

**“If you want to save time and money, improve productivity,
and build your structure faster, USE TSN PRODUCTS!”**

SigmaStud®

The Future of Mid-Rise Construction



**The Smart and
Economical Alternative
to Concrete Block & Masonry**

- ☞ **Accelerated Construction Schedules**
- ☞ **Substantial Material & Labor Savings**
- ☞ **Non-Combustible, Green Building Product**

**TSN Provides the
Complete Wall System:**

- ☞ **StiffWall® Shear Wall**
- ☞ **Wall Bridging**
- ☞ **Jambs, Openings, & Rigid Connectors**



Available Nationwide!
www.steelnetwork.com
Sales Support: (888) 474-4876

SigmaStud®

The Future of Mid-Rise Construction

SigmaStud® is a breakthrough in the load-bearing wall construction industry, producing significant economies for the project team when compared with conventional building products. SigmaStud's unique qualities provide installation and design advantages creating efficiencies no other load bearing wall component can provide. Reducing material & labor costs in the wall system, decreasing foundation requirements, and minimizing base shear are among the possibilities that SigmaStud can offer to the construction team.

Load Bearing mid-rise structures are an ideal application for TSN's SigmaStud® and StiffWall® systems. Clients who have discovered the tremendous value of TSN's solutions include the developers and designers of:



- ◆ Hotels
- ◆ Schools / Dormitories / Barracks
- ◆ Assisted Living Facilities
- ◆ Multi-Family Residential Structures
- ◆ Medical Facilities
- ◆ Retail / Mixed-Use Projects
- ◆ Office Buildings



Wall Construction Advantages

- ☞ Reduction of material and labor costs
- ☞ No "furring" required for electric and sheetrock as required in masonry walls
- ☞ Significantly lighter weight for easier handling
- ☞ Wider flanges and lighter sections facilitate faster connections for both drywall and sheathing fasteners
- ☞ Frequently eliminates the use of 'ganged' studs to accommodate higher loads
- ☞ ASI's Steel Smart System® 5.0 supports engineered design of all components
- ☞ Meets all UL and STC ratings and requirements
- ☞ Compatible with all common types of floor systems and designs, including HC Plank, Concrete Composite Decks, Open Web Bar Joists, and LSF Joists

Overall Project Value

- ☞ Optimize foundation thickness (typically to a traditional slab)
- ☞ Reduce wall mass (may result in a decrease of base shear as per requirements of seismic design in Building Codes)
- ☞ Accelerate schedules and improve coordination with 'Prime Subcontractor'
- ☞ Allow M-E-P trades to initiate their scopes of work earlier, without having to wait for total structure completion
- ☞ Begin revenue stream sooner for owner/developer (up to 180 days depending on the scope of the project)
- ☞ Lower general conditions expenses for GC or CM relative to construction schedule and minimize coordination issues with sub-trades
- ☞ Recognize benefits in insurance cost for both construction and ownership due to non-combustible construction, in addition to meeting LEED® requirements

Compatible with All Common Floor Systems



6 Story Structure
General Contractor: Barton Malow
Sub-Contractor: RGC, Inc
Specialty Engineer: ESI (Engineering Services Inc.)
Architect/EOR: Little Diversified Architecture

UNC-G Dormitory, Greensboro, NC SigmaStud® Value Replaces Both Concrete & Steel

The five-story Dormitory at the University of North-Carolina-Greensboro was constructed with SigmaStud® in conjunction with MSR Versa-Dek® as the floor system. Originally designed as a cast-in-place concrete wall and floor structure, the project could not meet either its original completion schedule or its budget. As the project was re-engineered using conventional SSMA "cee" sections, issues developed on the 1st floor with shear walls and section capacities. Finally, the utilization of SigmaStud®, StiffWall®, and lighter-weight composite decking all led to an ultimate reduction in the overall cost equal to \$750,000, and, more importantly, the project was completed ahead of time with an accelerated construction schedule of 10 months for the 200,000 square foot structure.

Met budget by reducing overall cost equal to \$750,000!



2 Buildings (4 Stories Each)
General Contractor: WM Jordan
Sub-Contractor: Agent Wall Systems
Specialty Engineer: LSA, Inc
Architect/EOR: Clark Nexsen

Old Dominion University - Quad Housing SigmaStud® Value Replaces Both Concrete & Steel

The Quad Housing development at Old Dominion University presented the construction team with an opportunity to save significant time and money through the use of SigmaStud® as the primary load-bearing wall component, replacing concrete block. TSN provided a free value engineering comparison for the construction team, communicating the true worth of utilizing SigmaStud® to the Architect, Engineer of Record, General Contractor, Sub-Contractor, Specialty Engineer, and the Owner/Developer. The switch to SigmaStud® resulted in a 30% savings in the cost of the wall construction, created substantial additional savings by reducing the overall foundation requirements and accelerated the construction schedule.

"The service provided by The Steel Network in support of the SigmaStud® and the StiffWall® systems has given us the opportunity to shine for our customers. The serviceability of SigmaStud® and its ease of construction allows for production rates and compatibility with rough-in trades never before seen in the metal stud/drywall industry. We have charted a new course at Agent Wall Systems thanks to The Steel Network." - Kenny Jones, Agent Wall Systems

SigmaStud® will accommodate the preferred floor system type for any mid-rise structure.

Significant savings are realized when utilizing SigmaStud® in conjunction with hollow-core slabs, traditional composite decks, and multi-story residential floor systems, including:

- ☞ A reduced mass of structure relative to foundations and lateral forces
- ☞ An increase in GC benefits because of shorter construction schedules & lower operating costs on the job site
- ☞ A revenue generating stream that can start sooner for the owner due to a reduced construction schedule
- ☞ Plank & bar joists that do not require shoring similar to composite & proprietary concrete floor systems
- ☞ A skilled labor force is already available from traditional subcontractors



TSN provides a free consulting and value engineering service to designers and contractors for a seamless integration and full understanding of the systems, leading to a successful project. Contact us to find out how we can help with your next structure.

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SigmaStud®

The Future of Mid-Rise Construction

Optimize Your Structure. Accelerate Construction.

The Hilton Garden Inn Southpoint, Durham, NC

The six-story Hilton Garden Inn was originally designed with concrete block as the axial load bearing wall material. The change to SigmaStud® delivered exceptional value to the construction team, with the component weight of SigmaStud® (8psf) replacing the much more cumbersome 45psf concrete material. This 80% reduction in bearing weight resulted in the utilization of a traditional thickened slab in place of a larger, thicker foundation. Additionally, the decrease in the wall mass also produced a lower base shear, minimizing materials needed for shear wall construction. As a result of the change to SigmaStud® and by combining it with TSN's StiffWall® to address shear forces, the structural components were erected in six weeks rather than the 3.5 months it normally would have taken with the concrete block material.

6 Story Structure
 General Contractor: Snavelly Building Company
 Sub-Contractor: RGC, Inc
 Architect: Gordon & Greenberg, Inc.
 EOR: JDA Engineers, Inc.

"RGC specializes in hotel construction from Florida to Pennsylvania. Since we started using TSN's SigmaStud® and StiffWall® systems we have doubled the size of our company. The systems cut 30% of our labor and 20% in material costs, and their simplicity made it easy to sell to the GC's, Architects, and Engineers. Thanks to TSN we are able to offer cost savings to our clients without losing speed and quality of work. The entire construction team benefits." - Derrick Gilchrist, RGC Inc.



First Floor



Jan 17, 2007

Second Floor



Jan 25, 2007

Third Floor



Jan 31, 2007

Fourth Floor



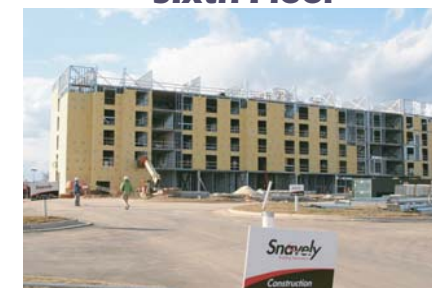
Feb 7, 2007

Fifth Floor



Feb 15, 2007

Sixth Floor



Feb 17, 2007

"Using SigmaStud® in place of concrete block provided us with a \$400,000 savings in the wall assembly, and we were able to reduce foundation and floor slab requirements, resulting in an additional \$500,000 savings, for a total of \$900,000 saved on our project."

Hampton Inn, Dunn, NC

The five-story Hampton Inn began as a project utilizing concrete block walls. A value engineering analysis initiated by the EOR and performed by TSN determined that SigmaStud® would provide a substantial savings when compared with the original materials, enabling the project to move forward under a reduced budget. The lightening of the structure and the redistribution of the loads to the foundation resulted in the elimination of geo-piers and a switch to typical spread footings. The total savings provided from the switch to SigmaStud® was \$300,000.



5 Story Structure
 General Contractor: Hill Construction Group
 Sub-Contractor: Modern Walls
 Architect: The RBA Group
 EOR: Hunter Structural
 Specialty Engineer: Structural Systems Engineers

"Load Bearing Wall Systems with SigmaStud and StiffWall resolved cost overruns of the project. The redesign process was seamless and simple. The construction process and schedule which resulted was all that was anticipated, and more." - Gene Hunter, Hunter Structural

The Value of Steel Framing Products by The Steel Network

Factor	SigmaStud® & StiffWall®
Fire Safety	Non-combustible - does not burn or contribute fuel for the spread of fire.
Pests	Impermeable to pests, such as termites and carpenter ants.
Material Life Cycle	Does not warp, is always straight; does not rust; will not rot; does not expand or contract when exposed to moisture.
Strength	High strength-to-weight ratio.
Weight	Steel framing is 5.67 times lighter than CMU (Concrete/Masonry Unit); Lighter weight to help reduce foundation requirements where possible.

"The development of SigmaStud® and StiffWall® is allowing the use of cold-formed metal framing in structures over 7 stories. SigmaStud® will propel the cold-formed steel industry in to projects that were normally handled by structural steel or concrete masonry units."
 - Don Young, LSA Inc.



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“When we proposed the change to SigmaStud® and the benefits were presented, we were seen as heroes by the developer. The referrals are pouring in!” - Structural Engineer



Wyndham Hotel, Gettysburg, PA SigmaStud® Value Replaces Concrete Masonry Block

The six-story Wyndham Hotel in Gettysburg, VP was constructed with SigmaStud® in conjunction with Hollow-Core plank as the floor system. Originally designed with a cast-in-place concrete floor system with block walls, TSN's free value engineering service helped to illustrate the savings potential relating to the utilization of SigmaStud® and StiffWall® with hollow-core concrete plank. The savings in the material cost of the wall coupled with the construction savings realized in removing the need for shoring resulted in the owner deciding to switch to light steel framing on all of their future projects.

6 Story Structure
General Contractor: Conewago Enterprises
Sub-Contractor: RGC, Inc
Specialty Engineer: LSA, Inc.
Architect: Gordon & Greenberg, Inc.
EOR: Adtek Engineers, Inc.

“The SigmaStud® system was originally incorporated into our 6-story, 180,500 SF Wyndham Hotel and Convention Center because it was less expensive than CMU bearing walls. As we became more familiar with the system, we realized that it had a large positive impact on our schedule. With utilizing the SigmaStud®, we were able to complete the project in just over a year. The Owner was so satisfied that he will not allow another CMU bearing wall system to be used on any of his hotel projects.” - Donald B Smith, President, Conewago Enterprises

The SigmaStud® Effect

☞ Reduce structural mass

☞ Use all types of floor systems

☞ Improve trade coordination

☞ 40% more efficient than ‘cee’ stud

☞ Meet budgetary requirements



☞ Accelerate construction schedules

☞ Optimize wall components

☞ Provide cost certainty

☞ Frame one floor per week

☞ Create foundation savings

Unprecedented Value Nationwide!

StiffWall® Shear Wall Completes the Solution

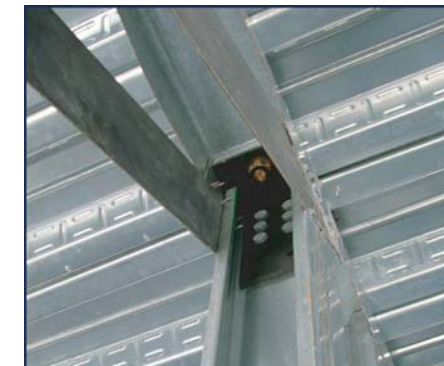
StiffWall® shear walls are designed to provide both lateral strength and stiffness for a structure while at the same time improving installation efficiency. The double-lipped Column section resists up to 40% more axial loads when compared with a “cee” shape of like thickness. Corner attachments are greatly simplified through the StiffWall® Boot. Available in a wide range of sizes, the Boot contains pre-drilled holes for anchors to both structure and column. Each Boot is placed in a Strap Track containing pre-drilled holes for screw attachment of the flat strap to the Boot and Column, and then installed at the top & bottom corners of the shear wall.

StiffWall® Value

- ◆ Attachment of strap to corner/column may be made with screw fasteners or weld
- ◆ Simple connections at corners to speed the construction process
- ◆ Guide holes for fast and accurate attachment of boot to both column and structure
- ◆ Flexible height, width, and depth for maximum applicability
- ◆ No bulges at corners results in smooth finishes
- ◆ Versatile design may be used in steel, concrete, and wood structures
- ◆ Allows 3x the window space of plywood-braced structures



Connect with screws or weld



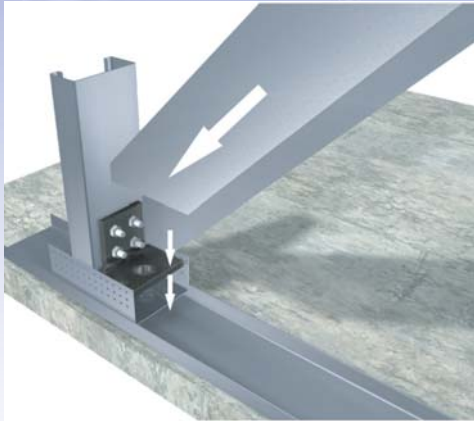
Clear inspection at corners



Simple connections, no complicated templates needed

Shear Wall Framing...Easy as 1,2,3

StiffWall® SW-S



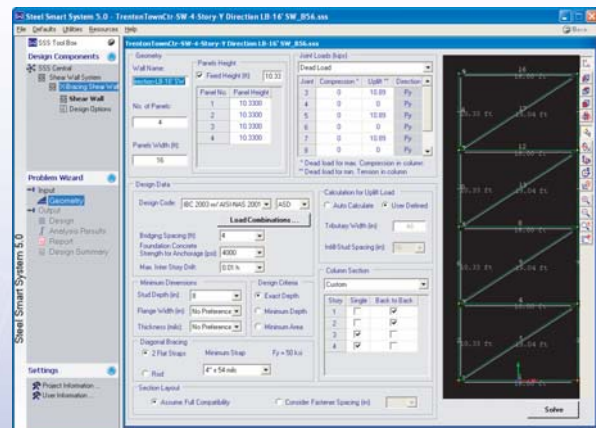
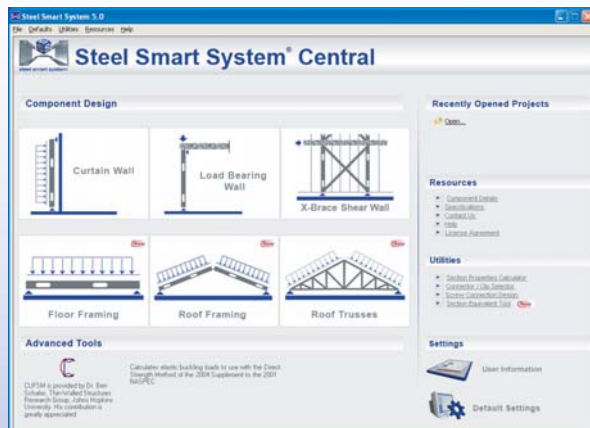
TightStrap
Tightens flat strap
during shear wall
installation!



Column ends are pre-drilled
for fast connections

Steel Smart System® 5.0

The #1 tool for the design of light steel framing
members, connections, fasteners, & details



Design TSN's load bearing SigmaStud® and
StiffWall® shear wall!



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