ASI for licensing information:
Phone: (919) 645-4090
Fax: (919) 645-4085
Website: www.appliedscienceint.com
Email: support@appliedscienceint.com



SteelSmart® Framers

PLUGIN FOR REVIT

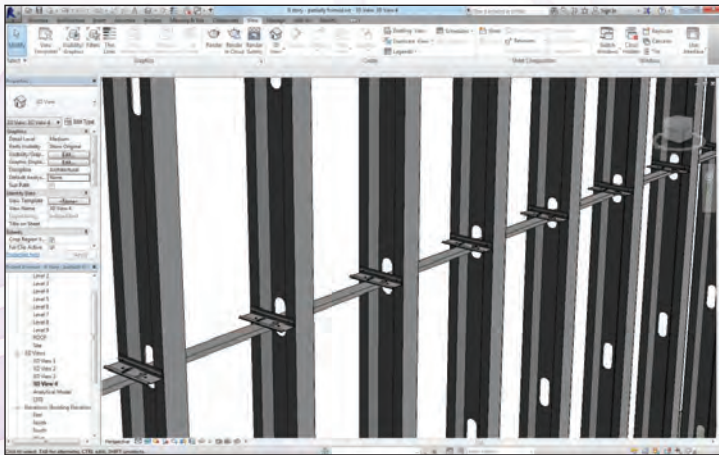
ASI's SteelSmart Framers was developed exclusively for The Steel Network, Inc. (TSN) to provide engineers and contractors with a powerful new tool to better design, estimate, and communicate light steel framing on projects using Autodesk® Revit® Building Information Modeling (BIM) software.

Features:

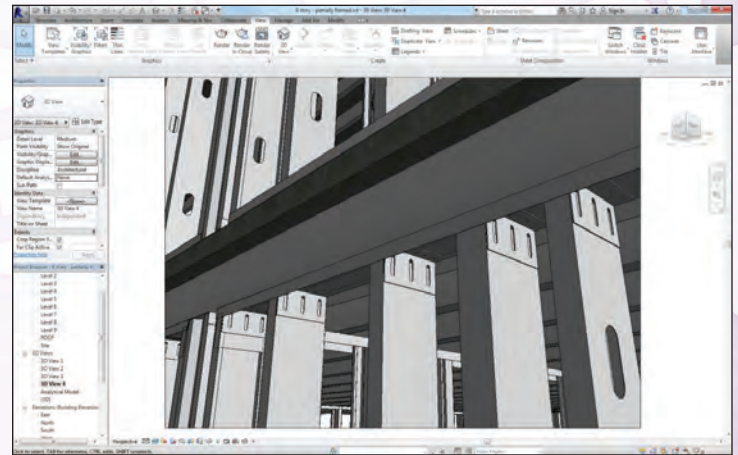
- Fully integrated 3-D BIM modelling in Autodesk Revit
- Create wall styles & layouts for standard wall types
- Easily model every stud, track, shear walls, and connector
- Know exact quantities and lengths for all all light steel framing
- Export complete material take-off to Excel for the whole structure, plus separate panel lists
- Export panel drawings with panel material lists
- Export plan layouts



Order online at www.steelSMARTsystem.com



Bridging Connection Detail



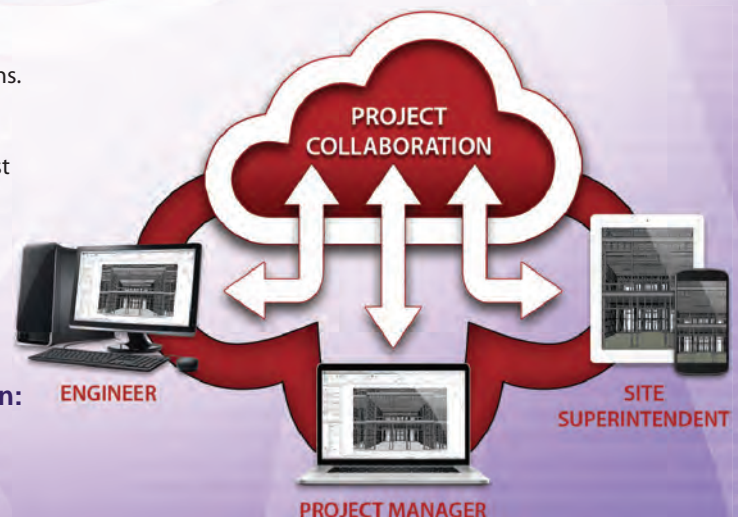
Vertical Deflection Connection Detail

3-D Cloud Based Project Collaboration

Cloud Based Project Collaboration with BIM modeling provide the design and construction team a centralized workspace to efficiently collaborate on the construction of your next steel framing project.

Benefits of 3-D Cloud Based Project Collaboration:

- Comprehensive 3-D model that includes all steel framing and connections.
- Review and comment on a full 3-D model from anywhere using your computer, tablet, or mobile phone.
- Project plans are updated instantly for the entire team to ensure the most accurate information.
- Improved quality and accuracy in the field.



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EXTREME LOADING® FOR STRUCTURES

Introduction:

Extreme Loading for Structures Software (ELS) is a commercially available software package that allows engineers to design to as built conditions and real-world threats creating both economical and robust performance based designs, rather than taking a more costly prescriptive code approach. Showcased in a recent white paper written regarding progressive collapse analysis, it was shown that ELS can save up to 40% on the structural system. The result is that buildings that are not only built stronger but also greener. Extreme Loading® for Structures delivers high-end structural analysis capability in a practical and engineer-friendly package.

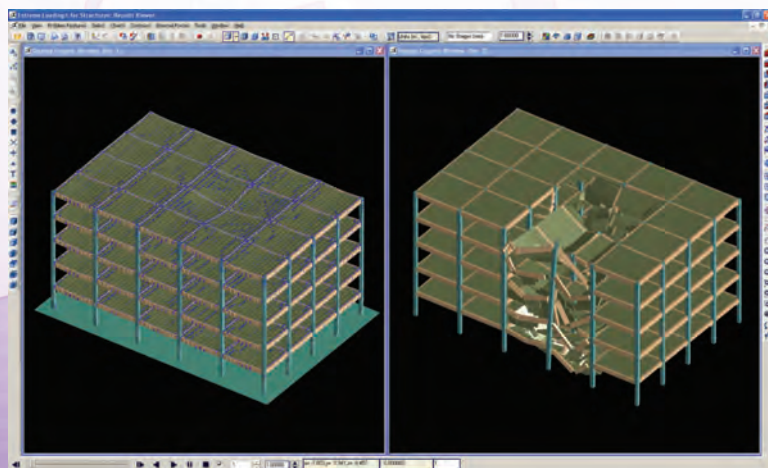
The Practicing Engineer's Solution for Advanced Nonlinear Dynamic Analysis

Analysis Features

The Applied Element Method (AEM) based solver in Extreme Loading® for Structures 6.0 is a derivative of the Finite Element Method (FEM) and the Discrete Element Method (DEM). AEM is capable of performing both linear and nonlinear analysis that follows the behavior of structures through separation, collision and collapse while automatically considering:

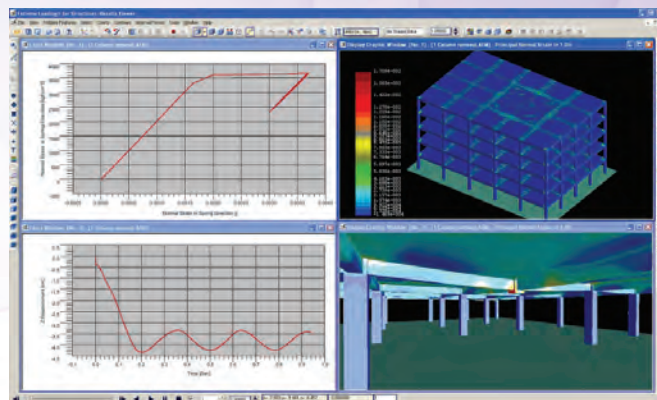
- **Yielding of Reinforcement:** calculates material strain from elastic to plastic deformation.
- **Plastic Hinge Formation:** automatically places plastic hinges.
- **Buckling and Post-buckling:** calculates elastic and plastic bending under compressive loads.
- **Crack Propagation:** calculates the location and propagation of cracks.
- **Membrane Action & P-Delta Effect (P-Δ):** calculates the dynamic force and displacement caused by Membrane Action and the P-Δ Effect.
- **Separation of Elements:** separates elements based on nonlinear material properties.
- **Collision & Collapse:** calculates collision & collapse of separated elements.

For Structural Engineers, this means assumptions typically required for such advanced analysis are eliminated. Defining plastic hinges is not necessary. Cracking, separation and collisions will occur automatically.

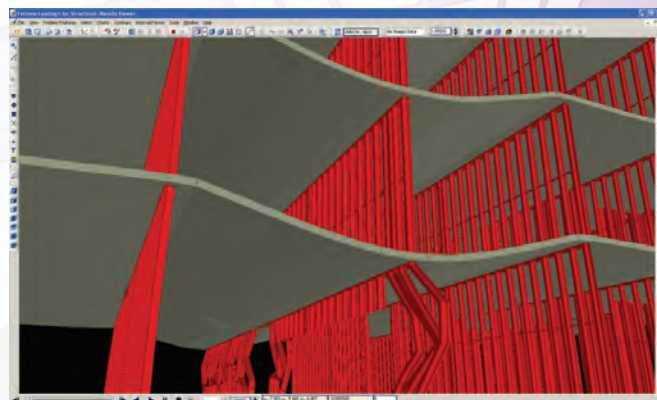


Automatic Crack Propagation

Automatic Separation



Automatic Yielding of Reinforcement



Automatic Membrane Action & P-Δ Effect

Modeling Features

- **Full 3-D Modeling:** build and modify your models in a 3-D environment
- **Pre-defined Styles (Building Components):** saves time by allowing the user to edit standard building components rather than creating them from scratch
- **Custom reinforcement:** model custom reinforcement bars, variably spaced stirrups, and steel sections
- **Built-up Steel Sections:** convert draft objects into steel sections
- **Automatic mesh adjustment & connectivity between elements:** element connectivity is generated by the program without user-intervention, saving precious time typically lost due to complex issues

Output Viewer Features

- **Eigen modes:** view animated periods and frequencies for all mode shapes of the model.
- **Custom Internal Force Diagrams:** create animated internal force diagrams for components, levels, or the whole structure taking into consideration cracks, rebar, yielding and other phenomena that occur during loading.
- **Contour Diagrams:** create animated stress, strain, and kinematics contour diagrams for components, levels, or the whole structure.
- **Charts:** allow users more control over all aspects of charts and the ability to animate charts to follow the steps of the analysis.
- **Movie Generation:** add text and markers to *.avi and *.bmp.



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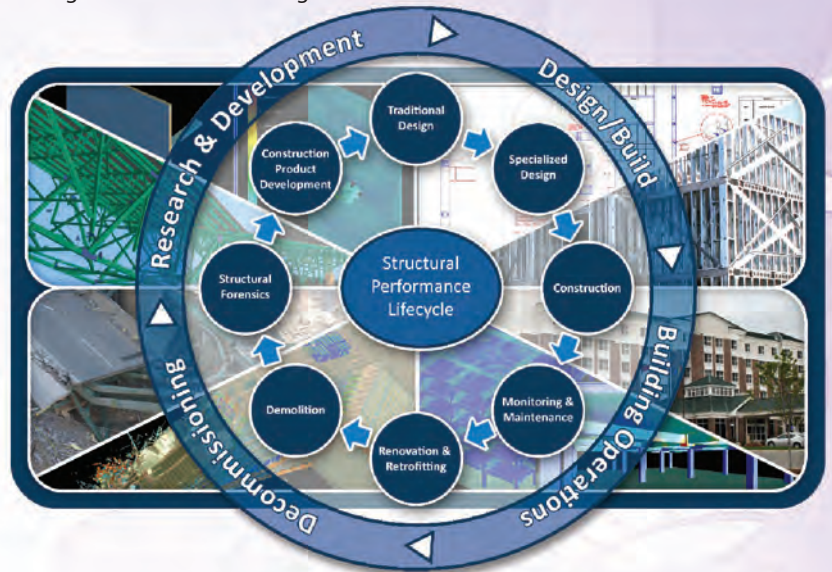
Uncompromising Resilient Design:

At Applied Science International (ASI), our focus is on the development of practical solutions through simplifying the process, not the analysis method. These solutions help the practicing engineer to design greener, more efficient structures which can not only provide significant cost savings, but design structures that better ensure the safety of its occupants.

When studying a problem, Engineers look for ways to provide accurate solutions that are practical to the allotted time, budget, construction materials, and technology available. The result has been the use of prescriptive code requirements paired with analysis solutions that sacrifice accuracy through simplified methods and analysis. To account for these simplifications, factors of safety are typically included to ensure any potential inaccuracies in the design are addressed. This approach results in potentially overdesigned structures with higher construction and maintenance costs.

The performance lifecycle of structures is a frequently discussed issue within the engineering community due to a range of challenges which include: aging infrastructure, recurring man-made and natural disasters, new construction materials, environmental sustainability, and the introduction of BIM.

With the integration of BIM into the design of structures, the performance based life-cycle analysis is becoming an integrated process. This process looks at all phases of a structural system from design, to maintenance, extreme events, rehabilitation, and eventual demolition or forensics. With recent advances in ASI's structural analysis technology, simplified analysis is not the only economical solution. In fact, in many cases it is costly when compared to a performance based analysis of the entire structure. These solutions can result in the reduction of structural cost, decrease the construction timetable and increase security of the structure against performance requirements.



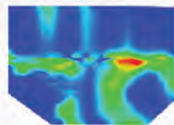
Make better decisions throughout the structural lifecycle by more accurately analyzing and visualizing structural health for resilience and the cost/benefit of robustness.

About Applied Science International

Since 2004, Applied Science International (ASI) has focused on creating tools for engineers and scientists to help optimize and analyze structures. When it comes to specialized design, extreme loading conditions, or structural failures, ASI's team of veteran engineers and scientists provides a collective wealth of hands-on experience in engineering research, software development, analysis, and design. With ASI's proprietary Extreme Loading® Technology (ELT), it is able to provide superior non-linear dynamic structural analysis and 3-D visuals, replacing current practices which rely on simplified analysis with many assumptions.



ELS Analysis Results of the I-35W Bridge Collapse



Initial Gusset Plate Failure

ASI Services

- Performance Based Design
- Cold-Formed Steel Design
- Historic Preservation
- Custom Software Development
- Demolition Analysis and Planning
- Renovation, Rehabilitation, and Retrofitting
- Structural Building Information Modeling (BIM)
- Blast, Impact, Progressive Collapse, Seismic, and Wind Analysis
- Forensic Engineering, Accident Reconstruction and Expert Witness



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Website: www.appliedscienceint.com

Email: support@appliedscienceint.com



University Hospital Implosion Design
Rio de Janeiro, Brazil

Terms, Conditions, and Limited Warranty

Product Use

Products in this catalog are designed and manufactured for the specific purposes shown, and should not be used in other applications unless approved by a qualified design professional. All modifications to products or changes in installation procedures should be made by a qualified design professional. The performance of such modified products or altered installation procedures is the sole responsibility of the design professional or installation contractor. The installation contractor and/or qualified design professional are responsible for installing all products in accordance with relevant specifications and building codes.

Customers modifying products or installation procedures, or designing Custom products for fabrication by The Steel Network, Inc. ("TSN") shall, regardless of specific instructions to the user, indemnify, defend, and hold TSN harmless for any and all claimed loss or damage occasioned in whole or in part by Custom or modified products or installation procedures.

Modifications to TSN products, improper loading or installation procedures, or deviations from recommended applications will affect TSN products' load-carrying capacities. TSN products are fabricated from hot-dipped galvanized steel for corrosion protection but will corrode and lose load-carrying capacity if exposed to salt air, corrosive fire-retardant chemicals, fertilizers, pressure treated wood or other substances that may adversely affect steel or its galvanized coating. This document edition reflects changes in the allowable loads and configurations of some of TSN's products. This information supercedes information in earlier documents or technical reports. All earlier documents or technical reports should be discarded and reference made exclusively to this edition. TSN may correct any clerical or typographical errors. All sales are subject to TSN's standard terms and conditions of sale.

Limited Warranty

TSN warrants its products to be free from defects in material or workmanship at the time of shipment. TSN standard catalog products are warranted for adequacy of design when used in accordance with design limits in this catalog and properly specified and installed. TSN products shall not be substituted with non-TSN products if it is part of a system. Substitution of a TSN product will immediately void any warranty claim made by Purchaser. This warranty excludes uses not in compliance with specific applications and installation procedures set forth in this catalog. Warranty claims must be made by Purchaser in writing within ninety (90) days of receipt of the products.

All warranty obligations of TSN shall be limited, at the sole discretion of TSN, to repair or replace the defective product(s). These remedies shall constitute TSN's sole obligation and sole remedy of purchaser under this warranty. In no event will TSN be responsible for incidental, consequential, indirect, exemplary, incidental, special, consequential, or punitive damages, or other losses or damages however caused, including, but not limited to, installation costs, lost revenue or lost profits. TSN's liability for damages shall in no event exceed the applicable portion of the purchase price for defective product(s).

Product defects that arise from acts of God, accidents, misuse, misapplication, improper installation, storage damage, negligence, or modification to product(s) or its components are specifically excluded from this warranty. Product defects that arise from Purchaser providing incorrect information to TSN, including but not limited to incorrect specifications such as incorrect dimensions, designs and/or loads, are also specifically excluded from this warranty. TSN does not authorize any person or party to assume or create for it any other obligation or liability in connection with Products except as set forth herein.

This Warranty is expressly in lieu of all other warranties, expressed or implied, including any warranties of merchantability or fitness for a particular purpose, all such other warranties being hereby expressly excluded.

Patented Technology

BackIt®, BridgeBar®, BridgeClip®, BuckleBridge®, CircleTrak®, DriftClip®, DriftCorner®, DriftTrak®, GripClip®, 600JAM®, 800JAM®, JamStud®, MidWall™, MasterClip®, NotchTrak®, PrimeWall®, 600SG®, 800SG®, SigmaStud®, SigmaTrak®, Step-Bushing Technology™, StiffClip®, StiffWall®, ThermaFast®, TightStrap®, VertiClip®, and VertiTrack® are trademarked products, and are patented or patent-pending technologies of TSN. Numerous TSN design configurations are patented and/or patent pending and are protected under US and International patent laws. Patent numbers include: #4,970,410; #4,970,411; #4,970,412; #4,970,413; #5,079,710; #5,467,566; #5,904,023; #5,906,080; #6,612,087; #6,701,689; #6,892,504; #7,104,024; #7,503,150; #7,559,519; #7,596,921; #7,634,889; #7,788,878; #7,832,162; #7,836,657; #8,132,383; #8,181,419; #8,205,402; #8,387,321 and #8,683,770.

Contact Information

North Carolina

The Steel Network, Inc.
2012 T W Alexander Drive
P.O. Box 13887
Durham, NC 27709
Phone: (919) 845-1025
Fax: (888) 474-4877

Texas

The Steel Network, Inc.
600 Lemens Avenue
Suite 120
Hutto, TX 78634
Phone: (512) 642-9603
Fax: (512) 857-1663

Nevada

The Steel Network, Inc.
1650 Helm Drive
Suite 1000 - 1200
Las Vegas, NV 89119
Phone: (702) 643-4330
Fax: (702) 643-4331



Web Site: www.steelnetwork.com

E-mail: support@steelnetwork.com

Toll Free Nationwide Phone
(888) 474-4876

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TRUST
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