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contents

Editor's Message

Ready, Get Set for Whole House Design

by Barry Dixon

Whole House Design (WHD) holds tremendous opportunity for component manufacturers.

Whole house design" (WHD) seems to be the industry's latest buzz word or catchphrase. However, I wonder how many component manufacturers are really sure what it actually means. WHD offers countless benefits in efficiency and cost savings for builders and homeowners—not to mention a great way for manufacturers to find a niche in their market by offering a value-added service. With that being said, having worked in WHD for more than a decade, I've seen that there are complex but crucial issues manufacturers must consider before offering WHD services. Let's take a walk through WHD and shed some light on this catchphrase. We'll touch on the areas of software, the importance of load paths, single element design vs. system design, and industry testing that can take WHD to new heights.

Software developers fueled much of the talk about WHD that began a few years ago when many of them announced they were integrating roof and wall systems. This initial integration that allows for modeling the components in a structure—wall panels, roof and floor trusses—in the same software program was an important step. This advanced modeling brings the industry closer to developing a solution that will eventually allow manufacturers to follow the flow of loads down to the foundation. While this initial integration is a major first step to WHD, there will have to be dozens of advancements beyond that to have complete WHD software or automated "one-push-of-the-button" solutions that not only include all components in the structure, but the foundation, soil and all loads.

...WHD is here to stay, building momentum and bringing the structural integrity of buildings to a whole new level.

One of the first steps to a true software solution was the transfer of design capabilities from a 2-D to a 3-D drawing. Moving design into a 3-D format allows the software to begin to analyze the real dimensions of a component, not just the lines. The next step now lies in the flow of loads, which consists of gravity, wind and lateral applied load conditions acting individually or simultaneously. Our industry and codes are based around single element design properties where each product is rated as if it is stand-alone and not part of a system. For example, trusses are single element designs comprised of single element parts, such as 2x4 lumber and truss plates. Today's software does not take into account the entire quantity of trusses in the system. Likewise, the software does not account for the plywood sheathing, sub-fascia, permanent web member bracing, or the sheetrock on the bottom chord.

at a glance

- To fully understand how loads interact with each other, they must be tested as a system instead of as an individual element.
- WHD is here to stay, building momentum and bringing the structural integrity of buildings to a whole new level.

While software solutions are in development, component manufacturers can offer WHD today by working with an engineering firm. More than ten years ago, True House started working with an engineering firm to offer WHD and bridge a gap in our market for this value-added service. After a few years, we expanded our WHD offerings by forming our own engineering company. Through the use of spreadsheets, formulas, code and individual element analysis, engineering firms can tie all the pieces together and evaluate an entire structure. By forming these partnerships, manufacturers can deliver a complete solution on the design side by offering

Continued on page 8

...the SBC Research Institute will give us the in-depth analysis from testing that can be integrated into the modeling needed to take the next steps toward true WHD, as well as advance the use of all structural building components.

Editor's Message

Continued from page 7

an extra level of connectivity between the truss and structural design. These advancements are becoming increasingly important especially in the wake of catastrophic disasters such as tornados and hurricanes and resulting changes to the codes. By partnering with an engineering firm, manufacturers can go the extra mile for their customers without personally taking on the education, training and additional liability of being the engineer.

Component manufacturers' current work in WHD and the hard work that our suppliers are undertaking with software developments on the horizon are a testament to the need within the industry for a comprehensive understanding of the flow of loads within a structure. To fully understand how these loads interact with each other, they must be tested as a system instead of as an individual element. Realizing how imperative this kind of testing is, the WTCA Board of Directors elected to build the SBC Research Institute, our industry's research and testing facility, which will look at these issues and then share the findings with the construction industry as well as the building code community. This testing will have the capability to follow the load path on four axes simultaneously, thus allowing us to begin to understand how individual components work within a system. By looking at the flow of loads through a structure and not just a single element, the SBC Research Institute will give us the in-depth analysis from testing that can be integrated into the modeling needed to take the next steps toward true WHD, as well as advance the use of all structural building components. For more on the SBC Research Institute, see the article on page 44.

Whether it's working with an engineering firm or our suppliers working with component manufacturers to develop comprehensive software solutions, WHD is here to stay, building momentum and bringing the structural integrity of buildings to a whole new level. Much how truss design software revolutionized the industry years ago, WHD can revolutionize the industry again. Along with developing structurally sound buildings, component manufacturers can use value engineering to realize the proper use of materials and connections and ultimately drive down construction costs. And that's just with the knowledge we have today! Our understanding of the flow of loads within a structure will expand with testing conducted at the SBC Research Institute and is sure to push WHD to new heights. Get ready; this is only the beginning. SBC

SBC Magazine encourages the participation of its readers in developing content for future issues. Do you have an article idea for a future issue or a topic that you would like to see covered? Email your thoughts and ideas to editor@sbcmag.info.

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The mission of *Structural Building Components Magazine (SBC)* is to increase the knowledge of and to promote the common interests of those engaged in manufacturing and distributing structural building components. Further, *SBC* strives to ensure growth, continuity and increased professionalism in our industry, and to be the information conduit by staying abreast of leading-edge issues. *SBC*'s editorial focus is geared toward the entire structural building component industry, which includes the membership of WTCA – Representing the Structural Building Components Industry. The opinions expressed in *SBC* are those of the authors and those quoted, and are not necessarily the opinions of Truss Publications or WTCA.

Publisher's Message

An Industry on the Move

by Emmy Thorson-Hanson & Libby Maurer

"He who moves not forward, goes backward"

–Johann Wolfgang von Goethe

Time doesn't slow down for anyone, and many people end up getting left in the dust as the world around them is continuously changing. With advancements in engineering and design constantly affecting the structural building components industry, it's important to stay on top of the most current information. In that vein, ***SBC*** is here to make your life easier by delivering the most pertinent and up-to-date information directly into your mailbox nine times a year. In this issue, you have at your fingertips several articles that will get you up to speed on what advancements are shaping our industry yet again.

Whole house design is a topic that's been covered in our pages for several years. Starting in 2004, we explained what a complete whole house design business model would mean to component manufacturers. In his 2005 June/July Editor's Message, WTCA President Kendall Hoyd approached the topic from the research perspective. In spite of all this coverage, it seems you haven't grown tired of talking about it. In fact, we recently conducted a One Minute Poll to see where you think this elusive new technology will take us. Check out the results of this poll as well as additional discussion on the topic of whole house design on page 38, "Component Manufacturers Weigh in on Whole House Design."

For many, the cutting edge of this industry comes from finding answers to the interesting questions working with components presents. Just like the questions about what designing the whole structure with one click of the mouse will be like, their answers may some day be printed in these pages. One critical step in that process starts with an exciting new facility currently in its final stages of construction in Madison, WI. The SBC Research Institute will be up and running soon, so turn to page 44 to find out more about what this state-of-the-art facility will mean to you and the industry.

While no one can say for sure what the future of design software will bring, we found a few companies that aren't waiting around. No amount of hype about a new product can speak to the vast capabilities of components in modern building applications like the designers at Richco Structures and John Arthur Consulting. The unique structures they built showcase the versatility of structural building components. Enjoy the unique projects that raise component design to an art form, beginning on page 28.

Jerry Koskovich is known for his passion for moving this industry forward, especially where automation is concerned. In this issue he discusses the benefits of automated jigging starting on page 50.

The new WTCA Annual Workshop & Conference, held March 21-23 in Las Vegas, was a certifiable hit. Don't forget to check out page 56 to see why attendees liked the new format and why you don't want to miss out on next year's event.

While nothing can stop the passage of time, take a few minutes this month to slow down long enough to reflect on the direction in which you're moving, or if you're moving at all. We hope you find this issue representative of the forward-reaching direction of the industry at large, especially as it pertains to design and engineering. We think you'll agree that the future is indeed bright. SBC

at a glance

- This issue acknowledges the design and engineering advancements that sculpt our ever-changing industry.
- Find out what component manufacturers are thinking about WHD software.
- Learn what you need to know about WTCA's new testing facility in this issue.
- See how two companies are stretching the boundaries of component design to create works of art.

Technical Q & A

Unbalanced Snow Loads

by Jim Vogt, P.E. & Richard Zimmermann

Depending on the approach taken, determining snow loads can range from a simple to a more complicated calculation.

Metal plate connected wood trusses are used in the roofs of the majority of one- and two-family dwellings constructed in the U.S. today. The gravity load design for many of these roofs is controlled by snow loads. The 2000 and 2003 editions of the International Residential Code (IRC®) permit these roofs to be designed using either ground snow load or the provisions in ASCE 7. In addition, the 2006 edition of the IRC also permits roof trusses to be designed using a roof snow load of $0.7p_g$, as long as the stated applicability limits are met. Using the ground snow load is the simplest approach, but often yields more conservative results. The provisions of ASCE 7 provide more accurate loads, but can also be very complicated and require an in-depth knowledge of the building and site conditions.

Question

Do unbalanced snow loads need to be considered on pitched roof trusses designed in accordance with the IRC?

Answer

The consideration of unbalanced snow due to drifting across roof breaks (i.e., gable or hips) is not explicitly required by the IRC. Section R301.6 indicates that roofs must be designed to support the greater of roof live load or snow load,

> **R301.6 Roof load.** The roof shall be designed for the live load indicated in Table R301.6 or the snow load indicated in Table R301.2(1), whichever is greater.*

where the snow load provided in Table R301.2(1) is the Ground Snow Load.

Section R301.2.3 refers to Chapters 5, 6 and 8 for specific information pertaining to snow loads supported by members in floors (Chapter 5), walls (Chapter 6), and roofs (Chapter 8),

> **R301.2.3 Snow loads.** Wood framed construction, cold-formed steel framed construction and masonry and concrete construction in regions with ground snow loads 70 pounds per square foot (3.35 kPa) or less, shall be in accordance with Chapters 5, 6 and 8. Buildings in regions with ground snow loads greater than 70 pounds per square foot (3.35 kPa) shall be designed in accordance with accepted engineering practice.

Span tables provided in Chapters 5, 6 and 8 for wood structural framing members such as cantilevered floor joists supporting roof loads, girders and headers in exterior walls, wall studs and rafters are based on ground snow loads.

Ground snow load (p_g) varies by region and is typically specified by each jurisdiction that adopts and enforces the code. P_g is a base value that does not include any of the ground-to-roof adjustments that often result in a reduction in load. Using p_g as the roof design snow load for one- and two-family dwellings is considered a fairly simple, yet conservative approach. Unbalanced snow loading is not typically considered if p_g is used as the roof design snow load.

A new provision was introduced to the wood truss section (i.e., R810.2) of the 2006 edition of the IRC that permits the use of roof snow load computed using $0.7p_g$.

*Underline added for emphasis.

at a glance

- A new provision was introduced to the wood truss section (i.e., R810.2) of the 2006 edition of the IRC that permits the use of roof snow load computed using $0.7p_g$.
- Engineered design, through ASCE 7, is required in instances where the limitations on which the IRC is based are exceeded.
- ASCE 7 snow load design provisions require the evaluation of other conditions that may produce load surcharges in addition to the balanced uniform loads of p_f or p_s.

•••• Key Definition ••••

Building Designer: The Owner of the Building or the person that contracts with the Owner for the design of the Framing Structural System and/or who is responsible for the preparation of the Construction Documents. When mandated by the Legal Requirements, the Building Designer shall be a Registered Design Professional.

> **R802.10.2.1 Applicability limits.** The provisions of this section shall control the design of truss roof framing when snow controls for buildings not greater than 60 feet (18 288 mm) in length perpendicular to the joist, rafter or truss span, not greater than 36 feet (10 973 mm) in width parallel to the joist span or truss, not greater than two stories in height with each story not greater than 10 feet (3048 mm) high, and roof slopes not smaller than 3:12 (25-percent slope) or greater than 12:12 (100-percent slope). Truss roof framing constructed in accordance with the provisions of this section shall be limited to sites subjected to a maximum design wind speed of 110 miles per hour (49 m/s), Exposure A, B or C, and a maximum ground snow load of 70 psf (3352 Pa). Roof snow load is to be computed as: $0.7\ p_g$.*

Section R802.10.2.1 provides the specific limitations for which this provision applies, including building size, building height, roof pitch, wind speed, exposure category and ground snow load and is similar to the applicability limits established for cold-formed steel.

Section R301.1.3 of the IRC also permits the building, structure and parts thereof to be designed using accepted engineering practice in accordance with the International Building Code (IBC®). Engineered design is required in instances where the limitations on which the IRC is based are exceeded.

The design snow loads in the IBC are determined using the provisions of the SEI/ASCE 7, *Minimum Design Loads for Buildings and Other Structures.* ASCE 7 is developed and maintained by the American Society of Civil Engineers.

Using the provisions of ASCE 7, p_g is modified by applying factors to account for the importance of the building, I, the exposure condition of the roof, C_e, and the thermal characteristics of the building, C_t, to obtain the flat roof snow load, p_f:

$$p_f = 0.7(C_e)(C_t)(I)p_g$$

The sloped roof snow load, p_s, is obtained by multiplying the p_f by the roof slope factor C_s. The value of C_s is dependent on the magnitude of the roof slope, the thermal characteristics of the building and slipperiness of the roof surface. For many residential roof applications, $C_s = 1.0$. The values of the various factors used to derive p_f and p_s are site and building specific and are best determined by the Building Designer for the project. In the absence of a Building Designer, the contractor and/or building official may also be able to provide the correct information.

The roof design snow load (i.e., p_f or p_s), obtained using the provisions of ASCE 7 is often substantially less than p_g for most residential roof applications. However, in addition to analyzing the member using a balanced design snow load of p_f or p_s, ASCE 7 requires that other conditions be evaluated, many of which result in a load surcharge to at least a portion of the member.

Unbalanced snow loading is one of the more common conditions that must be evaluated for hip and gable type roofs when using the design snow load provisions of ASCE 7. The unbalanced snow load is intended to account for the drifting caused by wind blowing snow across roof breaks such as ridges. This particular provision has been modified considerably over the past several editions of ASCE 7, and since the

Continued on page 14

Edition	Windward	Leeward	Conditions
7-88 & -93	0	$1.5p_s/C_e$	Slope >15 ° or <70°
7-95	0	$1.3p_s/C_e$	Slope >15 ° or <70°
7-98	0	$1.5p_f/C_e$	$W \le 20$ ft & $\theta \le 5°$
	0	$1.5p_s/C_e$	$W \le 20$ ft & $\theta > 5°$
	$0.3p_s$	$1.2(1+\beta/2)\ p_s/C_e$	$W > 20$ ft & $\theta > (275\beta\ p_f/\gamma W)$
	$0.3p_f$	$1.2p_f/C_e$ sloping to $1.2(1+\beta)\ p_f/C_e \le 1.2(p_f/C_e)+\gamma h_e$	$W > 20$ ft & $\theta \le (275\beta\ p_f/\gamma W)$
	(β is based on L/W ratio)		
	β = 0.5	L/W ≤1	L = roof parallel to ridge W = horizontal eave to ridge
	β = 0.33+0.167L/W	1 < L/W ≤4	
	β = 1.0	L/W > 4	
7-02	0	$1.5p_s/C_e$	W ≤20 ft
	$0.3p_s$	$1.2(1+\beta/2)\ p_s/C_e$	W >20 ft
	(β is based on p_g)		
	β = 1.0	$p_g \le 20$ lb/ft²	
	β = $1.5 - 0.025p_g$	$20 < p_g < 40$ lb/ft²	
	β = 0.5	$p_g \ge 40$ lb/ft²	
7-05	0	Ip_g	Roof rafters where W < 20 ft
	$0.3p_s$	p_s uniform + a drift surcharge of $(h_d\gamma/\sqrt{S})$ with an extent of $(\frac{8}{3}h_d\sqrt{S})$	All other roof types

Table 1. Unbalanced Snow Loads for Hip & Gable Roofs

Continued from page 13

2000, 2003 and 2006 editions of the IBC each reference a different edition of ASCE 7, it is important that the correct version of ASCE 7 be used.

Table 1 on page 13 provides a summary of the equations used to calculate the unbalanced snow loads for hip and gable type roofs beginning with the 1988 edition of ASCE 7 and culminating with the current 2005 edition. Note that the 2000 IBC references ASCE 7-98, the 2003 IBC references ASCE 7-02, and the 2006 IBC references ASCE 7-05.

Table 2 provides a summary of the maximum design reaction force, maximum design shear and maximum design moment derived for a roof truss spaced at 2' on center, with a 5/12 top chord pitch, a span of 30' and 2' overhangs at each end, using A) p_g for the roof design load; B) p_s for the roof design load; C) the unbalanced snow load based on the ASCE 7-98 and ASCE 7-02 provisions; and D) the unbalanced snow load based on the ASCE 7-05 provisions. Review of this table indicates that, for the parameters chosen, using p_g as the uniform roof snow design load produces the most conservative results. Note also that for this example, p_g was taken as 50 psf and the factors for C_e, C_t, I and C_s were chosen so that $p_s = 0.7p_g$. If we assume that building length, height and site conditions for exposure and wind speed are within the appropriate limits, then the maximum reaction, shear and moment values provided for condition B represent those derived for a truss for which the applicability limits of Section R802.10.2.1 of the 2006 edition of the IRC would apply. A comparison of the reaction, shear and moment values for condition B with those derived for condition D indicate the values are very similar.

As stated above, ASCE 7 snow load design provisions require the evaluation of other conditions that may produce load surcharges in addition to the balanced uniform loads of p_f or p_s. Besides unbalanced loading, other conditions include drifting on lower roofs, drifting at roof projections, sliding snow, rain-on-snow surcharge and ponding instability. While all of these conditions may not apply to each project, the analyses required for those that do can be very complicated and depend on building and site parameters that are best addressed by the Building Designer for the project.

For a more detailed discussion of the ASCE 7 loading provisions, download a copy of The Load Guide at **www.sbcindustry.com/loads.php**. SBC

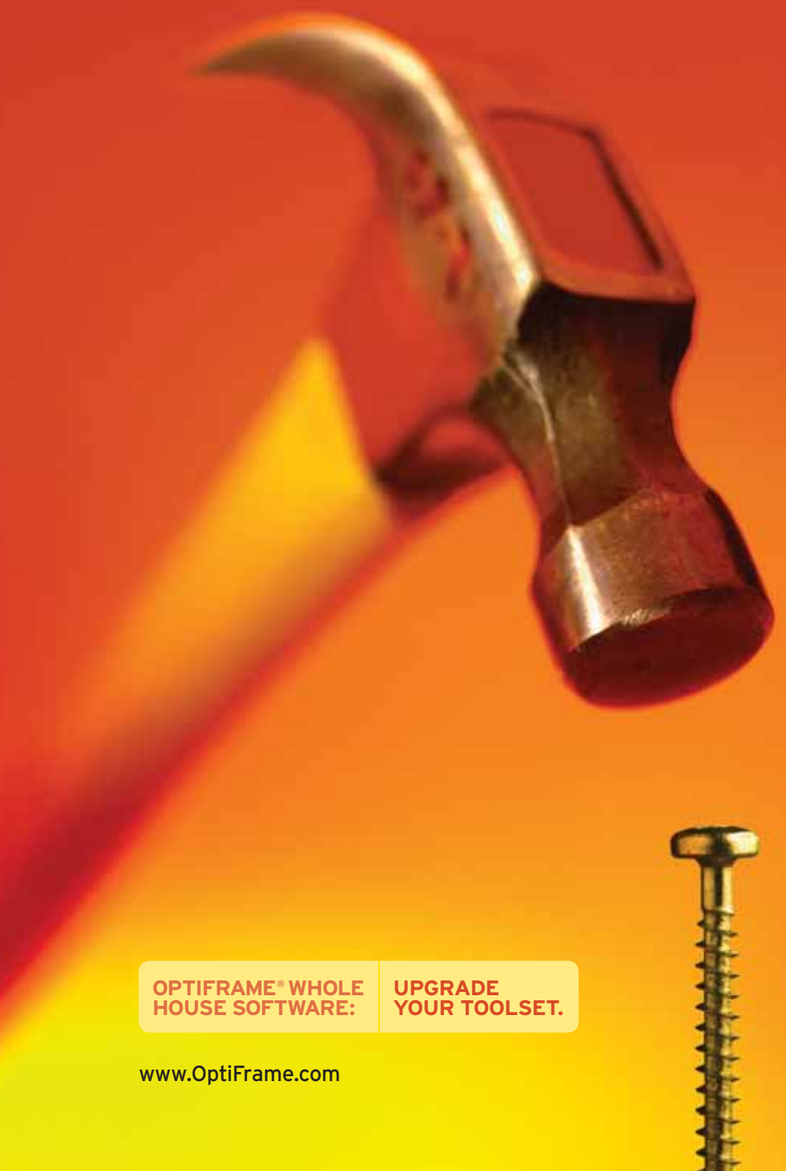
To pose a question for this column, call the WTCA technical department at 608/274-4849 or email technicalqa@sbcmag.info.

Design Condition	Maximum Design Reaction (lbs)	Maximum Design Shear (lbs)	Maximum Design Moment (lbs-ft)
A. Balanced Design Snow Load = p_g[1]	1,700	1,485	10,802
B. Balanced Design Snow Load = p_s[2]	1,190	1,040	7,561
C. Unbalanced Design Snow Load = 0 psf windward and $1.5p_s/C_e$ leeward (ASCE 7-98 & 7-02)	1,403	1,178	6,352
D. Unbalanced Design Snow Load = $0.3p_s$ windward and p_s + drift surcharge[3] (ASCE 7-05)	1,177	1,027	6,847

Table 2. Maximum Reaction, Shear and Moment Values Using Selected Balanced and Unbalanced Design Snow Load Conditions.

[1]pg = 50 psf; [2]ps = 35 psf = Cspf = Cs0.7(Ce)(Ct)Ipg; where Ce = 1.0, Ct = 1.0, I = 1.0, Cs = 1.0; [3]In calculating the drift surcharge S = 2.4 and hd is calculated using Iu = W = 17 ft.

WHEN ALL YOU HAVE IS A HAMMER, EVERYTHING LOOKS LIKE A NAIL.



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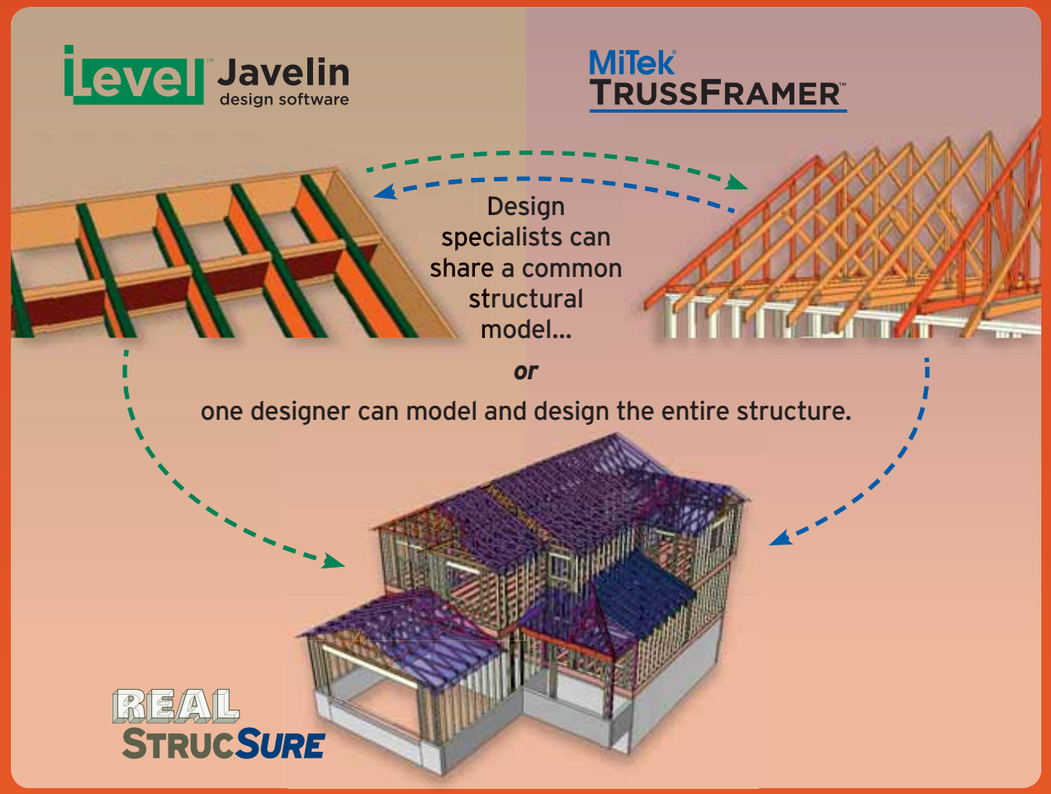

These three software products, *Powered by OptiFrame,* provide you with new flexibility to run your design departments the way you want — providing optimal workflow to suit your business model. Specialist designers can share the model, reducing rework and repairs. If you prefer, train some (or all) of your design staff to model and design the entire structure from start to finish, giving your customers a single contact who completely understands and controls the entire model.

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Safety Scene

Basic Spanish—A Little Goes a Long Way

by Molly E. Butz

Language barriers don't have to get in the way of a safe work environment.

Every year, Spanish-speaking workers continue to become a larger percentage of the U.S. workforce, particularly in construction and manufacturing industries. In the structural building components industry, some locations across the country report that 80 percent or more of their current workforce is Spanish-speaking. Because of this, component manufacturers should strongly consider learning to communicate with their workers in a language that both the supervisor and worker understand, especially when safety is at stake.

If you're fortunate enough to have an employee that speaks both English and Spanish fluently, great! If not, start with the very basics. Here are some simple words and phrases that you may find useful in your day-to-day operations. The list is short, but it just might mean avoiding that next in-plant injury!

My name is	Me llamo	"may yamo"
What is your name?	¿Como te llamas?	"como tay yamas"
What?	¿Qué?	"kay"
Where?	¿Dónde?	"doen-day"
When?	¿Cuándo?	"kwan-doe"
Who?	¿Quién?	"key-en"
Why?	¿Por qué?	"pour kay"
Yes	Sí	"see"
No	No	"no"
Go	Ve	"vay"
Stop	Para	"para" (par as in golf)
Follow me	Sígame	"see-gah-may"
Are you injured?	¿Está herido usted?	"es-tah err-ee-do oo-sted"
Call 911!	¡Llame a nueve uno uno!	"yame ah new-eh-vay oo-no oo-no"
First Aid Kit	Botiquín de primeros auxilios	"boat-ee-king day pree-mare-os owx-eel-ee-os"
Clean this up	Limpie esto	"lim-pee-ay ess-to"
Turn off the power	Apague el poder	"ah-pah-gay el poe-dare"
Caution/Careful	Cuidado	"kwee-dah-doe"
Danger	Peligro	"pay-lee-grow"
Dangerous	Peligroso	"pay-lee-grow-so"
Put on your	Póngase sus	"pohn-ga-say sus"
• Safety glasses	Gafas de seguridad	"gah-fas day say-gure-ee-dad"
• Gloves	Guantes	"gwan-tays"
• Ear plugs	Tapones de oídos	"tah-pohn-es day oh-wee-does"
• Hard hat	Casco de seguridad	"kas-co day say-gur-ee-dad"
• Respirator	Respirador	"res-peer-ah-door"

Take the time to work with your supervisors on these English to Spanish translations and visit **Support Docs** for a formatted, printable poster you can use at a safety meeting or post in your facility. And don't forget, everything sounds better with a please (por favor) and thank you (gracias)! Safety first! (¡La seguridad primero!) SBC

If you're looking for more safety training in Spanish, WTCA's Operation Safety and Forklift Certification programs are offered in both English and Spanish. For more information contact WTCA at 608/274-4849. This article was partially excerpted from Rural Builder, *October 2004.*

at a glance

- ❑ It is common for close to 80 percent of a plant's workforce to be Spanish-speaking in our industry.
- ❑ You don't have to be bilingual to communicate effectively with your employees.
- ❑ Knowing a few key terms and phrases will help you keep your workers safe.

Bcmc 2007

Lou Holtz—The Wise Motivator

by Emmy Thorson-Hanson

"Your talent determines what you can do. Your motivation determines how much you are willing to do. Your attitude determines how well you do it."

—Lou Holtz

What is one thing that everyone who attends BCMC has in common? Everyone is part of a team—their company's team. For this reason, the kick-off speaker for 2007 is the perfect person to start off the show.

The last time that BCMC attendees were entertained by a notable speaker from the sports world was in 1998 with Johnny Bench. Almost ten years later, attendees can look forward to another inspiring sports icon...Lou Holtz! This man has become a legend known for his success in coaching teams across the country and his words of wisdom. When it comes to a winning attitude and knowledge of teamwork, his expertise is unparalleled.

NCAA Legend

Sports enthusiasts are likely to know Holtz as the only NCAA Football Head Coach to within two years of joining each program take six different teams to a bowl game (winning five of them) and guide four different college teams to final Top 20 rankings. Holtz was Coach of the Year in 1977 and 1988. Some of his most memorable feats include leading Notre Dame to the national championship with a 23-game winning streak in 1988 and putting a stop to the nation's longest losing streak as head football coach at the University of South Carolina (and then he continued to place the team in a bowl game within two seasons). In 2005 Holtz joined ESPN as a college football analyst.

But sports isn't the only medium in which Holtz is famous. He is also the author of five books. One titled *Winning Every Day* was published in August 1999 and made the New York Times bestseller list. He also has three highly acclaimed motivational videos. The best known video was the 1988 best selling corporate film *Do Right,* which examined the three values at the heart of Holtz's success. The film outlined how to use those values to achieve individual and organizational success.

Synonymous with Motivation

Holtz is a highly sought-after motivational speaker known for his leadership skills and strong work ethic. Holtz's message transcends athletics because his focus is on people and the values that make relationships (and organizations) excel. Holtz is known for speaking with humility and humor, which endear him to audiences captivated by his principles of success that made him a legend in NCAA football history.

Holtz's outlook on teamwork and goal-setting, the foundations of his approach, goes hand-in-hand with being an incredible motivational speaker. His ingredients for a successful organizational team include having each individual make a commitment to succeed, setting common goals, effective communication, utilizing each employee's diverse talents and empowering employees to accomplish objectives.

Take advantage of this opportunity to become inspired by a man who knows what it takes to build a successful team. Not to mention he is sure to energize you for the upcoming three days, and after being motivated by Holtz, you will be ready to seize all the opportunities that come your way at BCMC! SBC

For more details about BCMC 2007, October 3-5 in Columbus, OH, go to www.bcmcshow.com.

at a glance

- Coach Lou Holtz is one of America's most requested motivational speakers and is coming to BCMC 2007.
- Whether it's coaching a team to the National Championship or motivating your company's team, Coach Holtz knows how to motivate for success.
- Holtz is considered a legendary team leader and speaker on achievement.

Wtca Update

Open Quarterly Meeting Highlights: February 23, 2007 • Jacksonville, FL

by Libby Maurer

The year kicked off with a number of policy updates and new directives for WTCA.

The first Open Quarterly Meeting (OQM) of 2007 was called to order by WTCA President Barry Dixon. The minutes from the October 2006 OQM were approved.

2007 Open Quarterly & Board Meeting Schedule

During the review of the remaining Open Quarterly and Board Meeting Schedules, Dixon opened discussion on the October 6 Board Meeting that follows BCMC. **The Board unanimously passed the motion to move the October Board Meeting to the evening of Friday, October 5, to coincide with the Top Chord Club Dinner.**

Remaining OQMs for 2007 are scheduled as follows:

- **August 15-17:** Holiday Inn Golden Gateway, San Francisco, CA
- **October 5:** Columbus, OH

WTCA Policies Review

Staff reviewed the recommendations of the WTCA Policy Review Subcommittee, including the adoption of policies affecting photographs taken at BCMC and Industry Award acknowledgements. The subcommittee also recommended that certain policies be retired, due to being out of date. **The Board unanimously passed the motion to approve the recommendations.**

WTCA Bylaws Update

Kent Pagel reviewed changes to the WTCA Bylaws, revised to reflect the WTCA name change in 2006. Minor changes were made to reflect the council formation process and the testing facility. **The Board unanimously passed the motion to approve the changes to the WTCA Bylaws.**

Executive Committee Report

Staff discussed the progress of the testing facility construction and the creation of the Structural Building Components Research Institute (SBCRI). WTCA is providing the capital investment for facility operations. WTCA and TPI have agreed to undertake industry testing jointly. For 2007 the industry testing budget will be $500,000—$250,000 from each organization. WTCA and TPI have an agreement to continue to jointly fund industry testing through 2011. The SBCRI grand opening will be June 28 to coincide with the TPI Board Meeting. Visit **www.sbcindustry.com/testingfacility.php** for more information.

BCMC Floor Plan Policy: The Executive Committee recommended a change to the BCMC Floor Plan Policy.

UPDATE TO EXECUTIVE COMMITTEE BCMC FLOOR PLAN POLICY
(Recommended change in bold below):

The four truss plate manufacturers that contract for the largest amount of show floor space, individually or collectively with their business partners, shall form the BCMC anchor booths. Each anchor booth will occupy one of the four (4) outside corners of the BCMC show floor.

Anchor booth exhibitors that are owned by the same company should be placed in outside corners on the same side of the convention center. Each year the anchor booth exhibitors will flip sides. Anchor booth exhibitors will determine who should be placed in the front and back of the hall.

The show floor, as much as is possible, will be set with several hallways going completely east and west and completely north and south to accommodate good show floor flow and booth visibility and access. The more wide-open booths (typically 20x20, 20x30, 30x30, etc. booth sizes) will be sited near the front and middle of the show floor to allow for reasonable sight lines to each of the anchor booths.

Final exhibitor show floor placement will be made in concert with the location of show offices, show suites, meeting rooms, etc. whenever possible.

The motion to approve the updated BCMC Floor Plan Policy was passed unanimously.

BCMC Report

BCMC 2007 will be held in Columbus, OH on October 3-5. Exhibitor booth fees will not increase for 2007. The theme for BCMC 2008 in Denver, CO on October 1-3 will be "Mile High Performance."

SBC Magazine Update

WTCA staff reported that 2007 is off to a great start and ***SBC Magazine*** continues to undertake several industry projects of importance to our association and each member. Advertising sales for 2006 were up 13 percent over 2005, and staff thanked all the advertisers.

WTCA Committees Motions

Legislative Committee

Proposed Policy: Innocent Sellers Fairness Act (ISFA) – H.R. 989

WTCA supports passage of the Innocent Sellers Fairness Act (ISFA), as it holds sellers of products responsible in proportion to their wrongdoing, and provides protection from liability for damages that the seller did not cause. WTCA members are encouraged to participate in grassroots legislative advocacy efforts to build support for ISFA.

The motion to approve the proposed policy on the ISFA legislation was unanimously approved.

Proposed Policy: Workforce Training

WTCA believes that in order for manufacturers to remain competitive in the global economy, America needs to do more to educate and train the workforce of today and tomorrow. WTCA members are encouraged to participate in grassroots legislative advocacy efforts to build support for legislation that will provide more diverse education/training opportunities, additional funds for employee training grants and greater access to new and existing grants of this kind.

The motion to approve the proposed policy on Workforce Training passed unanimously.

Membership Committee

Proposed Policy: Participation in HBA Code Committee Meetings

Local, state and national building code changes are being used by a variety of interest groups to advance marketplace interests and agendas that, at times, are not in the structural building component industry's best interest.

Continued on page 24

at a glance

- ❑ WTCA's bylaws were amended to incorporate the name change approved in 2006.
- ❑ Policies were approved on the topics of Participation in HBA Code Committee Meetings and WTCA Staff Participation in Chapter Board Meetings.
- ❑ The 2007 budget was reviewed and approved.

Continued from page 23

It is essential that our industry understands what is going on in the local code environment and is tending toward being on the leading edge of key local, state and national building code issues. With this in mind, the WTCA Board requests that each Chapter designate an individual Chapter member and/or an individual WTCA member(s), who is dedicated to attending each state HBA code committee meeting at the frequency that they are held and report back to WTCA on all code related items that affect the structural building components industry.

Motion to approve the proposed policy on participation in HBA Code Committee meetings passed unanimously.

Proposed Policy: WTCA Staff Participation in Chapter Board Meetings

In an effort to maximize the advantage of the knowledge of both its chapter members and WTCA staff, in a very material and enduring manner, the WTCA Board asks that WTCA staff participate in all periodic Chapter Board/Executive Committee meetings (in person where already in the area, via speaker phone, via conference call, via email, etc.) that the chapter holds. To this end, a suggested approach for each WTCA Chapter to take to formalize this is through a simple by-laws change similar to the section underlined below:

IV. BOARD OF DIRECTORS

SECTION 1. GENERAL POWERS. *The business and affairs of the Association shall be managed by its Board of Directors.*

SECTION 2. NUMBER AND TENURE. *The Board of Directors shall consist of X members. This will include the X officers, and X members elected at large with one being the WTCA Board of Directors representative if that person is not an officer. At large members will be X year terms. The WTCA staff member attending chapter meetings shall be an ex-officio non-voting board member.*

The motion to approve the proposed policy on WTCA staff participation in Chapter Board meetings passed unanimously.

Weekly Board Report Update

The Board Report is a weekly document created by WTCA staff to inform members on the various projects and tasks accomplished. The Board provided feedback on changes that could be made. The general feeling is that it is a valuable and timely document and should continue to be sent out to the membership. Staff will continue to make improvements to this communication tool.

Treasurer's Report

Bob Becht reviewed a financial analysis sheet that was handed out to attendees. In 2006, operating expenses were 11.93% less than budget and operating income was 2.87% less than budget, resulting in a positive variance on the bottom line of 56.33%. Revenue was off due to overall sales of publications in 2006 being down, which could be attributed to the overall economic environment in 2006.

Becht reviewed the 2007 proposed budget. Over the past several years we have budgeted very conservatively on the income side and had a significant positive variance, due to the introduction of several new, successful products and programs. Our expense budget has historically been much more accurate than the revenue budget, since it is easier to track expenses closely. In the coming year, WTCA will strive to invest resources in projects that affect the structural

Continued on page 78

New WTCA Members

REGULAR MEMBERS

Braun Building Center
3303 Menasha Ave
Manitowoc, WI 54220-1633
920/682-0143
Mr. Keith Neumann
Sponsor: Mr. Stan Sias

Building Components of Idaho
1102 Franklin Blvd
Nampa, ID 83687-6754
208/442-9500
Mr. Corey Elitharp

Citadel Building Products, LLC
PO Box 470
Thomasville, GA 31799-0470
229/226-6440
Mr. Gary Poole

JL Schwieters Building Supply/Construction, Inc.
13925 Fenway Blvd N
Hugo, MN 55038-9265
651/762-1110
Mr. John Schwieters
Sponsor: Mr. Stan Sias

Locust Lumber Co., Inc.
PO Box 130
Locust, NC 28097-0130
704/888-4411
Mr. Leon Huneycutt
Sponsor: Mr. Stan Sias

Metal Component Truss, Inc.
5600 Zip Dr
Fort Myers, FL 33905
239/985-0775
Mr. Larry Burnes
Sponsor: Mr. Joe Odgers

Southeastern New Horizon Homes
26124 Hwy 21
Varnado, LA 70467
985/732-1978
Mr. Joe T. Nichols, Sr.

ASSOCIATE MEMBERS

Contractor Classes
801 W Bay Dr Ste 516
Largo, FL 33770-3220
727/403-1925
Mr. Steve Terepka

Dave Joiner, AIBD, CPBD
104 Hill Top Dr
Oneida, TN 37841
423/569-8559
Mr. Dave Joiner

Green-R-Panel Pre-fabricated Building Systems
422 North Runnymede Rd Ste 3
Concord, ON L4K3R5
514/898-3199
Mr. Larry Diamond, BCom

SPIDA Machinery 2000 Ltd.
PO Box 6273
Rotorua 3201 New Zealand
011/64-7-350-1590
Mr. Bevan Lines

Listing as of 4/6/07

For more information about WTCA membership, contact Anna (608/310-6719 or astamm@qualtim.com) or visit www.sbcindustry.com.

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A Unique Opportunity...a Truly Amazing Result

by Laura Herzog & Emmy Thorson-Hanson

There's nothing "square" about this project.

at a glance

- This project called for a 36' diameter round barn with a gambrel type roof with a 7' diameter hole in the center.
- To create the circular shape, each wall had a 5-degree change in angle, creating a total of 144 separate roof planes and 72 ceiling planes.
- The cathedral ceiling was accomplished using a series of four trusses that intersected all 72 ceiling planes.

Rick Thiesfeldt, a veteran component technician at Richco Structures (a division of Richardson Industries) in De Pere, WI, was presented with a unique challenge by Green Bay area builder Michael K. Haverkorn. In February 2006, Haverkorn, the contractor and framer for the project, brought in a sketch along with some ideas that he and the owner wanted to incorporate into the plan. The owner essentially wanted a 36' diameter round barn with a gambrel type of roof and a 7' diameter hole in the center to support a higher separate 8' diameter round roof. A gambrel roof has a steep pitch for the first portion of the roof and changes to a lower pitch toward the center. The owner wanted this unique structure for entertaining friends and family.

"I viewed it as a challenge. I do see a lot of home plans, but when you see something that is out of the ordinary it is always fun to get involved," commented Thiesfeldt on his initial reaction to the intricacy of the project. He is also one of Richco's Design Team Leaders.

Thiesfeldt drew up some preliminary designs and determined that the project was feasible for Richco to design and manufacture. Haverkorn took the drawings to the owner who was ready to get the project started, but wondered if it was possible to design a cathedral ceiling, and leave the trusses exposed because of the complex design they formed.

This made framing tricky. "The most challenging part of this project was figuring out how it was going to come together in the center. It was going to be a flat ceiling, but then we decided to make it vaulted, which was more of a challenge since it had an opening in the center," said Haverkorn.

The owner also asked that the floor system be designed to withstand the weight of a vehicle. "Originally we were going to use clear span trusses, but since the owner wanted to be able to park on the floor system, we decided to change it to be center bearing." To accommodate the owner's request, Thiesfeldt designed the center bearing floor to be 24" deep.

Haverkorn said that more interaction than usual was necessary for this project: "[Thiesfeldt] would continue making up drawings while we started building, and then as we got further into it we found out what we needed and they fine-tuned their part. The plans went back and forth until we felt comfortable."

Each wall had a 5-degree change in angle, which caused a variety of different ceiling and roof planes (total of 144 separate roof planes and 72 ceiling planes). Thiesfeldt was challenged to keep the number of hangers to a minimum because of the constantly changing angles and to enhance the aesthetics of the building. He accomplished this by utilizing a series of four trusses that intersected all 72 ceiling planes, acting as carriers with partial flat top chords that framed the hole in the roof. The common trusses were designed to bear on the flat tops of the carriers. By keeping the web pattern as constant as possible, an interesting design was created to the satisfaction of the owner.

Continued on page 30

By keeping the web pattern as constant as possible, an interesting design was created to the satisfaction of the owner.

What made this job unique was the 7' diameter hole in the center of the building with no interior supports.

A Unique Opportunity...a Truly Amazing Result

Continued from page 29

Dizzying Details

The interior of the building was completely finished with wood walls and a curved stairway leading down to the lower level. Custom lighting was installed, the most unique of which is a wagon wheel fixture that hangs from a point in the center of the building that is 28' high. The fixture is set low enough so that it illuminates the entire inside of the roofing system that has been stained to match the walls.

In his 32 years at Richco, Thiesfeldt has faced many design challenges. What made this job unique was the 7' diameter hole in the center of the building with no interior supports. “The complexity of it was interesting to me just because there were so many roof planes since we were trying to make it as round as possible. I had to work with Mike a lot to make sure everything went together smoothly,” said Thiesfeldt.

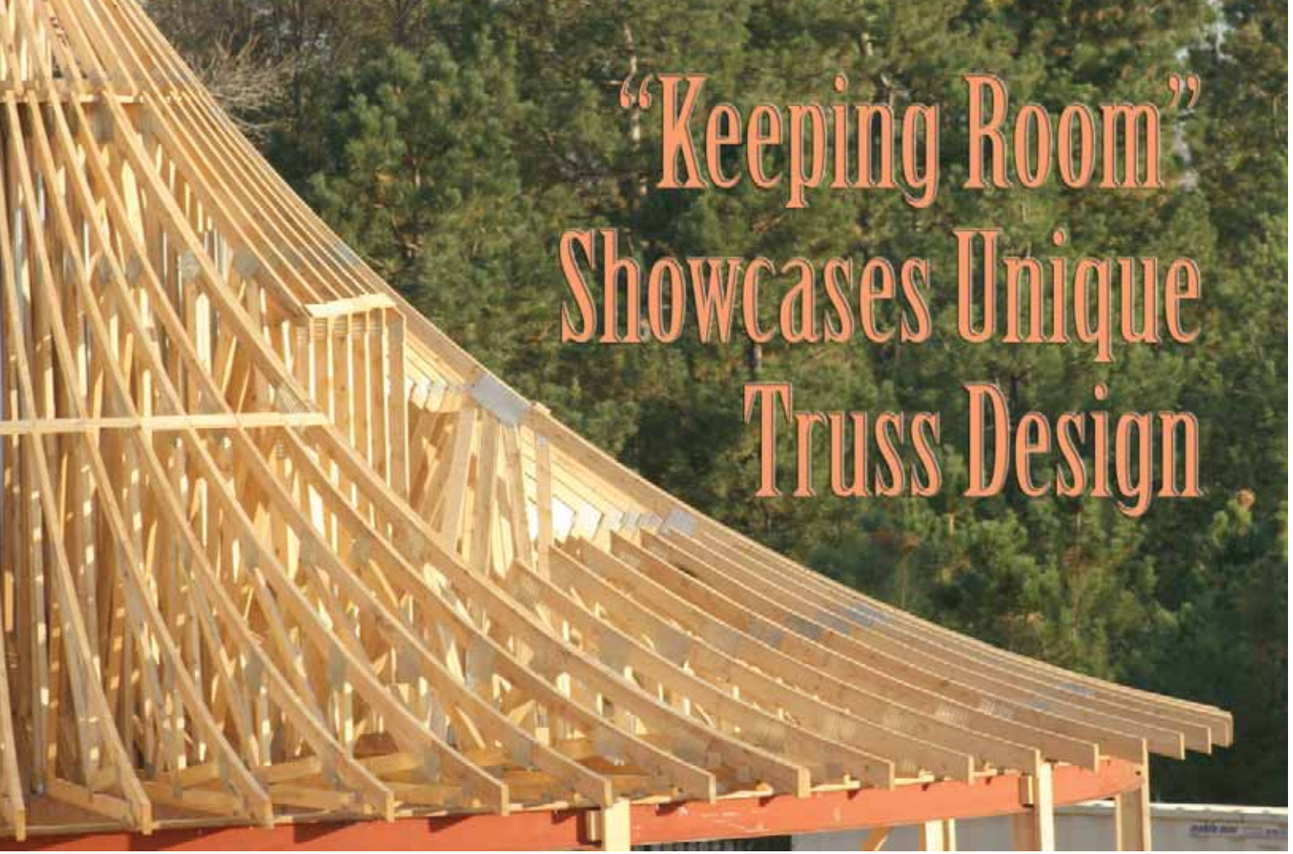
As the project progressed, the builder often remarked that he felt as though he was “going in circles.” Thiesfeldt explained that the girders had a curved bottom chord because it was intersecting so many planes at different angles. He added, “The hardest part was trying to mark where you set the first truss and making sure each truss was set in the correct position.”

Creating a round structure made framing more complicated as well. “This project was different because when you don’t have square walls you have to build as you go. You have to build it upright because you can’t put the wall together on the ground and then lift it into place. You are building more in pieces,” noted Haverkorn.

Although the process may have been tedious, the end product is remarkable. The circular masterpiece was built just a few miles south of De Pere, WI in the Town of Rockland. “This project took place three blocks from my house, so the fact that it was in my neighborhood made it more interesting,” noted Thiesfeldt.

Richco Structures, working closely with a builder who had a desire to build something truly unique, was pleased to give the owner something to be proud of. SBC

Laura Herzog is the Senior Accounting Analyst at Richardson Industries, Inc. where she has worked for ten years. She is a native of Sheboygan, WI, and is a graduate of Marquette University and Lakeland College. Laura works in both Accounting and Human Resources with her primary focus on benefit design, administration and government compliance.



"Keeping Room" Showcases Unique Truss Design

by Libby Maurer & Stephen J. Schernecke, Jr., P.E.

Trusses took center stage in this large custom home.

at a glance

- A custom home in a suburb of Denver was originally designed with a stick-framed Keeping Room.
- The builder and framer were skeptical about trussing the roof until the designer provided a full-size sample truss.
- The prototype convinced them that the Keeping Room should be trussed.

Customer service, a can-do attitude and an affinity for tricky truss design resulted in one of the most complex truss design project of Steve Schernecke's career. Having designed numerous circular roofs in 15 years of designing trusses—some with arched top chords in a dome-shape, some with vaulted ceilings, but most with a uniform pitch for the top and bottom chords—Schernecke was prepared to take on the challenge presented by Bond General Contractors, Inc. on a custom single-family residence in a Denver suburb.

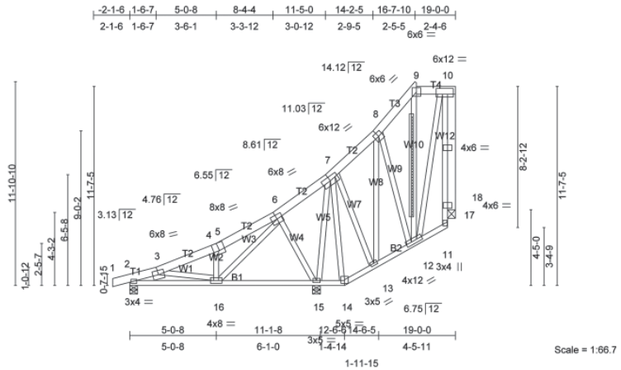
The owners of this 20,000 sq. ft. home in Cherry Hills Village, CO specified many complicated features, which meant a complicated roof line to match. Schernecke, a residential structural engineer with John Arthur Consulting, Inc., met with a team of building professionals early in 2006 to discuss the project. The original plans called for the majority of the home to be stick-framed—about 80 percent. During the routine meeting, Schernecke convinced the group that it would be economical to truss more than half of the roof structure. "I've had dealings with the contractor and framer for several years, so I felt comfortable suggesting that it would be a lot more economical to truss than stick-frame," he said.

Among the unique truss profiles, the home contains tail-bearing room-in-attic trusses, parallel chord trusses with two room-in-attic spaces for mechanical units, and in the kitchen.

Of the home's intricacies, a Keeping Room, proved to be the most complex. This 315 sq. ft. traditional room in the rear of the home had an inner vaulted radius in a cone shape and the top chord with a radius slope. (See inset box.) Schernecke noted that John Bondarewicz (Bond General Contractors) and framer Gordon May were quite

What Is a Keeping Room?

Early Colonial houses had few rooms. The most versatile room was called a Keeping Room, where daily household activities were conducted. Since they held the fireplace—often the only source of heat—the family cooked and bathed in these rooms. Modern Keeping Rooms are less functional than their predecessors, serving as decorative sitting spaces. Keeping Rooms still house working fireplaces.



skeptical about being able to truss the roof above the Keeping Room. "That is, until I offered to design and build a full-size sample truss," Schernecke says. (See sample truss design drawing above.)

The prototype was enough to convince Bond that the Keeping Room should be trussed. May said when the group saw the sample, they had the idea for Schernecke to make the top chords out of 2x6s (instead of 2x4s) to achieve a true radius.

Allowing the general and framing contractors to physically see and touch the proposed design solution prior to committing to the project gave them the confidence that trusses were the right solution to their problem, Schernecke said. "Within 30 minutes of the contractor receiving the sample truss," he says, "we had the green light to proceed with the project."

It's All in the Details

Photo 1

Schernecke got to work designing the trusses for the Keeping Room. This was his first job that featured a radius in plan, an inner radius that is vaulted in a cone shape with the top chord having a radius slope. This area consists of two concentric circles on plan; the inner radius is 9'10 and the outer radius is 21' (see photo 1). The inner radius is vaulted in a conical fashion and the outer portion is flat. The roof has a 31' radius that is tangent to the 16/12 pitch at the top portion of the trusses. The trusses are piggy-backed due to height. The base trusses are segmented with seven different pitches and top chord oversized (see photo 2 on page 34). The framing contractor field trimmed the trusses to achieve the 31' radius.

In his design, Schernecke also incorporated a compression web bracing product since bracing the webs after installation was not possible. The Keeping Room's

Continued on page 34

Photo 2

"Keeping Room" Showcases Unique Truss Design

Continued from page 33

vaulted 6.75/12 pitch conical ceiling also cuts into the kitchen's vaulted 12/12 pitch ceiling, further complicating the design process, Schernecke remembers. With tools ranging from truss design software, AutoCAD LT, and Schernecke's handheld trigonometry calculator, he completed the design of the Keeping Room in due time with optimal accuracy. "Just to be sure it would work—which, according to the framer, it did very well," he says. May said it went together very well, thanks to a well-thought out plan and careful execution of the sequences. "It's definitely not something you see every day," he said.

The trusses were manufactured by Sterling Component Systems under the supervision of production manager Josh Clift and foreman Dave Hummel. Clift helped Schernecke build the prototype early on. "This was the first time I'd ever shipped out a sample," he said. Hummel said he was confident that his crew could build the unique trusses with precision. "Our cutting department and crew pay close attention to quality, so I wasn't worried about how the project would turn out."

In the end, Schernecke was able to design trusses into two-thirds of the home. Local building height restrictions, ceiling profiles and building geometry required that about one-third of the roof remain conventionally framed.

Schernecke says his previous experience designing complex custom homes gave him the confidence he needed to complete the Cherry Hills Village behemoth. "This was a very exciting challenge for me. I was fortunate to have many past jobs to fall back on," he says. And he thanks the team of contractors for giving him a shot: "There's no limit to what you can do with trusses. I'm glad to have been able to prove it to them." SBC

Steve Schernecke is a Colorado Truss Manufacturer's Association (CTMA) Board Member. Photos provided by Alisha M. Brown, Golden Dreams Photography.

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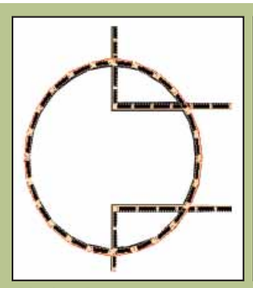
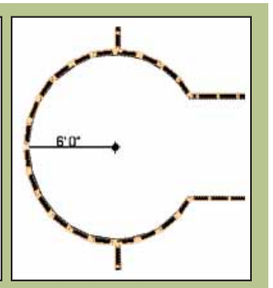
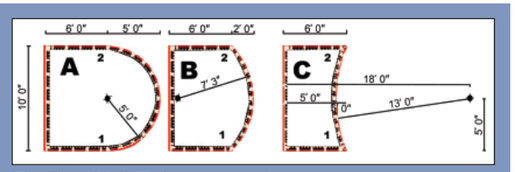


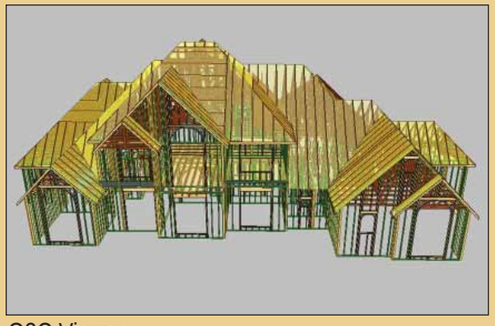
Circle: Step 1



Circle: Step 2



Radius Wall Enhancements



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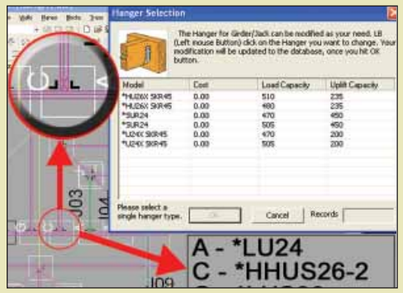

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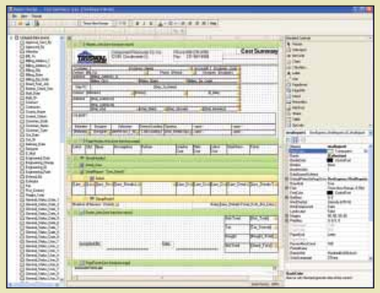

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Component Manufacturers Weigh in on Whole House Design Software

by Libby Maurer & Kirk Grundahl, P.E.

The discussion about this cutting edge software technology continues.

The next piece of technology with the potential to revolutionize the industry won't have a blade or machine guards. It could increase your liability, but also your bottom line. And, its inventors are saying it has tremendous potential to bolster the marketability of all structural components and related engineered products to builders and general contractors.

While it's anyone's guess when the first fully integrated whole house design software package/suite will be released to the marketplace, it seems that component manufacturers (CMs) are ready. SBC One Minute Poll results indicate that the majority of component manufacturers are looking forward to the day when one software program and one designer is all that is required to complete the design of a structure. We asked CMs whether their companies have considered expanding their design services to undertake more structural element design, and **74 percent** of you indicated you have.

So the vast majority of you have WHD on your radar screens, but not everyone has the same ideas about what this new technology will mean for your businesses. In fact, the range of feedback we received reflects an ongoing industry-wide exchange that is timely, healthy and critical to our evolution, growth and sustainability. So join this discussion; read on for an inventory of component manufacturers' most pressing questions and find out where you fall in this conversation. (Names have been omitted to preserve anonymity.)

at a glance

- ❑ Component manufacturers don't all share the same definition of whole house design software.
- ❑ As we move closer to fully integrated WHD software, component manufacturers wonder if it will make them more efficient, if they will get paid for their work, and if it will increase their liability.
- ❑ The best economic framing solution will likely inform the evolution of the industry.

Question: How Do You Define WHD Software?

This question has been at the crux of this discussion for many years, so once again, we asked how you would define the capabilities of WHD software. The majority of respondents—**32 percent**—said their impression is that the user will input the loads; and the software will design and optimize all structural elements and diaphragms to resist all the loads. About one-quarter of you (**23 percent**) feel that WHD will require the user to input the loads, while the software does the design of the individual roof elements; flows those loads onto the support structural below them; designs the headers, beams, walls elements; flows those loads onto the floor elements; and designs the individual floor elements. **26 percent** feel that WHD will perform one or both of the functions described above, but also has the functionality to complete construction drawings, perform material take-offs, and import all this directly into a third party CAD program. Another **19 percent** admitted they haven't thought much about what this software might entail.

While it seems that most of us understand that this technology will ultimately allow us to undertake more of the design process *more* efficiently than we currently do, we still don't share a common definition of how *much more* we can expect. The answer to this question lies in the level of sophistication written into the various software versions. We do know that your perceptions about what WHD can and will do are, in fact, where the software is headed. As these products develop and get used in the market both in full release versions and through the beta process, we will continue to learn more about just how closely our perceptions match reality.

Question: Will We Have Increased Control over Building Design?

Many of you are looking forward to the added control you will gain when you have the ability to design the whole house. Some of you pointed out that WHD software will allow your companies to become more involved in the overall construction process.

Some noted that the more control they have, the greater the overall market share of components you will be able to capture in your markets. And many of you are excited to be able to offer more to your customers. One manufacturer said WHD will enable component manufacturers to "effectively spec out and provide beams, shear walls and other components they previously could not."

In theory, a fully integrated software product that designs and optimizes all structural elements (roof, walls and floor) and maps the flow of loads down to the foundation will give manufacturers the opportunity to expand their roles. But the extent to which they expand will ultimately depend on the software capabilities and where in the evolution process component manufacturers begin this journey. For instance, will the software allow the user to carry out more than just the design and engineering of all the individual components that make up the structure? Will we design shear walls, diaphragms, load transfer through multiple members, and architectural effects?

Question: Will We Be More Efficient?

Many of you commented that the presence of WHD software will increase your efficiency and reduce the occurrence of errors within the design process. Comments like "[WHD] will assist in providing uniformity in design and assist in alleviating errors" and "should help reduce the need for multiple designers" suggest that component manufacturers are optimistic that moving to a single source software solution will provide a streamlining effect.

Greater efficiency and a decrease in redundancy may turn out to be the case with respect to the specific design functions of the business. The real question here then turns to the internal processing of plans and how does WHD fit current technical/design operations? What changes will need to be made to in the way that you undertake your design process to get the more productivity improvements from WHD.

It remains to be seen how the changes necessary to move to a full WHD business model will make the overall construction process more efficient. This will ultimately be determined by component manufacturers' relationships with their marketplace and the demands that their customers place on everyone for change. Included in this mix is how we will interact with architects and engineers. It is yet unclear as to how this process will evolve. And finally, framers still have a very large influence on how much forward progress gets made in the building business. They could either find advantages inside the use of WHD software or put up barriers to its use.

Question: Will We Get Paid?

While most of you see this as huge opportunity to capitalize on a new revenue stream, a good number are wary of whether you will be sufficiently compensated for assuming a bigger role in building design. One person said, "[WHD] will be a very positive move for our industry as long as we remember that we need to charge for this service and not 'include' it," which is something that component manufacturers will have to take a hard look at as they choose to move to a whole house business model. A few also talked about the additional liability they may assume: "Whole house design may increase profitability if we can get paid for taking on the liability." We need to ask ourselves whether architects and builders build the homes they want today without using component engineering and manufacturing. The answer to this question will help us address whether or not we are getting all the value out of the unique technology that we bring to the construction process today. Furthermore, we will need to seriously consider how to get all the value we can from future WHD technology.

Conclusion

While we're not sure exactly when all the various elements of the complete WHD software's potential will come together, it does seem certain that whole house design software will become increasingly available in the near future. When it happens, the foregoing will be just the beginning of the questions that we all will need to address. Rest assured that this topic is with us for a long time. Our best course of action is to continue to discuss these critical questions as WHD within our industry evolves. SBC

Business Considerations & Whole House Design

Due to an increase in the "one-stop shop" trend on the part of builders and general contractors, component manufacturers are now selling things like headers, connectors, and miscellaneous framing lumber—in addition to wall panels or wall framing lumber, roofs and floors—in packages. The goal of WHD is to allow a component manufacturer, with the help of an aligned structural engineer, to take a holistic view of engineering the structure. This results in truss designs that are compatible with header, girder, wall and floor below designs where the goal for the structure is to incorporate the most efficient framing techniques possible into the design of each of these components. The entire process of design, manufacturing, delivery, handling and installation accounts for ease of application on the jobsite. This even includes all the miscellaneous framing lumber and other "accessories" needed by the framing crew to progress through the construction process without delay.

Done properly, WHD's goal would be to optimize the engineering for each structural component, connection and installation detail, thereby encouraging everyone in the construction process to figure out how to be most efficient. This ultimately should lead to the best economic framing solution for each construction project.

The following concepts/challenges are being driven by a marketplace looking for solutions to the construction issues at hand:

- Builders absolutely want to turn the land they develop as quickly as they can. This provides them with a greater return on dollars they invest. Therefore, efficiently designing and framing of houses they build and sell becomes an important aspect of their business strategy. The challenge to design and frame quickly and efficiently ultimately leads to increased pressure on suppliers with respect to building design, material supply and installation.
- The challenge revolves around integrating our industry's truss and structural element design work into the building design process.
- For component manufacturers, the key is predicting the impact of taking on more of the design and framing work given the manufacturer's traditional role of component design and manufacturing and delivery to the jobsite.
- The current industry business models are a highly fragmented combination of the following independent businesses: component manufacturers, lumber dealers, truss designers, building designers, framers/installers, builders/general contractors and developers.
- In the market today, there is also a continual push to eliminate steps in the distribution process or to consolidate to improve profitability. Therefore, it seems inevitable that a good percentage of construction will eventually integrate component design with building design.

The best predictor of a how an industry will evolve is usually simple economics. The driver of this change will be what business structure or combination of businesses will provide the best and most economical structural framing solution. WHD could very well facilitate an evolution of the traditional model to one that is more streamlined and involves greater coordination among component manufacturers, truss designers, building designers and framers. These market-based solutions could run a gamut that includes the following:

- Component manufacturers/suppliers, truss designers, building designers, and framing crews creating loosely formed alliances.
- Component manufacturers/suppliers, truss designers, building designers, and framing crews creating formal alliances or joint ventures.
- Component manufacturers/suppliers, truss designers, building designers, and framing crews creating new consolidated companies.
- Builder/Developers buying component manufacturers/suppliers, truss designers, building designers, and framing crews, etc.

Each of these scenarios provides the "one-stop shop" that the builder owner/developer desires to have.

If one believes that the aforementioned concepts describe the optimum economic and business model, then it is only a matter of time that this approach to the construction business will become the norm. The market and economics are usually pretty unemotional and efficient about determining what the best and most competitive business solution will be.

Given this, the key question is: How will the vision your team has for your business fit into the optimum economic and business model in the near and long term? This is not an all or nothing question—it is probably a game of inches of consistent persistent forward progress. SBC

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SBC RESEARCH INSTITUTE™

One Step Closer to World Class

by Kirk Grundahl, Keith Hershey & *SBC* Staff

We are happy to report that construction is progressing at a steady pace on our 5,730 square-foot industry testing facility. By the time you read this, the Structural Building Components Research Institute (SBCRI) facility will be very near completion. SBCRI will be home to critical testing projects that examine the structural integrity and cost efficiency of buildings. The new data obtained will advance the industry by developing a fresh body of knowledge to lead the next generation of industry growth.

Part 1: Q&A

As you can imagine we have been asked a wide variety of questions concerning SBCRI. What follows are the most frequently asked questions that we have received over the last several months.

Why is WTCA investing in a testing facility?

As building codes, engineering and design programs, and construction materials become more sophisticated, the prescriptive methods that have been used successfully over the years are being questioned, and in some cases replaced. It is clear from the meetings held and the information exchanged among industry professionals that there is still much to understand. With better knowledge of actual performance of the entire integrated structure, many fundamental improvements can be made.

Our research facility will have the capability to test complete structural framed systems. Here are some examples of our testing scope (see Figures 1 and 2):

- Our standard widths can range from 4’ to 18’. Our standard heights can range from a 10-inch floor system to a 20-foot high series of floors, walls and a roof. Our standard length can range from 4’ to 90’ long.
- Our initial calibration test structure will be a 16-foot wide x 30-foot long 8-foot wall and roof truss assembly.
- Our 40’ x 90’ strong floor will provide us a great deal of testing flexibility:
  - We can build a two-story structure inside our facility and test it.
  - We can place undulations on our floor system and simulate the actual lateral and vertical displacements that take place during an earthquake.
  - The maximum area available for testing is 30 feet wide x 32 feet high x 90 feet long. However the actual size we will be able to test will depend on the type of product and the testing procedure that is required.

at a glance

- ❑ The SBCRI will have the capacity to hold a 30 foot x 40 foot two-story structure for testing purposes.
- ❑ The maximum size structure we can test is 30 feet wide x 32 feet high x 90 feet long.
- ❑ A survey on testing topics yielded 464 member responses that provided very important feedback.
- ❑ The Truss Plate Institute entered a joint venture with WTCA that will yield TPI/WTCA test plans, data and a testing budget of $500,000 for 2007.

Figure 1.

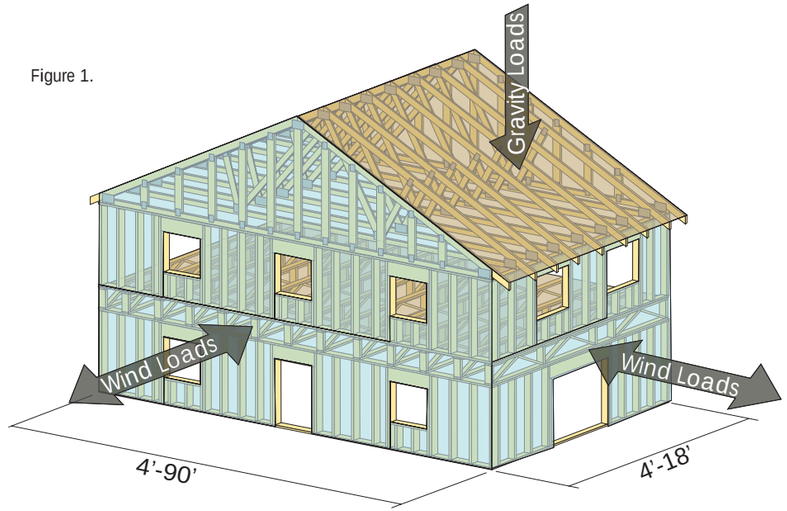
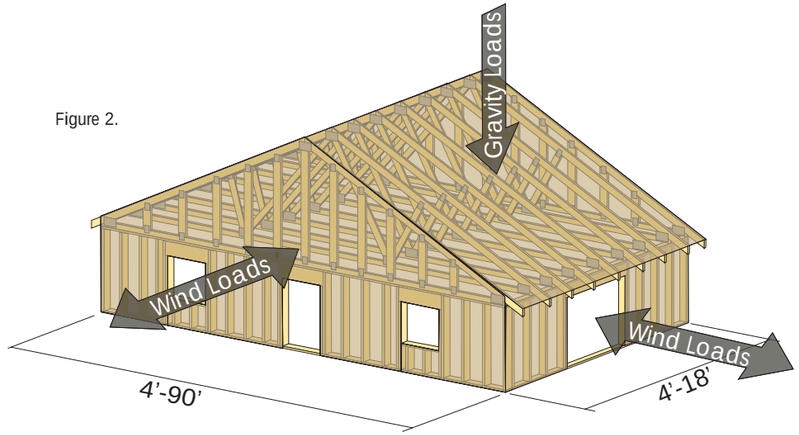


Figure 2.



In all the testing combinations we will be able to apply loads simultaneously in vertical (gravity and uplift and cyclical) and horizontal planes (parallel and perpendicular to roof framing and cyclical).

We have also designed the controls of the loading actuators to be as universal as possible and haven’t limited ourselves by focusing on a single testing method. The facility will have the ability to test most types of construction materials and will allow us the flexibility to change with technology as new products come into our market.

By taking the initiative to build a testing facility, the WTCA Board of Directors has chosen to lead our industry forward through testing and technological improvements. We are certain that we’ll find a variety of new ways to optimize component usage in the construction process. There is also a possibility that we will isolate a few cases in which the structural analysis or performance was inaccurate the first time we looked at it.

As a member of WTCA, how can I participate in the testing done by SBCRI?

As a member of WTCA you will have a voice in the types of testing this facility undertakes. All testing plans that we take on will be available for any member to review and provide perspective. In additional, any member can suggest a test plan that they would like to see us undertake. You may have already participated in a survey we earlier this year to gain a sense for what testing is important to our membership, which garnered 464 responses.

How will testing bring new business to the industry?

Through the continual testing of structural components, we will be able to build more confidence with those who specify and inspect our products, which can lead to more business for our industry. Having a world class facility that can test these products either as individual components or as part of very complex structural systems and being able to provide a detailed analysis of performance will quickly help build confidence. This is particularly important in today’s regulatory environment where proving performance in real terms carries a great deal of weight.

Will testing reduce my material costs?

Having the capability of analyzing structural components as systems will give us a better understanding of the flow of loads through all the interconnected parts of a building. In turn, this will allow us to optimize the resistance of those loads while providing safe structural performance. There are a great many complexities that will affect optimization, with the most important being the factor of safety. This will lead us to find some situations that are ripe for cost savings and some that will require added costs.

How will testing help our design software?

As software development continues to progress toward “whole house design,” the testing capabilities of the SBCRI will provide sound empirical data that can be used to provide new resistance data and calibration information to improve the accuracy of these current design programs.

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Summary of Results from SBCRI Testing Poll

	Component Manufacturers	CFSC Members	TPI Companies	Suppliers -- Engineers	Suppliers -- Lumber
1	Bearing -- Determine how far an interior bearing can miss a vertical web and still be considered as a bearing point without any structural performance issues.	Ultimate truss capacity tested as compared to ultimate design capacity.	Bearing -- Top chord bearing capacities with the addition of truss plates added strategically at bearing locations.	Gable end details, lateral resistance, bracing, optimization.	Flow of loads -- Lateral capacity of trusses (esp. CFS) to transfer shear forces from the roof and ceiling diaphragm to the bearing plate.
2	Bearing -- Top chord bearing capacities with the addition of truss plates added strategically at bearing locations.	Attic truss performance and analysis	Flow of loads -- Test a variety of heel analogs and how the moment is being transferred through different heel conditions.	Girder -- A multi-ply floor truss girder - determine load sharing capacity and recommendations for attaching plies together	Finger jointed lumber testing and how finger joints perform when used in tension and compression members in trusses.
3	Girder -- A multi-ply floor truss girder - determine load sharing capacity and recommendations for attaching plies together	Tail bearing capacities for roof trusses	Girder -- A multi-ply floor truss girder - determine load sharing capacity and recommendations for attaching plies together	Flow of loads -- Lateral capacity of trusses (esp. CFS) to transfer shear forces from the roof and ceiling diaphragm to the bearing plate.	Initial testing -- An initial set of experiments on a run of trusses, preferably from several different component manufacturers who will supply multiple copies of the same truss, built to the same specifications. Then test the individual trusses and the trusses together as a system to see if there were performance differences based on the manufacturer.
4	Repair -- Test various types of repairs to broken webs and chords	Bearing -- Determine how far an interior bearing can miss a vertical web and still be considered as a bearing point without any structural performance issues.	Bearing -- Top chord bearing capacities for floor trusses.	Floor vibration and deflection for various floor systems.	Fire -- Comparative fire performance of various structural building component systems
5	Girder -- determine the max. number of plies that girders can reasonably use and the flow of loads to each girder ply and flow of loads to the connections.	System testing -- Roof system reaction to wind loads.	Bearing -- Top chord bearing truss chord/web member joint load limits.	Flow of loads -- Permanent bracing and how the loads flow from truss to truss through lateral restraint members and into diagonal braces. Evaluate BCSI permanent bracing and optimal bracing needed.	Fire -- Fire performance of unprotected trusses.
6	Bearing -- Top chord bearing capacities for floor trusses.	Bearing -- Evaluate bearing capacity and top plate/chord crushing at the bearing.	Flow of loads -- Joint Stiffness -- amount of resistance provided by a metal plate connected joint that is forced to displace a unit amount. Rotational joint stiffness will strongly influence truss performance. Evaluate pinned, semi-rigid and rigid and the effect on flow of loads.	Bearing -- Determine how far an interior bearing can miss a vertical web and still be considered as a bearing point without any structural performance issues.	Ultimate truss capacity tested as compared to ultimate design capacity.
7	Bearing -- Top chord bearing truss chord/web member joint load limits.	Wind loading conditions -- uplift and variable wind pressure loading on the performance of trusses. Determine the limits on uplift failure. What can we learn when we test the system versus testing single trusses?	Flow of Loads -- Obtain data from all trusses tested for use as truss calibration data. Collect the following data at selected locations for a given loading -- Chord forces (including moments). Web forces (including moments). Deflections. Reactions.	Lumber -- Trusses with finger jointed lumber, if it passed we could save huge amounts of material.	Fire -- Truss performance protected.

Summary of Results from SBCRI Testing Poll, continued

	Component Manufacturers	CFSC Members	TPI Companies	Suppliers -- Engineers	Suppliers -- Lumber
8	Wind loading conditions -- uplift and variable wind pressure loading on the performance of trusses. Determine the limits on uplift failure. What can we learn when we test the system versus testing single trusses?	Uplift resistance of overhangs. What is the capacity of overhangs and how does it influence the performance of other members of the truss?	Heel joints -- Performance of raised heel trusses w/ wedges.	System testing -- Shear at the roof truss to wall plate line	Quality -- Evaluate various quality characteristics and their affect on the truss performance.
9	Quality -- Test trusses with a missing a plate at a joint on one side.	Girder -- A multi-ply floor truss girder - determine load sharing capacity and recommendations for attaching plies together	Girder -- Connections shall be designed to transmit load from ply to ply in accordance with the ply-to-ply load distribution assumed in the design of the girder. Connections shall be adequate to carry the cumulative load of the remaining plies. Evaluate the flow of loads from ply to ply, through the connections and at concentrated loads.	System testing -- Roof system reaction to wind loads.	Fire -- Hanger connection performance under fire conditions.
10	Tail bearing capacities for roof trusses	Repair -- Test various types of repairs to damaged webs and chords.	Performance of various types of girder heel conditions.	Girder -- Connections shall be designed to transmit load from ply to ply in accordance with the ply-to-ply load distribution assumed in the design of the girder. Connections shall be adequate to carry the cumulative load of the remaining plies. Evaluate the flow of loads from ply to ply, through the connections and at concentrated loads.	System testing -- Roof system reaction to wind loads.

SBC Research Institute...

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Will it help us manufacture a better quality product?

Information obtained from sound and accurate testing will lead to a more efficient design, installation and use of all structural building components. Whether we are talking about a toe nail verses a hold down anchor, a simple single truss/joist/header capacity, top chord temporary bracing, the flow of loads within a multi-ply girder, capacities of various wall sheathing types, or capacities of roof and wall diaphragms, we will be able define the capabilities of our products and the methods in which they are installed.

Will it help challenge today's codes?

Due to the nature of the building code development and approval process, private and industry interests can and do have a major influence in how all codes are written and applied. By testing building components in a system environment, we will be able to provide proven information and analysis to the code development community that will help us advance the building code process in a very rational and effective way.

The advantage to our industry having its own facility is that our testing will be geared toward improving the design, application and use of all structural building components in the context of the overall construction process.

Will SBCRI be available to undertake proprietary testing for a member if I have a great idea that I would like to try out?

Absolutely. SBCRI has a structure in place that will allow anyone to use the testing facility with complete confidentially to independently evaluate any type of innovative product, system or construction method.

Part 2: Summary of Results from SBCRI Testing Poll

On January 4, 2007, we sent out to our entire membership a very important survey in advance of the joint TPI/WTCA staff 2007 planning meeting to use in developing our industry testing plan for the year. We asked you to rate 95 testing topic on a scale from 1 to 10. The response was tremendous—464 members commented—providing us with the important feed

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For additional photos, visit the SBCRI photo gallery at www.sbcindustry.com/testingphotogallery.php.

SBC Research Institute...

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back necessary to ensure we undertake the testing that will address the technical issues that our members face every day. The table on pages 46-47 outlines the top ten test topics based on the survey results, broken down by member type.

Our goal with the initial testing equipment assembly and series of testing plans is to perform as many tests as possible. We should be able to undertake flow of loads through bracing, a series of tests on girder trusses, a variety of bearing conditions and the effect of truss quality in the early stages of the testing program.

To that end, we are very pleased that TPI has agreed to participate with us in the creation of a joint activity that will yield TPI/WTCA test plans and data. Together we are committed to providing a 2007 testing budget of up to $500,000. Through 2011 we have commitments to undertake at least up to $300,000 of industry testing annually. This provides us with a solid foundation to build our test facility and industry knowledge.

Furthermore, TPI and WTCA will be 50/50 joint venture partners in all the industry testing that we undertake. We are going to develop this into a formal association business activity based on the following concepts:

- Exact funding will be determined annually for the following calendar year based on projected testing projects and related costs.
- Industry testing results will always be shared between WTCA and TPI and are the property of both TPI and WTCA.
- A TPI/WTCA industry testing report will be made at each TPI Board/WTCA meeting.
- Industry test reporting and updates will also take place at the WTCA Open Quarterly Committee Meetings.
- TPI/WTCA testing that is undertaken at the SBCRI facility will include:
  - TPI proposed industry tests.
  - WTCA proposed industry tests.
  - Joint WTCA & TPI proposed industry tests.
- Industry testing proposed by any member of either association for inclusion in our testing work may be individual member funded, jointly funded or funded from our industry testing budget depending on the nature of the testing proposal .
- Each testing project will have:
  - A proposed testing budget.
  - Detailed project plan including:
    - Description of Testing Objectives/Problem Statement
    - Description of Testing Outcome Desired
    - Description of Testing Approach
    - Description of Test Assembly
    - Description of Materials Needed
    - Defined Testing Costs
    - Description of Testing Project Timeline
    - Defined Funding
    - Any other Testing Project Issues/Needs
- An oversight Board or industry testing Steering Committee is in the process of being implemented consisting of:
  - 1 member of TPI TAC
  - 1 member of the TPI Board
  - 1 member of WTCA E&T Committee
  - 1 member of the WTCA Executive Committee
  - A TPI staff member
  - A WTCA staff member

  This group will review all individual test plans, budgets, and timelines to ensure that no details are missed prior to undertaking the testing program.
- Final draft test plan(s) will also be sent out to TPI TAC and WTCA E&T for comment and perspective and will be reviewed by the TPI and WTCA Board of Directors as they are created and at each joint TPI/WTCA meeting.
- Industry testing will be performed at SBCRI's direct cost of operations to ensure that our industry gets the greatest possible value from each dollar invested in testing.

This is an extremely positive industry outcome. We all are looking forward to focusing on testing and gaining the benefit of testing data that will provide our industry with incredible value in now and well into the future. SBC

The Dawn of a New Age for the Structural Building Components Industry

Construction is progressing at a steady pace on WTCA's SBC Research Institute, the structural building component industry's research and testing facility in Madison, WI. The 5,730 square-foot facility is scheduled to officially open later this year and advance the industry's goal of developing a fresh body of knowledge that will add new value to the industry and lead the next generation of growth.

The SBC Research Institute will give the industry the ability to test:

- Individual components from 8' to 90' long
- Component systems from 8' to 90' long, 2' to 20' wide, and up to 20' high
- Loading applied in 3 axes simultaneously, to simulate both construction and environmental loads
- Standard design and drag or shear loads on a single component
- Standard design loads on a component system
- Drag and shear loads on a component system both parallel and perpendicular to the components
- Unbalanced and bidirectional wind loads
- Simulated wind uplift loads
- Cyclic loading at application points from the foundation to the peak of the roof

Thank you to our SBC Research Institute sponsors for helping foster this new age for the industry.

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automated jigging

by Jerry Koskovich, P.E.

The solution to the most common shop bottleneck is revealed.

Over the decades since nail plate connected wood truss manufacturing first became an industry, we've seen steady and persistent improvement in virtually every facet of the truss manufacturing process. In my own experience, I saw my first connector plate truss while working as a plan check engineer in Los Angeles County in 1964.

Designs had been submitted to our office for trusses to be installed on a single family residence in the region. The design submitted included a multitude of pages of handwritten calculations. I checked each and every member using my Post Versalog slide rule, which I might add, I still have. Forgive me for dating myself (I'll be 70 this fall).

Since we hadn't seen such trusses before, myself and another engineer from our office made a trip out to the fabricator, which was a large lumber yard. I confess not remembering how the plates were pressed (most likely by roller), but I do recall that the components were cut on a radial arm saw.

Many truss plant owners and managers don't really have a good idea of how long it takes to do the average truss table setup by hand. They know it's time-consuming, but to be honest, would likely be shocked if they stood there watching some of the setups from start to finish.

Leap forward about five or six years and I was again working in a government building and safety department and I began seeing printed designs giving all of the specifications of the truss. If you were to cruise through the office of a truss company at that time, you'd see loose leaf binders that included virtually all the truss designs prevalent during that period. Those designs or "catalog designs" were what we refer to today as "common" trusses. As we all know today, common trusses are uncommon!

Before the advent of the computer, the means to produce such trusses were, for the most part, adequate for the task at hand. Manually operated component saws did perhaps 25 setups per shift, sometimes cutting hundreds of pieces per setup.

Building the trusses was truly more of the same. You laid out the truss with tape and a chalk line, then bolted, locked, or nailed the fixtures in place, and proceeded to build a few dozen, sometimes hundreds, of identical trusses. I remember at least one of the major equipment manufacturers built an automated pedestal press to accommodate the tremendous demand for common trusses. The pedestals had hydraulic presses built in. After the truss was pressed, the heads retracted to eject the truss automatically.

I also remember a truss plant here in Minnesota that made the claim of building a thousand trusses during a single shift. Some major fabricators attached to retail outlets still use these systems for their "common" trusses.

Sometime during the mid to late '70s (if memory serves me correctly), the computer began having an effect on the industry. By the early to mid '80s, it was having a major effect, namely the designs were becoming ever more varied and complicated and the manual saws spent more time in setup than they did actually cutting components.

at a glance

- When automated component saws became widely used in the '90s, truss tables became the new shop bottleneck.
- Laser projection systems and automated jigging systems offer two solutions to this bottleneck.

It was during this period of time that the machine tool industry was going through its conversion to automation. And there's a big lesson in that conversion for all of us. A number of machine tool companies resisted automation, some hesitated. Those companies that paid the price to automate—and it does come with some measure of upset, not just direct equipment costs—prospered at the expense of the others who didn't automate. Even those that hesitated, figuring they'd catch up later, I suppose, often found their business being taken away by those with the automated upper hand. The automated machine tool companies have since found that they can accommodate business spikes—both up and down—with a lot less impact on their work force and their margins. Non-automated machine tool companies of any size really don't exist anymore.

By the mid '80s our industry's first automated component saw was cutting its teeth, so to speak. While its acceptance was moving forward at a snail's pace, it likewise was beginning to have an impact on some plants. The first of those was Villaume Industries in the Twin Cities in 1985. They were the first company in the industry to successfully incorporate an automated saw into their production system. What they found during that first year of operation was the ability to more than keep up with the demand for cut components. It was a first...prior to that cutting was the major bottleneck. In late '87 they asked me when I was going to do something about automated jigging.

In 1988 at the BCMC Show in Nashville, the industry got its first look at a functioning automated saw and an automated jigging system. The industry would never be the same!

During the '90s, acceptance of automated component saws grew exponentially. The introduction of competitive saws by the major nail plate companies promoted the use of these evermore sophisticated saws. In the early years of such saws, 20- to 30-second setups, while doing perhaps 300 to 400 setups per shift, was considered quite good. Today some saws have the ability to average 800 and 900 setups per shift with setup times ranging from three to eight seconds on average.

Since the early years of this decade, the industry has become familiar with linear feed saws. They've provided a different approach to cutting that better lends itself to "just in time" truss manufacturing. All said, cutting will not likely be a bottleneck in plants that have automated saws. Amazingly, these plants have significantly increased their production of cut components with no increase in manpower—exactly what automation is all about. While these automated saws are costly, their payback is dramatic!

Continued on page 52

to catch up with the technology that has for some time been available. New entrants in the automated puck positioning game have also helped bring attention to this valuable tool. Variations on the original jigging systems have caught the eye of savvy plant owners and managers, and the number of users is increasing at astounding rates.

The new systems claim little or no extraneous jigging is necessary for most any truss configuration. What does this mean to the production manager? Let's spend a few paragraphs thinking about it.

Many truss plant owners and managers don't really have a good idea of how long it takes to do the average truss table setup by hand. They know it's time-consuming, but to be honest, would likely be shocked if they stood there watching some of the setups from start to finish.

On two different occasions back in the late '80s and early '90s, I had opportunity to videotape the setup process at several plants for viewing later by the plant owners. In one instance, the owner, after watching the snail's pace of the process, jokingly threatened to fire the crew that was doing the setup.

In the other case, the owner came in on a Saturday to view the tape of several setups that had taken place at his plant the day before. After ten minutes of watching paint dry, we shut off the video and he ordered the first automated jigging system we sold in this country. The year was 1992.

In studies that I did in earlier times, one could assume that the more simplistic truss (i.e., the common truss of moderate span), could typically be set up in around twenty minutes. With the more complicated trusses, the sky was the limit. It wasn't uncommon to spend an hour or more. Worst of all, you may only build one truss with that setup! It hasn't gotten any better.

With the automated setup systems, the pucks will typically move into position within about 30 seconds on average, sometimes less, and seldom more. With the newer systems, pucks are more typically spaced along the length of the table at about two feet on center, thereby minimizing the need for most manual jigging. That being the case, it's likely that your builders can be placing components on the table within

Automated Jigging

Continued from page 51

They have, however, amplified a formerly lingering problem... truss tables can't keep up with the production of components being generated by the saws. Automated cutting has shifted the bottleneck! In the past fifteen years, while a small percentage of plants have taken advantage of automated jigging from the start, the vast majority have not.

As with automated saws, automated jigging systems were slow to catch on. During the mid '90s, another approach was brought forth...the laser projection system. While it moved no automated pucks into position to define the perimeter of the truss, it did provide an outline for positioning manual jigging and offered the ability to precisely locate the nail plates on one side of the truss. For several years the laser was perhaps more popular than automated jigging systems then available. However, it would appear, from my view at least, that the industry is beginning to recognize the value of these puck positioning systems.

During the past two years, the industry has suddenly begun

a matter of no more than a minute or two. On most systems and truss types, you'll likely be ejecting the first truss within five minutes or less.

I'm aware of a plant with an automated jigging system that only used the system to build runs of three or less. They averaged 1.8 trusses per setup. The best of their three workstations on that automated table system averaged a little over eight minutes from start to finish to build the average 1.8 trusses (less than two). The worst did it in about 13 minutes...still not bad when you consider that the simplest of manual setups takes around 20 minutes or more just to do the setup.

The result is that each of the different runs you do will probably save at least 15 minutes (more likely, much more). If you currently do six to eight setups and runs per table or workstation per shift, it's likely you'll find yourself with perhaps two or more hours of unused time before you get to the end of the shift. While you've saved time and money on each of the aforementioned setups, the big pay-off really comes in that last two hours of free production time.

Stop and think about it. It's like getting a free day of production every four days! Assuming you're making money on your product, the profit from that extra production is truly "money in the bank"! The more shifts, the more money... especially if you eliminate entire shifts.

...an automated jigging system has the potential to pay for itself faster than an automated saw. The catch is... you need them both...otherwise you're just shifting your bottleneck!

A single automated jigging system can impact your whole operation even if you have tables that aren't automated. Since a single truss can be produced in such a short time, use the automated system as a pattern maker for the manual tables. You'll save money on every setup and run you build throughout the plant, plus you'll have the bonus time mentioned above on every table.

Finally, the accuracy of the setup is almost certainly going to be better than doing it with a tape measure and chalk line, so problems in the field due to screwed up trusses should become a thing of the past.

I've said it for years in the past....and I may as well say it again...an automated jigging system has the potential to pay for itself faster than an automated saw. The catch is...you need them both...otherwise you're just shifting your bottleneck! SBC

Jerry Koskovich is President of The Koskovich Company in Rochester, MN.

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New Format, Fresh Topics, Successful Annual Workshop

March 21-23 • Sunset Station • Las Vegas, NV

With a new format and design, this year's Annual Workshop & Conference was better than ever!

by Emmy Thorson-Hanson & Melanie Birkeland

After going through many different iterations, the WTCA Annual Workshop & Conference has finally found a successful balance between location and format. On March 21-23, 2007, the new and improved event was held at the Sunset Station Hotel & Casino in Las Vegas, NV. Once known as "Chapter Summits" and the "Regional Workshop and Conference," it now takes place over three days once a year.

There were four session topics to choose from this year, each with a separate time-slot, along with time set aside for questions and answers and roundtable discussions. Jim Schumacher (Woodinville Lumber, Inc.) liked the format, which was different from past conferences: "The open discussion with group interaction was helpful." Michael Schmidt (MJ Insurance Inc.) agreed: "The conference provided an arena to share ideas and innovative solutions among component manufacturers."

> "The conference provided an arena to share ideas and innovative solutions among component manufacturers."

The first session kicked off on Wednesday afternoon with a respected industry veteran. Don Hershey, WTCA Past President and Director of Alliance TruTrus, LLC, shared his vast knowledge and experience during a session called "Business and Operations Management." Don discussed key business concepts, honing in on benchmarking as one of the cornerstones of managing a truss company. He talked about benchmarking from a holistic approach—from creation to implementation.

Chris Lambert (Southeastern Materials) gained a lot of from this session. "Benchmarking is so important because it lets you know where your company stands on performance-related issues," he said. As the session was winding down, the group worked through some individual and specific benchmarking concerns and discussed how it varies widely from operation to operation. Frank Klinger (Mid-Valley Truss & Door Co.) commented that the session gave him some good ideas to take home and implement at his plant.

"Human Resources and Marketing Management" was the topic for Thursday morning's session, and attendees got the opportunity to learn about incentive compensation from a favorite BCMC speaker, Joe Hikel, Chief Operating Officer of Shelter Systems Limited. One of the focal points of Joe's presentation was how to grow a business in a down market—something that many attendees could relate to. Hikel brought to light issues surrounding cost structure and strategies. He also touched on ways to retain and motivate employees. For the second part of his

Continued on page 58

at a glance

- The new WTCA Annual Workshop & Conference was held March 21-23, in Las Vegas.
- The new format included four sessions, covering fresh, new topics, with round-table discussions and time for questions and answers.
- One session was entirely devoted to steel truss manufacturing, which was a first for this event.
- Attendees agreed that the workshop is valuable regardless of where you think you're at with your business.

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"The topics covered were new and fresh....even if you've been to a lot of these meetings you walked away with new info and a lot of great ideas that you can use."

"Excellent forum! The steel framing industry needs more like it!"

New Format, Fresh Topics...

Continued from page 56

presentation, Joe turned to incentive compensation programs. Joe Odgers (Bama Truss & Components, Inc.) couldn't get enough: "Second time to see this presentation and I would sit through it a third." John W. Hickey (Trusco, Inc.) was another fan of the session. "Joe has helped everyone think outside our standard industry models and think about what our customers want," he commented.

Thursday afternoon was all about steel. For the first time at this event, an entire session was devoted to the topic of steel structural building components. And there is no one better to speak on the topic of steel than the enthusiastic Joe Odgers. Along with Joe, the session included an impressive group of panelists within the steel components industry. The panelists included Eddie Blair (Nucon Steel Commercial Corp), Tom Valvo (Aegis Metal Framing), Tim Warran (Stark Steel, a Division of Stark Truss Co.), Dave Dunbar, PE (ITW Building Components Group) and Roy Zeh (Dynatruss). The combination of the formal presentation that Joe put together and the expertise of the panel made this session one of the most interactive at this year's workshop. Joe McGuire (Universal Truss, Inc.) felt that the panel was very informative. Tom Valvo (Aegis Metal Framing, LLC) applauded Joe's comedic side: "Odgers was his normal entertaining self." Bruce Allen (Standard Builders) felt that "the best feature was the strength of the panel."

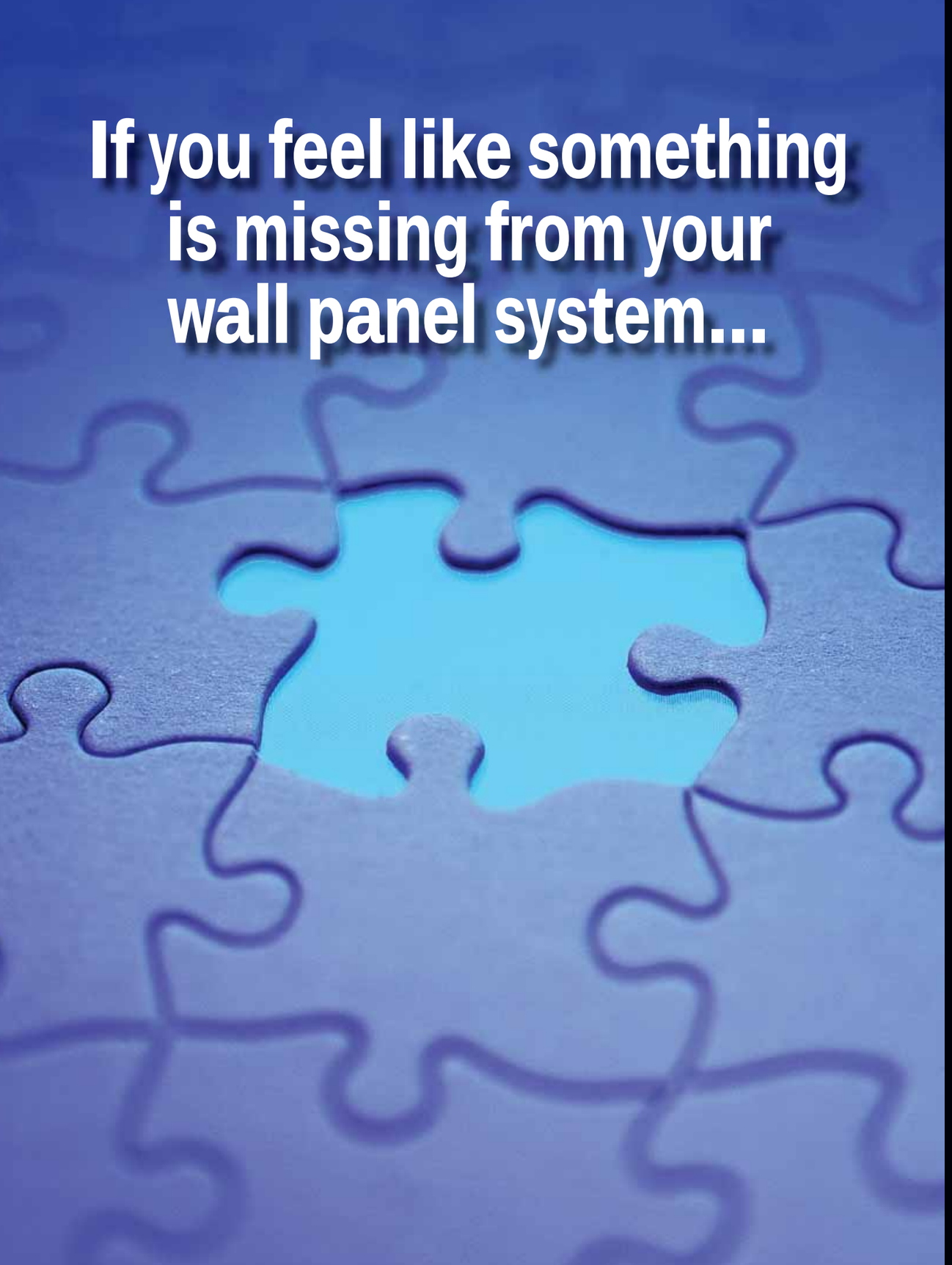
The dialogue created at this session between attendees, panelists and the speaker opened everyone up to the marketing potential of steel components. Don Allen (Steel Framing Alliance) was excited about the session. "Excellent forum! The steel framing industry needs more like it!" he remarked.

The last session, "Managing the Future of Technology and Marketing," took place on Friday morning. Kirk Grundahl (WTCA Executive Director) was the speaker, and the session followed an open forum format. The group discussion took many different directions as the attendees asked poignant and important technical questions. The group discussed a wide range of issues including: the 2006 codes, building design, branding/marketing, whole house software, the best business economics structure, bracing, testing and the new SBC Research Institute facility. Stuart A. Coles (Sun State Components NV) commented on the value of the session: "Always worthwhile and well presented. Kirk is a good speaker."

In the final part of the session, Kirk addressed the importance of proper bracing and best practices for installing trusses. He showed some jobsite pictures illustrating what can happen if proper bracing practices and techniques are not followed, which spawned much discussion. The attendees in this session—like all the other sessions, were just as important as the speaker. The group interaction was key in making this session a success!

"If you think you are doing well in the industry, come to the workshop and you will either reassure yourself or your eyes will be opened. Our industry is in good hands."

The new format of the event was a huge hit. Jack Dermer (American Truss Systems, Inc.) felt "the topics covered were new and fresh. A lot of new ideas and great info, even if you've been to a lot of these meetings you walked away with new info and a lot of great ideas that you can use." Bruce Allen issued a challenge to manufacturers who missed the conference: "If you think you are doing well in the industry, come to the workshop and you will either reassure yourself or your eyes will be opened. Our industry is in good hands." SBC



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Chapter Corner

For more information about WTCA Chapters and how to become more involved, contact Anna L. Stamm (608/310-6719 or astamm@qualtim.com) or Danielle Bothun (608/310-6735 or dbothun@qualtim.com). Contributions to Chapter Corner, including pictures, are encouraged. Submissions may be edited for grammar, length and clarity.

Chapter Spotlight

Update on the New Chapter in New Mexico

by Anna L. Stamm

In the November 2006 issue, we announced the formation of the Rio Grande Component Manufacturers Association. A few months and a few ballots later, we are pleased to announce the group is still on track to become the 33rd chapter, but its name will be the Component Manufacturers Association of the Rio Grande.

What's in a name? As anyone forming a chapter may have discovered, a little change in a name can make a big difference. The change here began with a filing issue in the State of Texas, and then it proceeded through a poll of all component manufacturers in Texas and New Mexico on whether the chapter should reference "Rio Grande" or the "Southwest." When the first ballot was inconclusive, a second was conducted among those individuals who have participated in the formation to date. Voilà! The Component Manufacturers Association of the Rio Grande, or CMARG, was given the green light in March to file its incorporation papers.

Importantly, with the name issue resolved, the chapter is able to pursue the meaty issues—especially educating the marketplace. Planning has begun on a series of building official seminars in New Mexico to be held in conjunction with the chapter's quarterly meetings.

So, if you are doing business in New Mexico or southwest Texas, be sure to check out CMARG. Its next meeting will be held on July 17, but you can contact WTCA anytime for more information. SBC

Chapter Highlights

California Engineered Structural Components Association

The Northern and Southern regions of the California Chapter held their winter meetings in March. First up was CalESCA–South in Riverside and the chapter's work on the Safety Zone for Off-Loading Components was high on the agenda. A few members will continue to beta test the new signage and a full report will be given at the next meeting. Eventually, a step-by-step approach will be written for drivers on how to use the safety zone signage for maximum positive safety benefits at jobsites.

A top issue at the CalESCA–North meeting was transportation. Chapter members are still encountering difficulties with the California Highway Patrol in regard to permits, and staff continues to assist in developing an action plan to resolve this intractable problem.

At both meetings, the discussion turned to the next statewide chapter meeting and a survey was distributed to select the date. In lieu of the separate meetings that had been scheduled in May, a statewide meeting will be held on Friday, May 11 in Las Vegas, NV. At that time, chapter members will be able to review the bylaws and formal structure of the multi-region chapter, ongoing educational efforts and plant tours, WTCA *Technical Notes* written for the California market, progress on the Safety Zone, involvement with local home builder associations and the new chapter website under development.

Representative Greiner, Senator Hancock and Representative Lukan (pictured left to right) were the special guests at ITMA's legislative meeting in March.

Iowa Truss Manufacturers Association

The Iowa Chapter's annual legislative meeting was held on March 26 with three special guests: State Senator Tom Hancock and State Representatives Sandra Greiner and Steve Lukan (see photo above). The issues discussed included: labor and right to work; affordable health care; labor and immigration; workers compensation; prevailing wage; state fire codes; and commercial property tax relief. It was noted that continuing educational opportunities with the Iowa Fire Service Training Bureau are due in large part to Senator Hancock's ongoing efforts. The group also discussed the possibility of having a chapter-sponsored breakfast at the Capital Building in Des Moines next February or March following bill filing and funnel deadline.

During the regular meeting, the WTCA update included news on the SBC Legislative Conference in Washington DC, ORisk, WTCA QC and the membership drive. To increase the chapter's involvement with the Home Builders Association, Mike Farr of Cascade Mfg was volunteered. Al Esch of Lumber Specialties was recommended to chair the chapter's efforts on plant tours.

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Chapter Corner

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Ray Noonan and Andy Green delivered the Education Committee report. "Fire Performance of Wood Trusses" workshops continue to be the focus for 2006/2007. Plans are underway to conduct a plant tour with the Fire Service Training Bureau later in the year; Al Esch is chairing this project. Representatives of the Iowa insurance industry are interested in participating and will be kept informed. In addition, there was one TTW for builders held in January 2007 for the Iowa City and Cedar Rapids Iowa HBAs. The presentation panel used the new BCSI resources, and the evaluations all rated the program as good or excellent with 100 percent of their questions answered.

Minnesota Truss Manufacturers Association

At its winter meeting, the Minnesota Chapter elected its 2007 officers and board of directors. Tom Nomeland of Universal Forest Products and Bob Mochinski of Littfin Lumber were approved for another term as President and Secretary/Treasurer respectively. Chris Torgerson of Scherer Brothers Truss Division accepted the job of Vice President. Steve Schaeffel of Manion Lumber and Truss joined Steve Cummings of Stock Components–Cedar, Daniel Hall of Mathew Hall Lumber/Component Division, Keith Kylmala of Kylmala Truss, and the chapter's Past President, Jim Scheible of Automated Building Components, on the board. The next chapter meeting will be held on May 17 in Plymouth, MN.

Missouri Truss Fabricators Association

The Missouri Chapter's March meeting promised a presentation on the rules of the road, including: rules and regulations of Missouri highways, licensing and legal times to be on the roads, load securement, log books and what inspectors look for when they pull you over. The guest speakers were Bill Hampton, Senior Motor Carrier Specialist, MODOT/Motor Carrier Services Division/Transportation Safety & Compliance and Patricia Suling, Over Dimension/Over Weight. In addition, information was provided on the education available from MODOT for businesses throughout the state. The chapter members appreciated the informative presentation and literature distributed by the speakers.

Following the presentation, the WTCA Board resolution on participation in local and state home builder associations was discussed. Several chapter members are already active in the building code process, so the group agreed to create a collective approach to getting and sharing information. Everyone was encouraged to become more involved, and the chapter may establish a more formal committee to coordinate these efforts at the next meeting.

In addition, the attendees reviewed the recent educational programs that the chapter has conducted, including the seminar for the Johnson County Contractor Licensing Educational Program in February. Since education remains the primary focus of the chapter, the next chapter meeting will focus on education. Members are encouraged to bring stories of their own presentations and efforts, so that all can learn from members' experiences. The meeting will include a presentation on all of the educational resources available from WTCA and Carbeck. This meeting will be held on June 7 in Columbia, MO.

Wood Truss Council of Michigan

First up at the March meeting, the Michigan Chapter members unanimously approved the revised chapter bylaws. Second, the attendees reviewed the WTCA Board resolution on participation in local and state home builder associations. Members were asked to consider how best to implement this resolution and an individual will be chosen at the next meeting to head up these efforts.

Rick Wyble of Heart Truss & Engineering delivered the Education Committee report. The Post Frame Expo held in Mt. Pleasant drew approximately 140 inspectors and builders. The primary concern of the attendees was snow loads. Also in February, two presentations on BCSI were delivered. The successful plant tour at Trussway for Representative Pete Hoekstra (R-MI) was discussed too.

Following up on the chapter's subcommittee on creating a standard Jobsite Package for members to use in their deliveries, the new WTCA Long Span JOBSITE PACKAGE was reviewed. The latest versions of the enclosed documents, especially the restructured B3 on permanent restraint/bracing, were explored thoroughly. The benefits of having a uniform jobsite package, such as making it even easier to educate customers, continue to be endorsed by the members. The subcommittee will consider adding additional documents to this package, such as the TTBs on Fall Protection and Drywall, and make a recommendation at the next meeting.

With the completion of the new B3, the chapter is also ready to move forward with its plan to provide more building designer education. Members were again asked to forward lists of architects and engineers that should receive information from the chapter. Along with B3, the WTCA *Technical Notes* written for the Michigan market will be used in these efforts. Plant tours will be offered as well, and it was noted that continuing education credit may be offered to encourage tour attendance. The next steps in the process of offering building designer education will be confirmed at the next chapter meeting on June 14. SBC

Calendar of Events

Check out WTCA's web site at **www.sbcindustry.com** for the most current calendar information.

May

- 10: Mid Atlantic Wood Truss Council (MAWTC) Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 10: Wisconsin Truss Manufacturers Association (WTMA) Chapter Meeting. For more information, contact Chapter President Gene Geurts at 920/336-9400 or ggeurts@richcostr.com.
- 15: Central Florida Component Manufacturers Association (CFCMA) Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.
- 17: Minnesota Truss Manufacturers Association (MTMA) Chapter Meeting. For more information, contact Chapter President Tom Nomeland, 507/872-5195 or tnomeland@ufpi.com.
- 17: South Florida WTCA (SFWTCA) Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.

June

- 5: WTCA-Illinois Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.
- 7: Missouri Truss Fabricators Association (MTFA) Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.
- 12: Colorado Truss Manufacturers Association (CTMA) Chapter Meeting. For more information, contact Chapter President Dennis Wilson at 303/307-1441 or DWilson@HomeLumber.com.
- 13: Iowa Truss Manufacturers Association (ITMA) Chapter Meeting. For more information, contact Chapter President Tom Lambertz at 515/283-7100 or tlambertz@robertsdybdahl.com.
- 13: Southwest Florida Truss Manufacturers Association (SWFTMA) Chapter Meeting. For more information, contact Chapter President Jim Swain at 239/437-1100 or jimsw@carpentercontractors.com.
- 14: West Florida Truss Association (WFTA) Chapter Meeting. For more information, contact Chapter President John Goley at 813/887-3664 or johngoley@westcoasttruss.com.
- 14: Wood Truss Council of Michigan (WTCM) Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 19: South Carolina Component Manufacturers Association (SCCMA) Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 20: North Carolina/South Carolina Joint Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 21: Truss Manufacturers Association of Texas (TMAT) Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.

July

- 11: Georgia Component Manufacturers Association (GCMA) Chapter Meeting. For more information, contact Chapter President Jim Finkenhoefer at 770/787-8715 or jf8515@trusssystemsinc.com.
- 17: Central Florida Component Manufacturers Association (CFCMA) Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.
- 17: Component Manufacturers Association of the Rio Grande (CMARG) Chapter Meeting. For more information on this chapter under development, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 17: Tennessee Truss Manufacturers Association (TTMA) Chapter Meeting. For more information, contact Chapter President Ted Kolanko at 615/287-0184 or kolankot@84lumber.com.
- 18: North Florida Component Manufacturers Association (NFCMA) Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 18: WTCA-Arizona Chapter Meeting. For more information, contact Chapter President Chad Lilleberg at 623/931-3661 or clilleberg@schuckaz.com.
- 18: WTCA-Northeast Chapter Meeting, Worcester Hotel & Conference Center, Worcester, MA. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 19: South Florida WTCA (SFWTCA) Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.
- 19: Southern Nevada Component Manufacturers Association (SNCMA) Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 19: WTCA-Indiana Chapter Meeting. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 19: WTCA-New York Chapter Meeting, NRLA Educational Center, Rensselaer, NY. For more information, contact Anna at WTCA, 608/310-6719 or astamm@qualtim.com.
- 24: Mid South Component Manufacturers Association (MSCMA) Chapter Meeting. For more information, contact Dani at WTCA, 608/310-6735 or dbothun@qualtim.com.
- 26-28: Southeastern Lumber Manufacturers Association, Inc 2007 Annual Conference. For more information, visit www.slma.org.

August

- 8: Southwest Florida Truss Manufacturers Association (SWFTMA) Chapter Meeting. For more information, contact Chapter President Jim Swain at 239/437-1100 or jimsw@carpentercontractors.com.
- 9: West Florida Truss Association (WFTA) Chapter Meeting. For more information, contact Chapter President John Goley at 813/887-3664 or johngoley@westcoasttruss.com.
- 9: Wisconsin Truss Manufacturers Association (WTMA) Chapter Meeting. For more information, contact Chapter President Gene Geurts at 920/336-9400 or ggeurts@richcostr.com.
- 15-17: WTCA Open Quarterly Meeting, San Franscisco, CA. For details, contact Stephanie at 608/310-6721 or swatrud@qualtim.com. SBC

In Memoriam

Stan Axsmith

Stanley P. Axsmith, 54, of Albert Lea, MN passed away on Sunday, March 25. He was born January 19, 1953 in Pottstown, PA. In 1979, he married Sue Sunkel in New Orleans, LA.

Stan attended Millsaps College in Jackson, MS, and then worked in sales at Owatonna Tool Company (OTC) in Owatonna, MN. He moved on to become VP of Sales at Fountain Industries in Albert Lea, where he met long-time friend Jeff Brown. Together, Jeff and Stan landed jobs at Panels Plus. Jeff recalls how Stan loved to travel, even for business, and would often kid him about being on vacation all the time. He also commented on Stan's work ethic: "Stan loved being with his family and he made sure everyone took care of family before work. While at work his customers were his first priority." Jeff also enjoyed getting to know Stan on a personal level: "He was the kind of guy that once you met him, you didn't forget him, he had friends all over the world. He's going to be missed."

Stan was the national sales manager for Panels Plus. Although he had only been in the industry for four years, he had already established himself as a good salesman. Rod Wasserman of Wasserman & Associates knew Stan well and recalled his quick acceptance into the industry. "What amazed me is that he came out of the parts-washer business with no structural building components knowledge and became successful and respected in the industry so quickly," he said.

Jay Halteman of Wood Truss Systems, Inc. also commented that Stan's entry into the industry was remarkable. "The biggest testament to Stan lies in the fact that our industry is difficult to break into," said Jay. "It's technical and there is a lot of industry culture and terminology that comes with it. Stan came into the industry completely cold, and embraced the wall panels segment of this industry with incredible speed. He had an understanding of the business, remarkable drive and a real passion for sales. Always did it with a great sense of humor, he was a fabulous guy to work with. It's a real loss—Stan brought a lot of class to the job."

Panels Plus will remember Stan for his outgoing personality. Roger Paul worked with Stan and recalled that "he could get people to become his friend before they even bought anything from him. He had that ability to get people to like him as a person, and then he would deal with them on a business level." Roger also commented that "Stan had an upbeat attitude about everything and was always a joy to be around."

Rod said Stan was very likeable: "People liked Stan Axsmith because he was extremely passionate about his projects and did what he said he was going to do.

"It's a tough nut to crack this industry, it's a tight little community. [Stan] just rolled into it and did it with a smile on his face and a sense of humor. If you went to him you knew he'd get the job done because he always kept his word." —Jay Halteman

It's easy to make promises and not keep them, but he always followed through." Jay gave his view as well: "The bottom line is this… he always did everything with integrity, there was nothing negative about Stan's approach to business. He was a really delightful person to work with and be around because he was always so positive. He is one of those people you won't forget soon. It's unusual to come across such a great guy."

In Albert Lea where he resided with his family, Stan was a member of the Church of St. Theodore, Eagles and Elks. Outside of work, Stan was very active with his children and enjoyed coaching his daughter's softball team. He was also a huge sports fanatic. His love was participating in sports, watching his kids play sports and watching sports on TV. Stan was a dedicated Philadelphia Eagles and Phillies fan, and also a fan of the Tennessee Volunteers.

He is survived by his wife, Sue; his son, Christopher; daughter, Jamie; his parents, a sister, brothers and sisters-in-law, a niece and a nephew. SBC

Submissions to "In Memoriam" can be emailed to editor@sbcmag.info. Photos are encouraged and will run as space allows. Submissions may be edited for grammar, length and clarity.

This bar was one of Stan's favorite spots in England, where he traveled for business. Stan was honored to be the first patron ever allowed behind the bar.

Housing Starts

March housing starts increased modestly 0.8%, to 1.518 million (SAAR) while single-family starts were up 2% to 1.218 million (SAAR). Partly a reflection of improving weather in the Midwest versus the previous month, starts there were up almost 45 %.

U.S. Housing Starts
Millions - Seasonally Adjusted Annual Rate (SAAR)

U.S. Totals	Mar	Feb (rev.)	% Change
Starts	1.518	1.506	0.8%
Permits	1.532	1.571	-2.5%
Single Family			
Starts	1.218	1.194	2.0%
Permits	1.544	1.532	0.8%
Multi Family			
Starts	0.300	0.312	-3.8%
Permits	1.114	1.099	1.4%
Starts and Permits By Region:			
NE Starts	0.123	0.131	-6.1%
NE Permits	0.156	0.141	10.6%
MW Starts	0.237	0.164	44.5%
MW Permits	0.244	0.209	16.7%
S Starts	0.784	0.806	-2.7%
S Permits	0.737	0.763	-3.4%
W Starts	0.374	0.405	-7.7%
W Permits	0.407	0.419	-2.9%

Analysis & Outlook: The market continues to correct for excessive inventories, slightly higher mortgage rates (6.22% for 30-yr fixed rate at time of writing), and tougher lending standards resulting from the subprime problems. The key question is: How much longer will it take to bring inventories down to "comfort levels" where builders start building again? Many analysts feel that lower rates are the answer, but from what I'm seeing in Fed reports, rates won't be lowered anytime soon. Often, we see analysts refer to the "core inflation rate"—that is, CPI without food and energy. However, food and energy account for 25% of consumer spending. That means that if we have to spend more on food and energy (which we are), then that leaves less to spend on other goods and services including making mortgage payments. The March report shows the core rate growing at 2.5% year over year (YOY) and the overall rate growing 2.8% YOY, but even more alarming, at a 4.7% rate, annualized over the past three months. In other words, the overall rate is picking up steam, and that may be what is worrying the Fed. The consumer accounts for almost 70% of GDP, so if inflation is picking up, that means lower consumer spending, and perhaps "stagflation"—slow growth and inflation at the same time. Hopefully, this isn't the case as it was in the early 90s. The key trend to watch here is the job market—as long as it remains healthy, the economy should not stagnate, and the housing recovery will resume sometime next year. The demographics for new housing are solid and the remodeling market remains healthy, so residential construction is still on solid ground, in my opinion. Things are slower than 2002-05 when the market was booming (thanks in part to lots of "easy money," weaker credit standards, and a weak stock market that allowed investors to divert more money into real estate). Those "pro-housing factors" have weakened or disappeared, and we have to live with a more restrictive (and realistic) atmosphere, which is good for the market in the long term. Even though the March housing start numbers were up slightly, I believe we are still in for a slow recovery. We are probably at the bottom. I don't know how long will we remain there, but I believe the worst is behind us. SBC

This housing starts report is provided to ***SBC*** on a monthly basis by ***SBC*** *Economic Environment* columnist Al Schuler. Visit www.sbcmag.info for more economic news.

Builder Banter

PATH Reveals the Top 10 Technologies for 2007

The Partnership for Advancing Technology in Housing (PATH) announced the Top 10 Technologies of 2007 at the 2007 International Builders' Show. The technologies were chosen for their potential to improve the quality of homes and are selected for their strengths in one or more of the following areas: quality and durability, affordability, energy efficiency, environmental performance, and safety and disaster mitigation.

The Top 10 List:

1. Mold Resistant Gypsum
2. Solar Water Heating
3. Recycled Concrete Substitutes and Aggregates
4. Combined Heat and Power (CHP)
5. Horizontal Axis Washer/Dryer
6. Hydrophilic, Impact-Resistant Windows
7. Super-Sized (Vertical) Insulated Concrete Forms (ICFs)
8. Induction Cooktops
9. GPS for Land Development
10. Permeable Pavers & Pavement

For more information on these technologies, visit the ToolBase website. [Source: www.toolbase.org]

Tax Credit Rewards Energy Efficient Builders

Builders who create a house whose heating and cooling load efficiency exceeds code* by 50 percent qualify to receive a tax credit of $2,000 per energy-efficient home. (*The code referenced by the tax credit is Chapter 4 of the 2004 Supplement to the 2003 Internal Energy Conservation Code (IECC). Code minimum requirements include a 13-SEER air conditioner and a 13-SEER, 7.7-HSPF heat pump.)

Builders cannot rely solely on HVAC upgrades to reach the 50 percent rating; they need to improve air-sealing, window performance and insulation levels as well. The energy efficiency of the building envelope must be improved enough to reduce heating and cooling loads by at least ten percent compared to 2004 IECC. [Source: www.housingzone.com/probuilder]

Builder Confidence Recedes Further in April

Deepening problems in the subprime mortgage market continued to take a toll on builder confidence in April, according to the National Association of Home Builders/Wells Fargo Housing Market Index (HMI), released on April 16. The index declined three points to 33 in April, its lowest level since December of 2006.

"The tightening of mortgage lending standards in connection with the subprime crisis has

Continued on page 70

Housing Market Index 2006-07 (HMI)

The HMI is a weighted, seasonally adjusted statistic derived from ratings for present single family sales, single family sales in the next 6 months and buyers traffic. The first two components are measured on a scale of "good" "fair," and "poor," and the last one is measured on a scale of "high," "average" and "low." A rating of 50 indicates that the number of positive or good responses received from the builders is about the same as the number of negative or poor responses. Ratings higher than 50 indicate more positive or good responses.

May	June	July	Aug	Sept	Oct	Nov	Dec	Jan07	Feb	Mar	Apr
46	42	39	33	30	31	33	33	35	39	36	33

Source: National Association of Home Builders

Builder Banter

Continued from page 68

shaken the confidence of both consumers and builders, as reflected in this report," said NAHB Chief Economist David Seiders. "Indeed, the unfolding effects of this crisis have compelled NAHB to trim our forecasts of home sales and housing production for both 2007 and 2008," he said. "While we still expect to see some improvements in housing market activity beginning later this year, the downside risks and uncertainties surrounding that forecast are considerable."

Derived from a monthly survey that NAHB has been conducting for more than 20 years, the NAHB/Wells Fargo HMI gauges builder perceptions of current single-family home sales and sales expectations for the next six months as either "good," "fair" or "poor." The survey also asks builders to rate traffic of prospective buyers as either "high to very high," "average" or "low to very low." Scores for each component are then used to calculate a seasonally adjusted index where any number over 50 indicates that more builders view sales conditions as good than poor.

All three component indexes registered declines in April. The index gauging current single-family home sales fell three points to 33, while the index gauging sales expectations for the next six months declined six points to 44 and the index gauging traffic of prospective buyers declined a single point, to 27.

All four regions posted HMI declines in April, with the Northeast showing a one-point decline to 38, the Midwest registering a five-point decline to 22, the South posting a three-point decline to 37, and the West posting a two-point decline to 35.

"The subprime shakeout clearly is a serious matter for the single-family housing market," noted NAHB President Brian Catalde, a home builder from El Segundo, CA. "Builders in the field are reporting adverse effects on both sales and cancellations at this time, and it remains to be seen how serious these effects will be as we move through the spring home buying season." [Source: NAHB Press Release, www.nahb.org, 4/16/07]

Wind Power Generators for the Home

Nowadays people are looking for energy independence and energy price stability along with contributing to a cleaner environment. This is why wind power is the world's fastest-growing energy technology. The NAHB Research Center reports that homes in at least 47 states are using 100 percent renewable, non-polluting wind to generate power.

The typical residential application is a wind-powered generator, or turbine. Wind turbines are best suited for remote or low-density residential lots of one acre or more. For a typical home, a unit rated between 5 and 15 kW will meet most electricity needs. Depending on the wind resource, there can be a monthly savings of $80-$200 when electricity costs $0.10 per kWh.

Wind turbines are also environmentally beneficial. According to the American Wind Energy Association, a small residential wind turbine can offset about 1.2 tons of air pollutants and 200 tons of greenhouse gases throughout its life. [Source: www.housingzone.com/probuilder]

Consensus Committee Appointed for National Green Building Standard

The National Association of Home Builders (NAHB) and the International Code Council (ICC) announced on April 9 that the members to the Consensus Committee on the National Green Building Standard have been appointed by the NAHB Research Center Executive Standards Committee. This Consensus Committee represents the industry in its efforts to develop and publish an American National Standards Institute (ANSI)-approved standard on residential green building. The collaboration between the two groups, announced at the International Builders' Show in Orlando, FL, in February, reinforced the commitment of the organizations to bring uniformity to sustainable building practices.

The Consensus Committee is made up of more than forty groups representing a broad spectrum of the industry. Its purpose is to review the working draft of the national standard based on NAHB's Model Green Home Building Guidelines and to develop ICC/NAHB National Green Building Standard. Unlike the Guidelines, which are intended to be used in the construction of one- and two-family homes, the new standard will be applicable to all new home construction, including multifamily units.

"The creation of the National Green Building Standard is a huge step forward for the industry," said Ray Tonjes, chairman of the NAHB Green Building Subcommittee and an Austin, TX, home builder. "We are proud to work with ICC to produce a voluntary national standard that will take into account regional differences and allow for flexibility, while increasing the efficiency and quality of homes in America." SBC

Email ideas for this department to builderbanter@sbcmag.info.

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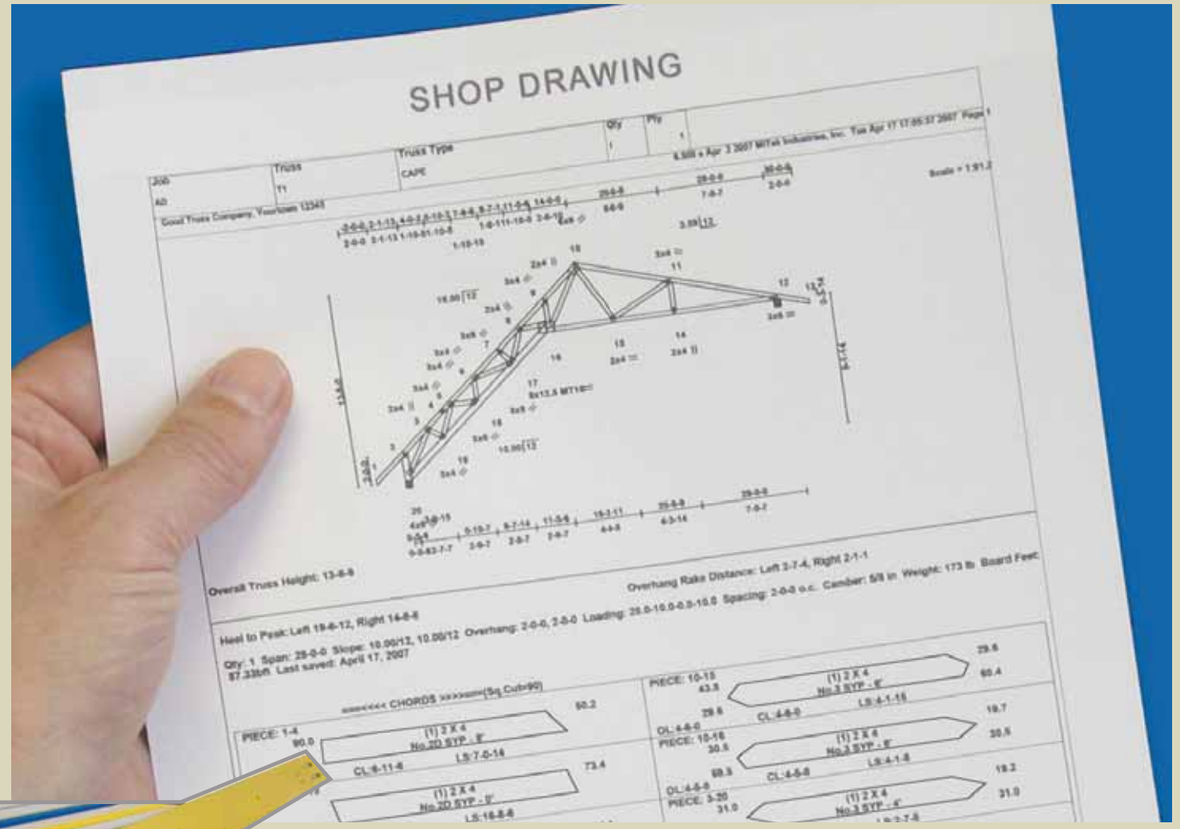

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Industry News & Data

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Consumer Price Index

[an index measuring the change in the cost of typical wage-earner purchases of goods and services expressed as a percentage of the cost of these same goods and services in some base period - called also cost-of-living index]

Expenditure Category	Changes from Preceding Mo. Jan	Feb	Mar	Compound annual rate 3-mo. ended Mar 07
All Items	.2	.4	.6	4.7
All Items Less Food & Engery	.3	.2	.1	2.3

Source: Bureau of Labor Statistics

Unemployment Rate

Dec	4.5%
Jan07	4.6%
Feb	4.5%
Mar	4.4%

Source: Bureau of Labor Statistics

Producer Price Index - Customized Industry Data

An inflationary indicator published by the U.S. Bureau of Labor Statistics to evaluate wholesale price levels in the economy.

Engineered Wood Mem. (exc. truss) Mfg.	Jan	Feb	Mar
Eng. Wood Mem.	98.0(P)	96.7(P)	96.2(P)
LVL	116.3(P)	116.3(P)	116.3(P)
Other	116.5(P)	114.4(P)	113.6(P)

(P) = preliminary

Truss Mfg.	Jan	Feb	Mar
Truss Mfg.	113.1(P)	112.9(P)	111.9(P)
Wood Trusses	110.0(P)	109.6(P)	108.5(P)
Primary Products	110.0(P)	109.6(P)	108.5(P)
Secondary Products	98.1(P)	100.6(P)	100.8(P)

Source: Bureau of Labor Statistics

Producer Price Index General

% changes in selected stage-of-processing price indexes

Month	Total	Ex. Food & Energy
Dec	0.8(r)	0.1(r)
Jan07	-0.6	0.2
Feb	1.3	0.4
Mar	1.0	0

Source: Bureau of Labor Statistics

Consumer Confidence Index

The Consumer Confidence Index is a measure of consumer optimism toward current economic conditions. The consumer confidence index was arbitrarily set at 100 in 1985 and is adjusted monthly on the basis of a survey of consumers. The index considers consumer opinion on both current conditions (40%) and future expectations (60%).

July	Aug	Sept	Oct	Nov	Dec	Jan07	Feb	Mar	% +/-
106.5	100.2	105.9	105.1	102.9	110.0	110.2	111.2(r)	107.2	-3.6%

Source: www.consumerresearchcenter.org

U.S. Prime Rate

Month	2007	2006	2005
Dec 1	-	8.25%	7.00%
Jan 1	8.25%	7.25%	5.25%
Feb 1	8.25%	7.50%	5.25%
Mar 1	8.25%	7.50%	5.50%
Apr 1	8.25%	7.75%	5.75%

Source: Federal Reserve Board

MARCH 2007 ISM BUSINESS SURVEY AT A GLANCE

	Series Index	Direction Mar vs Feb	Rate of Change Mar vs Feb
ISM Manufacturing Index (formerly PMI)	50.9	Growing	Slower
New Orders	51.6	Growing	Slower
Production	53.0	Growing	Slower
Employment	48.7	Contracting	From Growing
Supplier Deliveries	51.3	Slowing	Faster
Inventories	47.5	Contracting	Slower
Customers' Inventories	48.0	Too Low	From Too High
Prices	65.5	Increasing	Faster
Backlog of Orders	47.0	Contracting	From Growing
Exports	55.5	Growing	Faster
Imports	57.5	Growing	Slower

For an in-depth explanation of this summary, go to https://ism.ws/ISMReport.

Industrial Production Index

The industrial production (IP) index measures the change in output in U.S. manufacturing, mining, and electric and gas utilities. Output refers to the physical quantity of items produced, unlike sales value which combines quantity and price. The index covers the production of goods and power for domestic sales in the United States and for export. It excludes production in the agriculture, construction, transportation, communication, trade, finance, and service industries; government output, and imports. The IP index is developed by weighting each component according to its relative importance in the base period. The information for weights is obtained from the value added measures of production in the economic censuses of manufacturer and minerals industries, and from value added information for the utility industries in Internal Revenue Service statistics of income data. The weights are updated at five-year intervals to coincide with the economic censuses. The current index base year is 1992. (r=revised)

	Dec	Jan07	Feb	Mar
Industrial Production Total Index (% change)	0.6(r)	-0.4(r)	0.8(r)	-0.2
Capacity Utilization Total Industry (%)	81.6 (r)	81.1 (r)	81.6 (r)	81.4

Source: Federal Reserve Board

CM News

WTCA'S MINNESOTA CHAPTER WORKS TO RESOLVE CHANGE TO ¼" EASED EDGE LUMBER

Recently a lumber mill in Canada switched to a 1/4" eased edge. The eased edge, which can be defined as a slightly rounded surfacing on pieces of lumber to remove sharp corners, is typically 1/8". Several component manufacturers in the Minnesota Chapter of WTCA (Minnesota Truss Manufacturers Association) got involved to figure out what kind of impact the increased eased edge would potentially have on their design and manufacturing. After doing some tests with the new material, the WTCA members sent feedback back to the lumber company letting them know that accounting for this eased edge increase would be difficult, from both a design consideration standpoint and manufacturing and plating standpoint. Upon receiving the analysis, the lumber company decided to return to a 1/8" eased edge. In the future WTCA will explore the possibilities of working with the lumber companies to comprehensively test scenarios like an increased eased edge. Tests like this will be possible once the SBC Research Institute is completed and ready for testing in the summer of 2007. [Source: WTCA Press Release, 3/21/07]

JIM THOMAS INDUCTED INTO TRUSSWAY HALL OF FAME

Jim Thomas, nineteen year veteran of Trussway, Ltd., was inducted into the Trussway Hall of Fame in early March. The induction capped an awards ceremony at the company's National Sales Meeting at South Seas Resort on Captiva Island, FL.

Thomas joined the company in Houston, TX in 1985 as a sales representative. The following year he relocated to Massachusetts to sell in the New England market. In 1989 he and his family moved to Virginia and helped establish Trussway's Fredericksburg plant. In 1996 JT was promoted to Vice President East Region and General Manager Southeast Division and transferred to Orlando. He earned the title of VP/GM Eastern Division in 2002.

Rip Rogers, 2005 Trussway Hall of Fame inductee, had this to say about Thomas; "Whatever role he has filled over the years I know he has been committed to it, but I also know that he has his priorities in order – 1) faith, 2) family, 3) vocation." It was a commitment to these priorities that led JT to request to be moved into the Operations Manager position in Orlando in late 2005. This move allowed him to spend more time with his wife Kathy and their children and grandchildren.

"Jim's contributions to Trussway over the years have been outstanding" said Trussway President and CEO Bill Adams. "He's been asked to do many difficult tasks for the company and always got the job done. Since he's taken over Orlando the plant has increased productivity, reduced costs and greatly improved customer service. Jim is a tremendous asset to the company and very deserving of this honor." [Source: Trussway Press Release, 3/22/07]

STOCK EMPLOYS NEW CREDIT CARD ANTI-FRAUD SYSTEM

Stock Building Supply, the second largest U.S. pro dealer, has entered into a non-exclusive license agreement to use credit card fraud protection technology developed by Financial Systems Innovation, a subsidiary of Acacia Research Corp.

According to Newport Beach, CA-based Acacia, Stock will be employing a computerized system for protecting retailers and consumers engaged in credit card, check card and debit transactions. The system includes an electronic card reader, which generates a transaction number that specifically identifies each transaction processed within the system.

The system allows the retailer to not have to print detailed information concerning the cardholder's identity or account number on the customer's receipt, Acacia said. [Source: www.homechannelnews.com, 4/10/07]

SPENARD BUILDERS SUPPLY ACQUIRES POLAR SUPPLY

Anchorage, AK-based Spenard Builders Supply, a division of Pro-Build Holdings, Denver, CO, has acquired Polar Supply Co., which operates in Anchorage, Fairbanks and Kenai, according to the Home Channel News.

Polar Supply specializes in products required to build and maintain roads, bridges and pipelines and adds to Spenard's commercial product offerings.

Polar Supply's three facilities will each operate as a separate division within Spenard, focusing on major commercial contractors, pipeline and oil companies.

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Industry News

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Based in Anchorage, Spenard Builders Supply operates 18 locations, four truss manufacturing facilities, one wall panel fabrication plant, four window and door shops and four distribution centers throughout Alaska, according to HCN. Pro-Build has more than 500 locations in 40 states. [Source: www.mdm.com, 4/11/07]

SHELTER SYSTEMS LIMITED BECOMES SCORE-CERTIFIED

As of March 14, 2007, Shelter Systems Limited became a SCORE-certified company. Shelter Systems Limited, which is based in Westminster, MD, has achieved SCORE Leader status and identified itself as a company that strives for excellence.

WTCA's SCORE program, which stands for Structural Component Operations Reaching for Excellence, was recently launched to fill the need for an industry certification—something that has come up repeatedly over the last 15-plus years. WTCA members who were participating in many available programs (e.g., Truss Technician Training, In-Plant WTCA QC, Operation Safety, etc.) were looking for a way to show both their customers and other industry professionals how committed they are to continuous improvement within their companies.

This is what SCORE exists to do, as well as to assist members by providing them with tools they can use to create and/or improve their own strategic marketing plans. Certified companies have embraced programs intended to help them continually improve and provide enhanced value to their customers. Achieving SCORE certification communicates an internal commitment to continual education and ever-increasing professionalism.

"I am proud of our team in the way they embraced the SCORE program," said Joe Hikel, chief operating officer at Shelter Systems Limited. "They all reached beyond the scope of their day-to-day jobs in order to achieve the different requirements. ORisk in particular was an eye opener for each and every member of our team. The only milestone keeping us from the Elite level is our tenure in Operation Safety, and we always try to be at the forefront of the industry. We view the certification as something that sets us apart from our competitors in a very competitive market."

Barry Dixon, WTCA President, extended his congratulations. "People working at the SCORE level are leaders in the industry, because bettering our individual companies betters the entire industry," he said.

For more information about SCORE, visit www.sbcindustry.com/score.php.

PACIFIC TRUSS WINS TOP QUALITY AWARD

Cobble Hill-based Pacific Truss, one of the largest roof-frame manufacturers in British Columbia, has won the top quality award from the Western Wood Truss Association of B.C. It's the third time in the past six years that Pacific Truss has won the award and the first time for the company's Truline Truss division in Creston. The award is tabulated by the association after several unannounced audits of the plant over the year. Pacific and Truline are divisions of the McKinnon Family of Companies, which is based in Cobble Hill and also includes Pacific Building Systems, a prefabricated homes and walls factory, a wholesale lumber company and Rona home improvement stores in Duncan, Campbell River, Nanaimo and Cobble Hill. The McKinnon family—Grant, David and Wayne—also is building a 40,000-square-foot Rona store in North Cowichan. The McKinnons employ more than 300, including 70 in peak periods at Pacific Truss and 25 in Creston. [Source: www.canada.com, 4/11/07]

Announcements

FOREST PRODUCTS SOCIETY (FPS) 61ST INTERNATIONAL CONVENTION

The Forest Products Society's 61st International Convention will be held June 10-13, 2007 at the Hilton Hotel/Knoxville Convention Center in Knoxville, TN.

The International Convention begins on Sunday evening, June 10, and concludes with the sporting events on Wednesday afternoon, June 13. The Planning Committee has also organized an Industry Tour scheduled for all day Thursday. The tour will include a stop at Barna Log Homes, Oneida, TN; Oak Ridge Hardwoods, Clinton, TN; and Royal Blue Chip Mill, Pioneer, TN.

On Sunday, the Society of Wood Science and Technology's (SWST) 50th Annual Convention will run from 8:30 am - 4:00 pm. Sunday evening's Host Reception, sponsored jointly by the FPS Mid-South Section and SWST, will offer all attendees the opportunity to meet new colleagues and renew old acquaintances.

The Industry Focus Day Session "Opportunities and Challenges for the Forest Products Industry in the New Millennium," will take place on Tuesday morning from 8:05 am - 12:00 noon.

For a copy of the program agenda and registration information, please visit the Forest Products Society at www.forestprod.org/confic07.html. SBC

Visit **www.sbcmag.info** for additional industry news!

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WTCA Update
Continued from page 24

building components industry in a very positive matter. Specific major project investments were reviewed. Discussion ensued on how WTCA's overall approach to budgeting changed in 2006, with the introduction of an aggressive approach toward estimating revenue more accurately. This approach will continue in 2007, with the organization's overall goal to get to a point of a zero budget on WTCA operations. Then, any revenues from the BCMC show would be carried forward into subsequent years to fund special industry projects. **The Treasurer's Report, including the 2007 Budget, were approved unanimously.**

Key Industry Supplier Update: Truss Plates and Steel
Tom Manenti reported that the TPI Board re-elected Tom Whatley as President of TPI for 2007. TPI is very excited about the Joint Venture on the SBCRI and looks forward to getting the testing plans established and beginning the 2007 industry testing. TPI anticipates publication of the next edition of ANSI/TPI-1 by the end of the year. Finally, Manenti advised of the continuing zinc shortage and the resulting rise in the cost of domestic steel and further indicated that suppliers have been able to find off-shore sources to keep the prices stable in the past months.

Key Industry Supplier Update: Connector Industry/Steel
Tawn Simons reported that some key legacy ICC-ES evaluation reports for the connector industry will sunset in the near future. Updating these code reports will require significant re-testing and there is the very real potential for changes in the performance ratings of a variety of connectors as a result.

Member, Chapter & Supplier Roundtable Discussion
Joe Odgers provided an update on the Cold Formed Steel Council (CFSC) and encouraged attendance at the Annual Workshop & Conference. He spoke about his experience in the complementary nature of working with both steel and wood components.

Mark Rose talked about proposed changes to the Florida building code due to prior high-wind storms. He asked WTCA to help them address these code changes and will work with staff who has been very involved in the Florida building code change process. SBC

The next OQM will be August 15-17 in San Francisco, CA. For more information or to register, visit www.sbcindustry.com/oqm.php. All are welcome to attend!

In an ongoing effort to educate our members and their customers about the importance of temporary restraint and bracing during truss installation, WTCA is looking for high quality photographs of proper restraint and bracing in action on the jobsite. For a review of proper installation and temporary restraint/bracing techniques, take a look at chapter 2 of the BCSI booklet or the BCSI-B2 Summary Sheet. PDFs of both documents are available to view at www.sbcindustry.com/bcsi.php.

For more information or to submit photos, contact Emily Patterson at 608/310-6747 or email epatterson@qualtim.com.

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LG Contracting, Inc. (LGC) of Tampa was the framing contractor for the Berean Academy, a large private school in Lutz, FL, pictured here. Lane Glanz, president of LGC, explained the process. "We constructed two roof assemblies measuring 67'8" x 100' on the ground. We installed all engineering, bracing, sub-fascia, piggyback trusses and sheathing while on the ground." Having the temporary bearing height of 3-½' above the ground made it safer for the crew, he said. It took approximately 56 man hours to lay out, set up and break down the temporary support beams. According to Glanz, assembling the structure at ground level saved close to 100 man hours. Florida Forest Products manufactured the long-span roof trusses. Each of the 6,700 sq. ft. assemblies was split into three sections of 2,210 sq. ft. each, which was dictated by the cranes weight and reach limitations. Each section was hoisted into place with a 150-ton crane. [For more information on long-span truss installation, please refer to WTCA's *Truss Technology in Building: Long-Span Truss Installation* document available at www.sbcindustry.com/ttblong.] SBC

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