“I would like to be able to ‘DVR’ my TV shows from TrussFramer (SAPPHIRE™ Structure); I think that everything else is covered.”

Caleb Hills — West Orange Truss
Groveland, FL 34736

We were amazed at how easy the MiTek software tied into the Virtek laser projection system. The lasers, along with the MiTek software, helped improve the productivity on our shop floor.

I love their customer service — if we have a problem, we call up MiTek and it is taken care of.”

Mike Kaufman — Manager
Truss Systems, Sunnyside, WA

“The PLANX system has made a ‘helluva’ difference. Difficult set-ups used to take 15-20 minutes to complete. With PLANX and the Virtek laser system we just hit a button and throw the lumber on to the table. With this type of quick set-up the lumber and plates need to arrive at the tables in an organized manner.

If they had the PLANX system back when I was on the tables it would have made my life a lot easier.”

Gary Brooks — Line Supervisor
ComTech, Fayetteville, SC

“My customer service — if we have a problem, we call up MiTek and it is taken care of.”

Stacey Timmons — Senior Truss Technician
Atlantic Building Components, Moncks Corner, SC

“If just have to tell you again. I love this program. It is so much more efficient and I believe once we get all of our designers on it, it will make us more efficient and accurate as a whole. I continually brag on it. As I show off some of the features to the people here they are amazed. ‘Layout’ has really come a long way.”

Stacey Timmons — Senior Truss Technician
Atlantic Building Components, Moncks Corner, SC

With the new Machinery Assurance Program™ (MAP) from MiTek, you can mitigate the risks of used equipment and still take advantage of the low investment cost. From phone support to on-site evaluation and installation, you can get the very best support to get your equipment purchase up, running and productive.

www.mii.com/mitekassurance

“Now more than ever your success is our success.”

MiTek
SOFTWARE • EQUIPMENT • CONNECTOR & BRACING PRODUCTS • ENGINEERING SERVICES

For more success stories visit: www.mii.com/yoursuccess

Questions? Contact us today: 800.325.8075 • www.mii.com

For reader service, go to www.sbcmag.info/mitek.htm
May 2010
www.sbcmag.info

contents

Page 12
Sacramento Habitat Home Earns LEED Platinum, Contains No Certified Wood
by Libby Maurer

Page 18

by Libby Maurer & the MSR Lumber Producers Council

Editor’s Message 7
Technical Q&A 10
Parting Shots 22

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 the Structural Building Components Association (SBCA). The opinions expressed in SBC are those of the authors and those quoted, and are not necessarily the opinions of Truss Publications or SBCA.

Copyright ©2010 by Truss Publications, Inc. All rights reserved.

The future of framing.

Congratulations! Your inquiry has been received.

Thank you for your business!

Editor
Steven Spradlin
Capital Structures Inc. • sspradlin@sbcmag.info

Art Director
Melinda Caldwell
608/310-6729 • mcaldwell@sbcmag.info

Managing Editor & Circulation Director
Libby Maurer
608/310-6724 • lmaurer@sbcmag.info

Editorial Review
Suzi Grundahl
608/310-6710 • sgrundahl@sbcmag.info

Advertising Sales & Marketing
Peggy Pichette
608/310-6723 • ppichette@sbcmag.info
Emmy Thorson-Hanson
608/310-6702 • ethorson-hanson@sbcmag.info
Kirk Grundahl
608/274-2345 • kgrundahl@sbcmag.info

Staff Writers for May
Ryan J. Dexter, P.E. • Larry Wainright

Accountant
Mike Younglove
608/310-6714 • myounglove@sbcmag.info

Computer Systems Administrator
Rick Sanden
608/310-6717 • rsanden@sbcmag.info

Send all ad materials, insertion orders, contracts & payments to:
Truss Publications, Inc.
6300 Enterprise Lane • Suite 200
Madison, WI 53719
Phone: 608/310-6706 • Fax: 608/271-7006
trusspubs@sbcmag.info • www.sbcmag.info

Many thanks for their ongoing support!

For more information about our 2010 Program Advertisers or advertising in general, visit the SBC website at www.sbcmag.info or call 608/310-6706.

Our Valued Supporters...

These companies provide significant sponsorship of the structural building components industry.

Gold Advertisers
BCMC* (p. 6)
Clark Industries* (p. 21)
Eagle Metal Products* (p. 11)
Elde* (p. 6)
Intelligent Building Systems - ITW Building Components Group* (p. 18)
ITW Building Components Group* (p. 74, 24)
Lakeside Trailer Manufacturing* (p. 11)
Masengill Machinery Co.* (p. 18)
MiTek Industries, Inc.* (p. 2-3)
Panels Plus* (p. 22)
Qualtrim, Inc.* (p. 29)
SBCA* (p. 23)
Simpson Strong-Tie Co.* (p. 17)
Southern Pine Council* (p. 16)
Stiles Machinery, Inc.
Wasserman & Associates, Inc.
Wood Truss Systems, Inc.* (p. 11)

Silver Advertisers
Finnforest USA* Pennsylvania Lumbermens Mutual Insurance Co.

Bronze Advertisers
Eagle Integrated Systems, LLC
Eagle Lumber Manufacturing, Inc.
Eagle Southern Pine
Qualtim, Inc.* (p. 10)

*Indicates Charter Advertiser Status Listing based on contracts received as of 4/13/10.

Publisher
Truss Publications, Inc.
6300 Enterprise Lane • Suite 200
Madison, WI 53719
Phone: 608/310-6706 • Fax: 608/271-7006
trusspubs@sbcmag.info • www.sbcmag.info

Editor
Steven Spradlin
Capital Structures Inc. • sspradlin@sbcmag.info

Art Director
Melinda Caldwell
608/310-6729 • mcaldwell@sbcmag.info

Managing Editor & Circulation Director
Libby Maurer
608/310-6724 • lmaurer@sbcmag.info

Editorial Review
Suzi Grundahl
608/310-6710 • sgrundahl@sbcmag.info

Advertising Sales & Marketing
Peggy Pichette
608/310-6723 • ppichette@sbcmag.info
Emmy Thorson-Hanson
608/310-6702 • ethorson-hanson@sbcmag.info
Kirk Grundahl
608/274-2345 • kgrundahl@sbcmag.info

Staff Writers for May
Ryan J. Dexter, P.E. • Larry Wainright

Accountant
Mike Younglove
608/310-6714 • myounglove@sbcmag.info

Computer Systems Administrator
Rick Sanden
608/310-6717 • rsanden@sbcmag.info

Send all ad materials, insertion orders, contracts & payments to:
Truss Publications, Inc.
6300 Enterprise Lane • Suite 200
Madison, WI 53719
Phone: 608/310-6706 • Fax: 608/271-7006
trusspubs@sbcmag.info • www.sbcmag.info

Many thanks for their ongoing support!

For more information about our 2010 Program Advertisers or advertising in general, visit the SBC website at www.sbcmag.info or call 608/310-6706.

Our Valued Supporters...

These companies provide significant sponsorship of the structural building components industry.

Gold Advertisers
BCMC* (p. 6)
Clark Industries* (p. 21)
Eagle Metal Products* (p. 11)
Elde* (p. 6)
Intelligent Building Systems - ITW Building Components Group* (p. 18)
ITW Building Components Group* (p. 74, 24)
Lakeside Trailer Manufacturing* (p. 11)
Masengill Machinery Co.* (p. 18)
MiTek Industries, Inc.* (p. 2-3)
Panels Plus* (p. 22)
Qualtrim, Inc.* (p. 29)
SBCA* (p. 23)
Simpson Strong-Tie Co.* (p. 17)
Southern Pine Council* (p. 16)
Stiles Machinery, Inc.
Wasserman & Associates, Inc.
Wood Truss Systems, Inc.* (p. 11)

Silver Advertisers
Finnforest USA* Pennsylvania Lumbermens Mutual Insurance Co.

Bronze Advertisers
Eagle Integrated Systems, LLC
Eagle Lumber Manufacturing, Inc.
Eagle Southern Pine
Qualtim, Inc.* (p. 10)

*Indicates Charter Advertiser Status Listing based on contracts received as of 4/13/10.
Over the past several years SBCA has developed quite a few programs and publications that are very beneficial for promoting building component design and specification. I’ve found that the best way for these programs and services to be used is for individual manufacturers to meet with their local design professionals. There is no better place to get involved in projects than in the design phase.

The article on page 12 demonstrates this. Thanks to a lot of planning and organization in the design phase, a Habitat home in the Sacramento area qualified for the highest level of LEED certification—Platinum! The best part? There was no need to use FSC certified lumber in the trusses or components! Check out some of the advanced framing techniques that were used.

I encourage component manufacturers to stretch themselves and get out into the architect and engineering communities to use the resources available to help market their companies and product lines. Being involved or specified in the design process will reap more rewards than you might imagine. Take this example. Lately in our market we’re seeing between seven and ten general contractors bidding on large commercial projects. Just one visit to an architect or engineer for a specific project can give you the opportunity to get in the door of those seven to ten prospects. It can be a monumental achievement from one simple visit to a local professional design entity.

For the specifiers you already have a solid relationship with, maybe a set of reference materials would interest them. SBCA packaged its best resources for design professionals into a nifty kit. For under $200, architects and engineers get more than $450 worth of SBC tools including access to SBCA’s Online Resource Library, Component Technology Workshops for CEUs/PDHs, industry publications and all the benefits of SBCA membership! Learn more about the Design Professional Subscription here: www.sbcindustry.com/dps. This is an excellent product for marketing our industry.

On page 9, you’ll find a letter submitted by Ben Hershey, who held my position as SBCA President last year. I agree that he has a valid concern about the cost of certified wood and Chain of Custody. Simple economics will ultimately determine the choices our customers make; rest assured especially in the current business environment they will choose the least expensive building material. There comes a point when the “greenness” of a product doesn’t matter. It’s the cost that will prevail. I hope we will see the day when wood and steel are treated equitably in green building programs.

Finally, I encourage you to read the article on page 18, “Component Manufacturers, Lumber Producers Address Lumber Quality.” Despite beginning to emerge from this highly challenging business cycle, our industry is faced with another challenge—securing quality raw materials at an affordable price. Our products are only as good as the materials we build them with. I think any time we can hear the buyer and seller sides of an issue, we’re a step closer to finding solutions. I commend the lumber producers and component manufacturers for sharing their feedback with SBC staff. I am encouraged that we are making and will continue to make forward progress on the issue of lumber quality.

Why you should get out and talk to architects and engineers.

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.
Dear Lumber Producers:  

I think we can all agree that lumber is one of the greenest products on the market today. We have well-managed forests and by most estimates we have more trees growing on the Earth today than we did 25 or more years ago.  

Now, let me get to my point, where did lumber producers get off the proverbial bus when it comes to USGBC (United States Green Building Council) and its LEED rating system? Many forest certification systems exist, including FSC, SFI, CSA, ATFS, and PEFC. It appears that a majority of the mills producing lumber in Canada and the United States are, in fact, certified to one of these systems. But what is often overlooked is the cumbersome and costly process of Chain of Custody. You can stamp all you want that your product is FSC or SFI certified, but without that piece of paper, the Chain of Custody is broken and my customer, the building owner, will not get the appropriate credit. 

Let me share a real scenario that is beginning to happen in the marketplace today. I had a recent meeting with one of my customers discussing LEED certification on their building. Our company is both FSC and SFI Chain of Custody certified. He wanted to discuss the possibility of using FSC certified wood and showed me his price base for components made with regular lumber, and then I showed him the price for FSC lumber (an additional 25%). Note that there is no additional cost to apply for LEED certification to engineered wood products as well. How did this happen? Well, those of us who are FSC certified had to spend millions of dollars already on Chain of Custody certification. Couple that with the cost of certifying the forest the mill produced the lumber from and surprise, you get higher cost lumber. All of this added cost for lumber already produced from a managed forest. And what would be the difference if my customers decided to use steel? There would be no additional charge for LEED certification because steel is a recycled content material that LEED automatically awards credits for and how they allowed the USGBC body through FSC and other agencies to price lumber out of the marketplace. If you have spent millions of dollars already on the WoodWorks program using money that were lost during the volcanic eruption. Surprised? You should be. Where is the education of this? Somewhere the lumber industry, even with all the money it has spent on its association marketing programs, lost its voice trumpeting the good things its industry does starting with the use of the whole tree and how they managed the forests that are harvested from. You, the lumber producers, need to stand up and start fighting for what is right and promoting wood as the green product it is. Otherwise, while we like working with all components as well, our customers will be increasingly pushed in that direction. 

So where do you start; my thought is you need to be at the table now with LEED and change the requirements to allow wood that is stamped with the various forest certification programs and credit awarded accordingly without the added costs of Chain of Custody. If you cannot do this, then why should component manufacturers continue to fight to use FSC, SFI or other certified wood? The industry should also be working to get more seats at the table. Look at the makeup of the USGBC and FSC governing boards, I do not see any of you at that table helping to guide or set policy. SBCA has taken the position that we should not need Chain of Custody certification for our products given the major value of building engineering. We believe wood is an inherently green product and I will continue to ask that a greater number of points should be awarded for optimum value engineering in the LEED NC rating system for new commercial structures as has been done in LEED for homes. I applaud LEED for awarding substantial points for advanced framing techniques. 

Our company has taken the time and money to be FSC and SFI Chain of Custody certified and to have individuals trained in the LEED program. We believe we need to be involved in these activities if we are going to stay current with our customers’ needs. But keeping current on green programs does not take away the difficulty of trying to sell customers wood that is significantly more expensive than it should be. You hear our voice, but where is yours? If you want to see continued use of wood in commercial applications like WoodWorks promotes and not just see those structures move increasingly to steel or other applications, then the lumber industry needs to start being heard. Guns cannot be the lone voice in the lumber construction wilderness questioning why social policy is suddenly a money-making proposition for FSC.

I hope you hear the frustration in my voice. I am an advocate for supplying our customers with the lumber necessary to meet the growing green standards being advocated for in building construction. But the current producer-to-market distribution of green certified lumber is not working. I am committed to working, and want to work, with the lumber producers to help affect policy, but you need to reach “across the aisle” and work with us/us association to help your lumber buyers’ voices be heard with USGBC and other creators of green rating systems.  

This is not a time to worry about which association is centering the taking the lead, or the turf. It is more important to understand that the component manufacturing industry needs lumber producers’ voices to be heard on this issue. 

Sincerely,  

Ben Hershey  
President, Alliance Truss • SBCA 2010 Immediate Past President
Live load deflection limits in trusses with habitable spaces.

### Question

What is the standard deflection design limit for truss bottom chords supporting a ceiling? I am an architect and my particular residential project uses a “Room-In-Attic” truss. I believe that a live load deflection limit of $l/360$ is needed to prevent cracking of the drywall. Will this be standard construction or will it require special details?

### Answer

Metal plate connected wood trusses (MPCWT) are designed and manufactured to comply with the code-referenced standard ANSI/TPI 1 National Design Standard for Metal Plate Connected Wood Truss Construction developed by the Truss Plate Institute (TPI). The deflection limits differ depending upon which building code is being referenced. TPI 1-07 is the MPCWT design standard referenced by the 2009 IRC. Table 7.6-1 specifically requires “habitable spaces in Trusses” to be designed for a live load deflection limit of $l/360$.

#### Table 7.6-1: Deflection limits for non-carriedover portions of trusses.

<table>
<thead>
<tr>
<th>Member</th>
<th>Deflection due to LL only</th>
<th>Deflection due to Total Load (LL+DL)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roof Truss supporting plate</td>
<td>340</td>
<td>248</td>
</tr>
<tr>
<td>Roof Truss supporting drywall</td>
<td>181</td>
<td>116</td>
</tr>
<tr>
<td>Roof Truss not supporting ceiling</td>
<td>181</td>
<td>117</td>
</tr>
<tr>
<td>Floor Truss 2</td>
<td>360</td>
<td>488</td>
</tr>
<tr>
<td>Top Chord panel</td>
<td>181</td>
<td>129 (600')</td>
</tr>
</tbody>
</table>

Habitable spaces in Trusses are defined as follows:

- Live load deflection limits for trusses with habitable spaces differ depending upon the building code.
- The 2009 IRC references TPI 1-2007; it defines a live load deflection limit of $l/360$ for these trusses.
- TPI 1-2002, which the 2006 IRC references, does not contain a live load deflection limit.

While not required to do so, many manufacturers still provide the increased deflection limit as a matter of serviceability. Depending on the version of the code you are referencing, you may want to specify a $l/360$ or $l/480$ deflection limit for the habitable room to minimize the potential for callbacks. SBC

Do you have questions pertaining to building codes? Contact Larry Wainright at wainright@qualtim.com.
On April 24, Francisca Flores and her kids got the keys to their brand new 1100 sq. ft. home in Sacramento. Make that a LEED certified home. A LEED certified Platinum home, the highest of four levels, to be exact.

When the design team—or “charrette” in LEED lingo—met early on to discuss the project, they selected Gold certification as their target. That day, they fleshed out the project timeline, exceeding the minimum California energy requirements, and various advanced framing options. But there was one thing they never even considered: FSC certified wood. If you guessed the Flores’ new home doesn’t contain any certified wood, you guessed right. Their home overshot the initial target rating and achieved LEED Platinum status without it.

Why would a not-for-profit, budget-minded outfit like Habitat pursue green certification? “We build green homes for one reason,” said Dan Wilson, Project Director for Sacramento Habitat for Humanity, “energy efficiency.” Wilson said their goal is to build homes that are affordable to build and maintain. That means lowering the families’ utility costs as much as possible. The thrust of the LEED program, he said, is energy efficiency. By aligning itself with the program, Wilson can guarantee each home will meet certain energy efficiency thresholds and reduce homeowners’ monthly living expenses. As a single mom to six children, Flores will no doubt appreciate the measures Habitat’s commitment to low energy bills.

Norm Scheel Structural Engineering was brought on as the building designer and engineer of record. In addition, Scheel served as the project’s “energy consultant” and LEED Accredited Professional (AP). He said early collaboration on design and energy objectives were key in achieving the Platinum rating. In particular, the advanced framing techniques used in the walls and roof system allowed the team to add valuable energy efficient features. Roughly 25 percent of the total LEED points earned come from design and energy efficiency measures that tighten the energy envelope and reduce utility costs.

But builders need not choose LEED certification to achieve an energy efficient home. “Most of these elements are things that, if really involved, homeowners would automatically want because they simply make sense,” said Scheel. “It’s important for people to know you can green build without adding a lot of cost,” Wilson said. “Our homes will always meet the basic LEED certification level, even if they don’t have [USGBC’s] official stamp of approval. Following the guidelines of a certain program doesn’t have to add more cost.”

The Bottom Line:

2 points awarded in ID1 for an integrated project team and a design charrette.

Use Raised Heel Trusses

Raised heel trusses provide for an array of points. The most obvious is additional space for continuous insulation. Now, higher R-value alone won’t earn you any LEED points. But it pays off in spades when it comes to a category called “exceptional energy performance.” Here’s how.

A LEED prerequisite for California homes is Energy Star compliance. Then the home is rated per the minimum energy requirements set forth in the California Building Code’s Title 24. LEED energy performance points are awarded for solar energy consultant and project manager comprised the project team. The design charrette is typically made up of these same people, but the charrette is required to meet just once (in the design development phase of the project).

Wilson and Scheel insist a well-connected design team is critical to achieving the level of integrated framing and energy efficiency in a home like this. “You don’t get a well-designed, efficient house unless you get the experts all together. One person can’t think of everything,” said Wilson.

Sacramento Habitat Home Earns LEED Platinum, Contains No Certified Wood

How one Habitat home racked up 80+ LEED points without FSC...

by Libby Maurer

The minimum point thresholds for Gold and Platinum certification are 65 and 80 respectively.
Sacramento Habitat Home... Continued from page 13

any percentage beyond this minimum. The energy consultant conducts a software-based assessment and a rating score is issued. The score is based on building envelope tightness and heating, cooling and plumbing elements. The green rater then verifies that the Energy Star prerequisite has been met, affirms the percent above Title 24 reached, and determines the number of LEED points to be awarded. Wilson aims for 25% over the baseline energy rating. “Our goal is to make sure the home will not only be efficient today, but in another 30 or 40 years as well,” he said.

Wilson’s team blew past the Energy Star prerequisite and his own 25 percent goal, reaching 32 percent above Title 24 benchmarks. Incorporating raised heel trusses allowed the team to meet R-19 and R-38 insulation factors in the walls and roof. Wilson said other features like an on-demand water heater (discussed below) and solar photo voltaic cells also contributed to the high energy rating. Thanks to the raised heel trusses supplied by Homewood Truss Company, the project team earned an impressive 11 energy performance points.

The Bottom Line:

11 points awarded in EA1 for exceptional energy performance.

On-Demand Water Heater

Another benefit of raised heel trusses is their roomy open spaces double as places for mounting mechanicals and energy-saving appliances.

In this case, Scheid designed the trusses with extra load and space to accommodate this tankless or “on-demand” water heater. This is a perfect example of how high-performance energy systems and framing design can be coordinated to make the most out of space. “This is why truss manufacturers have a lot to offer in these high performance houses. The points for high energy wouldn’t be possible without trusses.”

The location of this on-demand was also critical. To get the points, each branch line from the water heater to appliances had to be 20 feet or less. Wilson said designing the specification for the heater mount, the truss engineering and layout was one of the things the design team coordinated early on. “You talk about centralizing the location of the on-demand water heater. We were actually able to save money on the hot water runs because we planned so much in advance.”

Another benefit of these spaces is the ability to route fresh air ducts through the trusses. This is critical for high performance homes like this to eliminate moisture and mold growth.

The NEW VIKING
Combo-16
Framing & Sheathing on ONE Platform

• Manual Stops
• Stud Locators 16" and 24" o/c
• Manual Frame Nailing
• Quick Disconnect Air Fittings for Hand Tools
• Automated Sheathing Nailing - Simple to Use Controls - Tilt Nailing - High Load Coil Capacity - Infinite o/c spacing
• Quick Change Tool Mounts
• 2x4, 2x6, and 2x8 capable
• Programmable for Under and Overhanging Sheathing

Wall Panel Solutions That Fit Your Business Needs
Simpson Strong-Tie introduces its latest connector for valley trusses, the VTCR. It quickly installs on top of the roof sheathing into framing and eliminates the need to add a support wedge under the valley truss or to bevel the bottom chord to match the roof pitch.

- Single-sided installation for new construction or retrofit applications
- Clearly marked for fast pitch set up (pitches from 0 to 12/12)
- Installs with nails or screws for higher uplift loads
- Can be installed after the valley truss
- Uses fewer fasteners than the VTC2

For more information, visit www.strongtie.com or call a Simpson Strong-Tie® representative at (800) 999-5099.

The VTCR is available this spring.

Eliminating headers above window and door openings makes the energy envelope more efficient by replacing the wood with insulation, which has four times the resistance to heat flow. LEED awards credits for framing efficiencies like this. Sealant further reduces air leaks and helps seal the energy envelope.

Sacramento Habitat Home... Continued from page 15

Eliminate Headers Above Openings, Add Other Framing Efficiencies

While the raised heel trusses shown above didn’t earn any direct LEED points, other framing efficiencies do. For instance, getting rid of all headers above openings.

“There’s no need to have a header over windows, especially when the trusses are running the same direction as the window,” Scheel said. He explained that extra materials like this contribute significantly to increased energy consumption.

The project also earned points for: wall panel and roof truss packages, roof truss more than 16" on center (in this case truss spacing is 24" on center) and 2-stud corners.

For reader service, go to www.sbcmag.info/spc.htm

Another area to skim extra points from: A detailed framing document and cut lists or lumber order will get you two easy points.

**The Bottom Line:**

- 4 points awarded in MR1 for advanced framing practices.

**Affording the Cost of LEED Certification**

With the average monthly utility bill for Sacramento Habitat homeowners landing between $25 and $35, Wilson said it’s clear that building these homes to maximize energy efficiency pays off. “It’s usually not until new homeowners get the first couple bills that they realize how much they’re saving,” he said. “They are so grateful when that time comes.”

He explained that the fees of attaining LEED certification are paid for with grants from various organizations. But he acknowledges that without these grants, LEED certification may be cost prohibitive. “It wouldn’t be possible. But right now there are enough grants out there,” he said.

It’s also clear that using FSC certified wood in this home would not have made much of a difference. It certainly wouldn’t have contributed in any way to low energy bills, a more streamlined framing schedule, or a higher level of LEED certification. Aside from an extra LEED point or two, using FSC wood accomplishes one thing: higher material cost and ultimately higher cost to the end user. When the goal is affordable housing for people like Francisca Flores, certified wood doesn’t make the cut. 

SBC
Do you find yourself talking about lumber quality more now than you did a couple years ago? You aren’t alone. Concern over the quality of softwood lumber is an emerging topic for the industry, regardless of whether it’s MSR or visually graded.

We were asked to speak with companies to get their perspectives on the issue and share it with SBC readers to help the industry gain greater insight. Note that their views represent a small sample of people that have many years of industry experience, yet are not intended to be representative of the entire industry. Here are their five top concerns of component manufacturers on one hand and lumber producers/suppliers on the other hand.

Top 5 Component Manufacturer Lumber Quality Issues

1. Cull rates have risen significantly and steadily. Component manufacturers said there’s been a noticeable decline in the quality of the type of lumber readily usable for manufacturing trusses in the last five to seven years. They estimate culling anywhere from 15 to 40 percent of lumber they purchase, whether it’s MSR grades or visually graded. This is compared to an estimated 6 to 10 percent maximum cull rate, which had been typical in the past.

The reason for the increased cull rate stems from the need to reduce certain characteristics which have become more prevalent in the lumber supply, even though they remain within the existing parameters defined for each grade regarding maximum allowable defects. The existence of wane and knots in the plate area often results in increases in connector plate size and therefore cost. Too much wane means the plate size will need to be increased so that enough teeth are embedded into the plate area. Too many knots can yield the same result, but is more challenging due to the random nature of loose knots and knot holes. Some of the poor quality wood can be diverted for secondary uses like gable ends, wall studs etc. The amount of sorting makes for a very inefficient, labor-intensive process.

With current cull rates this high, some manufacturers stated it makes more sense for them to buy a grade up. But even then, there are no guarantees. The higher cull rates seem to occur in these grades: No. 2 & BTR, No.2, No. 3, 1650 and 2100.

2. Poor appearance. Component manufacturers said lumber just doesn’t look as good as it used to. Specifically, they’ve noticed more wane, knots, cracks and splits. Manufacturers noted MSR grades in the past have been known to be generally wane-free with few knots, but are now showing a larger amount of wane than expected.

3. Certain grades can’t be relied on for quality any more. Component manufacturers said it has become harder and harder to rely on certain grades like they have in the past. One example is that the quality of No.2 lumber appears more like a No.3 grade now compared to a stick of No.2 five years ago.

Manufacturers reported lately they’ve been “up-grading” to higher MSR grades to avoid the occurrences of wane and knots. Some manufacturers have completely eliminated grades like No.2 & BTR and 1650 from their inventory until the quality issues can be resolved.

4. Higher quality wood is being exported. There is a strong perception that lumber with superior visual quality is being sold in other markets—namely China, Japan and U.S. and Canadian “big box” stores where appearance is critical to generating high volume.

Component manufacturers therefore believe lesser quality lumber is being supplied to U.S. and Canadian construction markets, because there is really no other place to sell this lumber to.

If you want to go GREEN and save MONEY, Intelligent Building Systems has the solutions:

WallBatch
This powerful software product is designed for wall panel manufacturers, allowing them to save up to 30% of material usage per job. WallBatch is a lumber optimization program that generates detail cut lists, lumber costs and material pull sheets. It allows the user to have full control of how each project is cut and optimized. WallBatch provides such a high flexibility, with limitless saw setups and multiple batch capabilities; the user is in CONTROL on how they manage their material and savings.

Plant Net
This state of the art software solution was the first of its kind for wall panel manufacturing and has proven itself over the last 16 years. Plant Net provides panel production communication to a variety of stations on the manufacturing floor and in turn saves the user money by eliminating paper work, reducing training time, and reporting time studies while supplying a great visual aid to employees.

For more information on these cost saving software packages, please contact Alison Karrer @ 866-204-8046.
5 Lumber industry isn’t correcting the problem quickly enough. Component manufacturers are frustrated with lumber quality, and some feel that lumber producers are not working fast enough to address it. Many manufacturers have made adjustments in how or where they buy lumber. Some said they avoid wood from the provinces where the beetle kill is most profound, while others have become very choosy about the mills they purchase from. Some manufacturers have abandoned certain species or grades altogether to raise their chances of maintaining quality lumber supply.

Lumber isn’t specifically graded for components. Lumber producers believe that there is a disconnect between the commercial grading of lumber for general markets and the concept of grading lumber for a specific end use such as truss manufacturing. Producers want component manufacturers to understand that lumber grades were developed for a wide range of markets and sales opportunities. While the end use is important to utilization of the lumber purchased, the mills generally do not know the final market the lumber will be used in and therefore have a very difficult time meeting the specific needs of construction applications—particularly with the focus of solely truss and final market the lumber will be used in and therefore have opportunities. While the end use is important to utilization of grades were developed for a wide range of markets and sales wants component manufacturers to understand that lumber specific end use such as truss manufacturing. Producers Disconnect between the commercial grading of lumber for manufacturers have abandoned certain species or grades altogether very choosey about the mills they purchase from. Some manufacturers have made adjustments in how or where they buy the beetle kill is most profound, while others have become very choosy about the mills they purchase from. Some manufacturers are not working fast enough to address it. Many manufacturers are frustrated with lumber quality, and some feel that lumber producers are not working fast enough to address it. Many manufacturers have made adjustments in how or where they buy lumber. Some said they avoid wood from the provinces where the beetle kill is most profound, while others have become very choosy about the mills they purchase from. Some manufacturers have abandoned certain species or grades altogether to raise their chances of maintaining quality lumber supply.

Improved grading technology makes lumber more true to specific grades. Producers explained that advances in modern grading technology have helped narrowly define lumber grades per grading rules. Grading machines have laser scanners that collect strength and defect data on each board and compare the results to grade rules. Producers say new technology has made grading extremely accurate. Prior to the improved scanning technology, graders would make a grade judgment on a stick of lumber based on a visual inspection of maximum knots, warps, checks, splits, etc. Years ago, a visual grader may have downgraded sticks with certain characteristics to “play it safe.” For this reason, producers said visual graders may have been unintentionally inflating grades. Producers gave No. 2 & BTR as an example; ten or twenty years ago most of the lumber in this grade was probably BTR instead of No.2.

Today’s grading machines have removed the subjectivity in the grading process. They are calibrated so specifically that lumber is accurately sorted far closer to actual grading rule limits. Customers who regularly purchase No. 2 & BTR may see more No.2 sticks than BTR these days, which leads them to believe the quality of the lumber has declined. In reality, the marketplace is seeing the result of improved grading technology enabling more accurate identification of strength reducing characteristics.

Fiber quality today is not the same as it was five or ten years ago. Producers pointed out that one of the main factors contributing to lumber quality issues today is the pine beetle epidemic. They believe that the logs their companies harvest today are simply not of the same quality as they used to have because the beetle has killed roughly 70 to 80 percent of SPF standing timber stock.

The lumber industry is working on ways to address the issue, but it will take time. Lumber producers said if component manufacturers notice lumber quality issues on a consistent basis, they should not hesitate to talk with their suppliers to work through the issues being seen. They want to know if customers are unsatisfied, and want the opportunity to address the problem. They believe that communicating on this issue is important. It is also critical for component manufacturers to track cure rates. With tangible figures, salesmen and brokers have concrete data to present to their mills. Keeping accurate records of cure rates will put component manufacturers in a much better position.

Editor’s Note: The WTCA QC database has a lumber section that was created specifically for this purpose. Now that the lumber industry is aware of the extent of the quality issues, it will continue to take measures to improve the situation. Producers are confident that the marketplace will start seeing a noticeable improvement in lumber quality in the next six months to a year.
Parting Shots
Share your stories and photos with us! Send submissions to partingshots@sbcmag.info.

While traveling through southern Georgia, Glenn Traylor (ITW Building Components Group) ran across this project. The entire building is braced with ripped 1/2" x 2" x 24" OSB. “If the typical 2 x 4 or 1 x 4 braces are ‘killer cleats’ then this needs a new description,” he said.

Killer cleats, of course, refer to the temporary bracing practice of nailing wood spacer pieces to the top chord. When used alone without diagonal bracing, this can be very dangerous. Until sheathing and other permanent bracing is installed, the trusses are unstable without top chord diagonal bracing. They can bow out of plane and are subject to collapse.

“In order to succeed, our customers need to know they can count on us to provide what’s needed. Working with SBCA and becoming SCORE certified proves we are committed to excellence.”
– Steve Kennedy, Engineer/Training Manager, Lumber Specialties

Set your company apart with SCORE’s certification program that incorporates all of SBCA’s education and training programs – helping you implement cost-effective industry best practices. Learn more about options and how to get started at www.sbcindustry.com/score.php.

**Wall Panel Opportunities Come In Many Sizes.**

Whatever your opportunity, we can custom-build the equipment that will help you meet it. Whether it’s a sheathing station or a 70’ squaring table like the one we recently shipped to a Canadian plant, custom equipment to fit your circumstance provides manufacturing efficiencies to make your products competitive. In tight markets where you need to look at everything, the answers will be in the small details that add up to controlling your costs.

These machines were custom built to fit each customer’s needs in their plants:
ITW Building Components Group is proud to introduce our new line of Construction Hardware

It is time to get more out of the efforts you put into the design and build process. It is time to shake things up, to look at construction hardware in a whole new light. Our new line of more than 3,500 construction hardware items and powerful new software draw on our extensive engineering expertise. They are all geared to help you create more value for your customer!

Designing structural connections is the lifeblood of our business. Building professionals have consistently called on the component industry to supply the critical structural information they need to specify hardware - in fact, we have been calling out loads to specify custom and stock hangers for more than 40 years. So, while this is just the start of our brand of hardware, you can rest easy knowing our experts have experience and expertise to help you get the job done.

And that is just the start! The addition of construction hardware gives us a unique opportunity to be involved in every major part of the building industry. We now have the reach to deliver on the complete promise of whole house design - by realigning existing business systems and creating the missing links to tie together all the parts and all the players.

Our connections to Cullen hardware, Paslode, Duofast and other strategic partners have allowed us to fast-track a full line of “code accepted” products and we have no intention of slowing down. For nearly 100 years ITW has been providing game changing business to business solutions.

Call us to see how you can connect all the dots and start building!

Quality buildings start with smart design software and connections from...

ITW BCG Hardware
a division of ITW Building Components Group

www.itwbcghardware.com

Call Today! 800.521.9790

For reader service, go to www.sbcmag.info/itw.htm