

# NEWSLETTER

## SIP Design advantages

*Best use of SIPs for Design professionals*



Did you know that SIPs are the enclosure system of choice for the timber frame industry? According to the Timber Frame Business Council, the business arm of the Timber Frame Guild, over 95% of timber frame homes in the U.S. are enclosed using SIPs. This timber frame home in Tennessee was enclosed with General Panel SIPs.

### How can SIPs solve design dilemmas?

SIPs are the “go-to” solution for enclosure in the timber frame industry and gaining support in metal frame and post frame industries for enclosure, especially when metal cladding does not meet local design needs

SIPs solve energy efficiency and workmanship problems when cathedral ceilings are needed.

SIP floors solve problems where floors are exposed as part of the insulation envelope.

Pre-cut SIP walls can take the guesswork out of budgets and workmanship follow-through.

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### SIPs are right because they are solid

Most energy loss in structures is due to workmanship issues. The more pieces the more mistakes. SIP buildings are built in large sections- up to 8' x 24' sections- with no pieces to join within that area- no place to get it wrong- easier to check that everything is right.

There are no voids in a SIP structure to fill with insulation- or forget to fill.

This results in a solid structure with straight walls and clean roof lines and nowhere for pests, moisture, mold or unhealthy air to hide.

It's just easier to get it right with SIPs.

### SIP ADVANTAGES FOR CATHEDRAL CEILINGS

One major design advantage that SIPs have over all other building systems is in cathedral ceilings.

SIP roof construction is similar to conventional ridge and rafter construction in that roof loads are carried on ridges and eaves, with purlins used to shorten spans. The difference is that SIPs bear on top of the beams and that the solid insulation is fully contained within the SIP.

Spans depend on panel thickness, but 12' to 18' is the normal range. With panels up to 24' long, many designs only require a ridge beam and the eave to carry the entire span.

Although SIPs can be used for walls and floors also, cathedral ceilings are their most cost-effective use. Typically cathedral ceilings can be erected in SIPs for 15 to 20% less than any other system.

Additionally, the quality of insulation in a solid SIP and its ease of quality construction makes them uniquely suited to cathedral ceiling design applications.

With only one installation, with one trade and no sagging or missed insulation, it's amazing that anyone would ever use anything else for a cathedral ceiling.

Certainly SIP cathedral ceilings are Green- environmentally and economically.



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### SIP FLOORS



SIP floors have limited use because they need bearing support every 8' to 12' on center, mostly limiting their use to insulation situations.

This home had much of its underside exposed to the exterior environment creating a need to pay attention to the floor as part of the insulation envelope.

The solution was a SIP floor for the exposed portions.

Another excellent use for SIP floors is as a deck over post and pier foundations where it is impossible or economically unfeasible to use concrete perimeter foundation. This often

happens in resort environments in the mountains and for raised caisson foundations at the beach. SIPs make an excellent deck, usually at 4' to 8' on center. This reduces the other structure necessary, making SIPs the best choice.

SIPs are also popular for floors where hydronic floor heating systems are desired.

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### EASY VS. CHAOS



Panels are pre-cut and numbered- hard to make mistakes- easy

Stick frame is complicated, hundreds of pieces, many decisions, many workers- chaos.

## SIP PRE-CUT WALL SYSTEMS ACTUALIZE YOUR DESIGN

SIPs are laminated in large pieces fit to the need. Our base stock comes in sizes up to 8' x 24' allowing large sections of wall to be produced in a continuous sheet with structure, sheathing and insulation done at the same time.

From the building plans we create CADD panel plans which are converted to CAM machine drawings which allow our Weinmann CNC cutter to cut the panels to close tolerances- tolerances which exceed the tolerances of any other material on site.

Your review of our panel plans assures that no errors occur. Panel plans include panel numbers and placement with every panel marked with its panel number.

Pre-cut means fast assembly- days instead of weeks- keeping schedules from getting bogged down.

Engineered strength means real strength, strength you can rely on due to triple redundancy load charts. We are not as weak as our weakest component like stick frame.

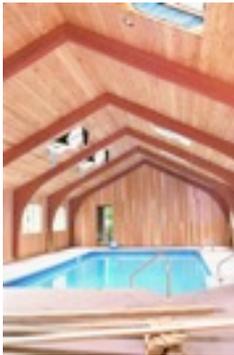
What you see (on the plan) is what you get.



***We actualize your design- no workmanship errors or misinterpretation.***

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## LARGER STRUCTURES



SIPs give you insulated long, strong spans. This makes them ideal for pool enclosures and churches.

SIPs are often used in log home roofs.

They are the material of choice for insulated frame

enclosure whether timber frame, post frame or steel frame.

General Panel Corp has design and engineering help available.

[www.generalpanel.com](http://www.generalpanel.com)

423 747-8710 Butch Johnson

## AGRICULTURAL POSSIBILITIES

SIPs are often used for large freespan structures like covered arenas. This structure was just over an acre with 14' eave posts and with laminated timber trusses at 12' on center. No purlins were needed because the SIPs stabilized the spans between.

Although insulation was not the aim, this arena is much more comfortable than similar structures built with metal due to the radiant heat reduction characteristics of SIPs- very comfortable shade.



# SIP Education Opportunities



General Panel provides a number of training/education opportunities to professionals. In addition to introductory seminars throughout the Southeast, we also provide AIA-approved continuing education seminars in Lunch and Learn presentations directly to architects.

We also have a Train the Inspectors seminar available to help Building Inspection professionals understand the issues involved in inspecting a mostly closed system with emphasis on correct and incorrect installation, bearing, electrical, plumbing, window and door installation, headers and HVAC.

We also have trainers available for builders and owner/builders.

Please contact Butch Johnson at [bjohnson@generalpanel.com](mailto:bjohnson@generalpanel.com) 423 747-8710 if you would like a Lunch and Learn for your firm or to find a seminar near you.

## Calendar

**February 26, 2009**

Nashville SIP seminar- Opryland Hotel- call for details

**March 10, 2009**

Lunch & Learn, Knoxville firm

**March 13, 2009**

SIP seminar, Charlotte, NC hotel- call for details

**March 19, 2009**

SIP training for inspectors

**March 26, 2009**

Lunch & Learn, Marietta, GA firm

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