STRUCTURAL BUILDING

COMPONENTS

THE FUTURE OF FRAMING

March 2012

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Assembling a Roof...

...from the Ground Up

Remembering a Quiet Hero

Plus...

The Power of BCSI

Readers Respond: Bearing Area

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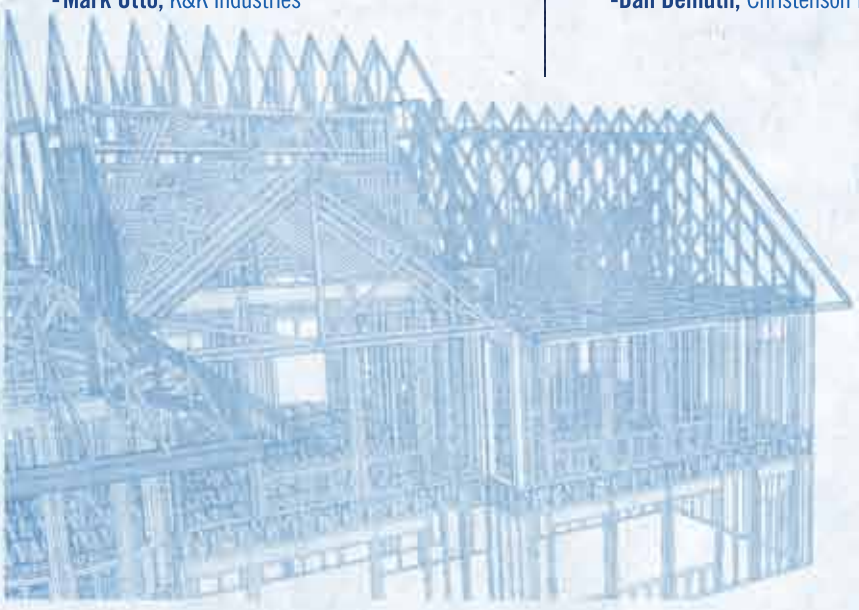

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STRUCTURAL BUILDING COMPONENTS™
THE FUTURE OF FRAMING

March 2012

www.sbcmag.info

contents

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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 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.

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editor's message

by Steve Stroder

BCSI – Shout It from the Trussed Rooftops

BCSI is a win-win: Component Manufacturers provide thoughtful best practices for installation, and construction professionals get industry guidelines for efficient, safe handling of components.

This issue's focus on handling, installing and bracing naturally makes me think of *BCSI: Guide to Good Practice for Handling, Installing, Restraining & Bracing of Metal Plate Connected Wood Trusses*. It's hard to believe, but BCSI will turn 10 next year. Shoot, if it were a kid, it would already be in grade school. Much like a son or daughter, we've watched BCSI grow over the years. From a small booklet, this guide has evolved into the B-Series Summary Sheets, summary sheets bundled into multiple JOBSITE PACKAGE formats, online Component Technology Workshops, and the current, much larger, 8.5" x 11" BCSI book. In 2008, SBCA's Cold-Formed Steel Council released a steel version based on the same best practice concepts of its wood predecessor. In just under a decade, BCSI has certainly come a long way.

Developed for the structural building components industry by a diverse group of industry members, including specifiers, builders/framers and component manufacturers, BCSI provides tremendous value. To put it simply, BCSI is a win-win: Component manufacturers provide these best practices to the market to help with better handling and installation of trusses, and construction professionals get industry guidelines for the efficient and safe handling of components.

PERFECTO TRUSS

Customer: Big Green Builder, Inc.
Contact: Dave
Job No.: 1280
Date: 3/1/2012

QUANTITY	DESCRIPTION	PITCH	OVH	UNIT PRICE*	TOTAL Regular Truss Package*
39	30' Common Truss	6	12/12	xx	$xxxx.xx
2	30' Hip sets	6/8/6	12/12\12	xxxx	$xxxx.xx
2	20' Scissor Gable	8/4	12/12	xx	$xxxx.xx
8	20' Scissor Truss	8/4	12/12	xx	$xxx.xx
2	20' Girder truss	8	0/0	xxx	$xxx.xx
2	20' Valley Sets	8	0/0	xxx	$xxx.xx
1	Jobsite Package			$x	$x.xx
				TOTAL:	$XXXXX.XX
				FSC-Certified Package**:	$xxxx.xx
				[Add other value-added package options]:	$xxxx.xx

Figure 1. Sample invoice that includes the JOBSITE PACKAGE as a line item.

Chances are, if you're a component manufacturer (CM), you already know about the importance of BCSI. The book, B1 on temporary bracing, B3 on permanent bracing and other BCSI materials are part of our everyday vocabulary. They have become so commonplace to us that sometimes we take it for granted and forget that not everyone knows BCSI's contents and how best to use them for everyone's benefit. It's important to remember that when some people hear terms like "B7" or "B9," they think of vitamins, not parallel chord trusses or multiply girders. Although much like a vitamin does a body good, if you take and properly use B7, B9 or any of the other BCSI materials, they can do a lot of good for your business.

CMs don't always use this valuable tool to its full advantage. We need to continue to get the word out. Shout it from the trussed rooftops—"BSCI offers bracing best practices that benefit *everyone!*"

at a glance

- ❑ In just under 10 years, BCSI has evolved from the booklet into Summary Sheets, JOBSITE PACKAGES, online courses and the much larger book.
- ❑ Including the JOBSITE PACKAGE or BCSI book on invoices is an excellent best practice in case a project heads in the wrong direction.
- ❑ SBCA Chapters have developed great relationships and reaped many benefits for their time and effort through BCSI educational programs in their markets.

There are a number of ways to educate your market about BCSI and build good will to boot. Many CMs get this information out in the market every day by including an SBCA JOBSITE PACKAGE with each project. In addition to the package, some manufacturers also give at least one BCSI book to every customer. Many CMs also include the JOBSITE PACKAGE and book as a line item on their invoices and charge or mark up a bit if they choose (see above). Remember, BCSI assures proper installation and bracing if used and will prevent collapses or fall-downs, and therefore minimize property damage and bodily injury. This can be a priceless defense if a truss collapse occurs due to inadequate bracing and anyone tries to point a finger and blame the CM.

Some CMs help their sales people get in front of customers by providing BCSI as a lunch and learn. This format gets everyone talking about efficient framing using components, and good ideas generally come from these events. SBCA staff is always

Continued on page 8

looking for ways to improve BCSI, so please forward any ideas that come your way to bcsi@sbcindustry.com.

In many cases, SBCA Chapters are on the frontlines in bringing this vital information to the marketplace. Along with passing on critical best practice information, it's amazing what offering a free BCSI book to a professional can lead to:

- Since BCSI was first published in 2003, SBCA – Northeast has distributed more than 2,600 copies, not counting the copies purchased by individual members. In fact, anyone who requests information on our industry from the Northeast Chapter will come away with a chapter membership roster and a copy of BCSI. That's a pretty good deal for just asking a question!
- The Missouri Truss Fabricators Association (MTFA) brings BCSI information to professionals live and in person. Over the past few years, the chapter has developed strong relationships in Johnson County, MO, and given presentations on BCSI-related topics at a number of the county's Contractor Licensing Educational Seminars. The presentations were so well received that the county's building officials committee unanimously recommended forming a partnership with the chapter for a series of training classes. MTFA also worked on developing truss documentation best practice guidelines, which are now recognized by the Johnson County Building Officials Association.
- The Capital Area Chapter has hosted a booth at the Annual Fire and Emergency Services Higher Education (FESHE) Conference held by the U.S. Fire Administration National Fire Academy in Emmetsburg, MD, for the past four years. The chapter has supplied BCSI books and Carbeck's Wood Truss Construction & Fire Performance CDs. Following the 2010 conference, the show featured the Carbeck education program in its electronic newsletter. Within hours, SBCA started receiving requests for Carbeck CDs—90 in the first day!

From personal experience, I can say BCSI has provided a great deal of support to our managers and design staff around the country, ranging from simple bracing questions to more complex storage, lifting, truss flying and fall protection questions. The most notable question BCSI has helped us answer in recent history came from a builder on the east coast. This customer was applying significant pressure on our manager, asking us to provide documentation saying he could use 1x4s for continuous lateral restraint and diagonal bracing. He also said that this practice was allowed by our competitors. After digging into this issue, we found out that all plate suppliers say that 1x4 "stress rated boards" can be used. BCSI clearly lays out the industry best practice:

> Minimum size Bracing and Lateral Restraint material is 2x4 stress-graded lumber, or approved Proprietary Metal Restraint/Bracing, unless otherwise specified by the Building Designer.

Our homework found that 1x4 is readily available with no grade stamp but no one makes 1x4 stress rated boards. After gathering the facts and giving that information to our customer, the builder was able to make the necessary changes in the field, preventing a potentially costly compliance problem if something were to go wrong on the jobsite. Again, if you have any new ideas that you've run into like this, we would appreciate hearing them.

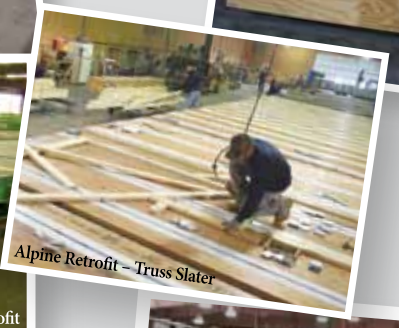
BCSI—great stuff and just another outstanding tool in our tool box courtesy of SBCA. So let's get out there and educate and remind construction professionals about BCSI. It's a win-win for all. SBC

What do all these tables have in common?

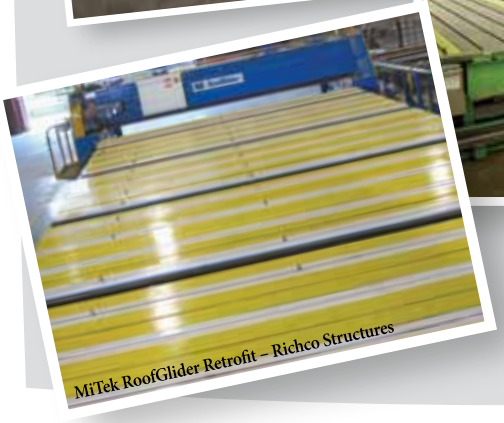

Alpine, MiTek and Wood table.


Pacific RT Retrofit – High Country Bldg. Components


Wood Table Retrofit


Alpine Retrofit – Truss Slater


Pacific 14RT Jet-Set Retrofit Pulte Homes


MiTek RoofGlider Retrofit – Richco Structures


Pacific 14LT Retrofit – Richco Structures


Tee-Lok Retrofit Southern Components

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by SBC Staff

Readers Respond – Bearing Area

Two engineers give their perspective on how to deal with insufficient bearing area.

The November 2011 ***Technical Q&A*** *discussed options to consider when dealing with insufficient bearing area. We received some great feedback, which warranted revisiting this topic. Below are letters from two engineers involved in the design of structural building components who give their opinion and outline their preferred methods for resolving insufficient bearing area. Their suggestions offer an engineer's perspective on how component manufacturers can provide customer service on projects, but for any option, manufacturers must make their own decision based on their business, the project, and the component manufacturer's and truss designer's responsibilities per TPI-1 and the IBC.*

Dear ***SBC,***

The article was very informative and presented some excellent insight. Although wood-bearing failure is rarely catastrophic, it is a design consideration that must be investigated because it can result in an undesirable finish appearance. This should receive more attention by truss technicians, especially in "flagging" minimal bearing lengths or providing a suggested solution.

Photo 1 shows the dramatic result that may occur when there is insufficient bearing area. Photo 2 shows a subtler sheet rock or joint tape crack that is localized to each truss location along a bearing wall. These are real performance issues that truss technicians should be proactive in helping to solve when the software alerts them to this issue.

Photo 1. Significant sheet rock bulging and cracks resulting from insufficient bearing area.

Photo 2. Smaller sheet rock crack resulting from insufficient bearing area.

I applaud you for pointing out that both truss and wood plates must be checked. My experience has shown that many truss technicians focus specifically on the truss to eliminate insufficient bearing without taking into consideration the support structure. It could be construed as very bad form, and it certainly is a customer disservice to solve the truss side of the equation while "hiding" a potential wood plate bearing problem.

Although the article presents solutions, it's prudent to point out the challenges associated with some. Bearing blocks may not be installed when required, and when present, may be mismatched to the truss chord—either installed slightly below or above the bottom chord. Consequently, a 1-½ in member bears on the plate until deformation, which only then engages the other member(s). In addition, fastener

at a glance

- Two engineers involved in the design of structural building components respond to a previous Technical Q&A on bearing area.
- Both give their perspective on bearing area and ways that component manufacturers and truss designers can help engineers with this issue.
- Each engineer discusses his preferred method for dealing with insufficient bearing area.

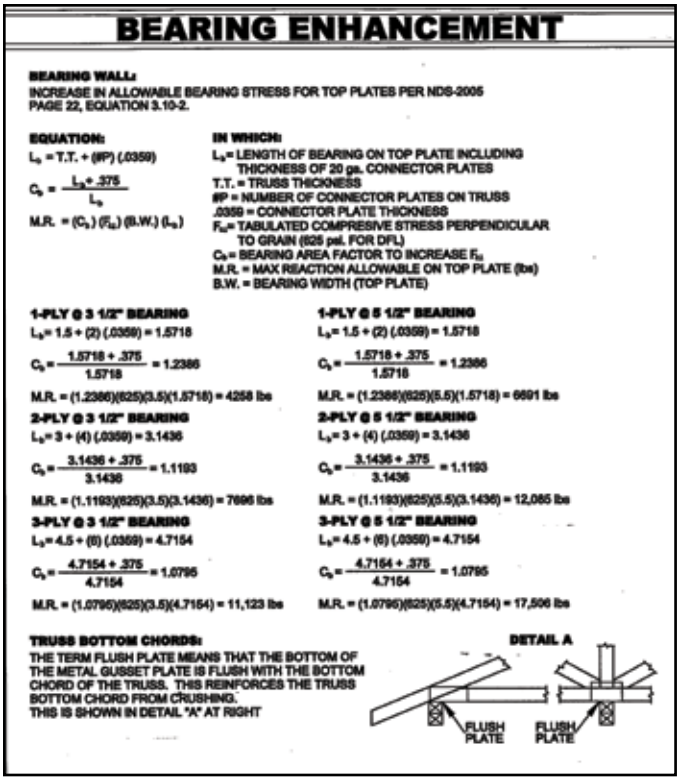
quantity, location and size often do not meet what is specified.

Another option is compression parallel to grain, which extends a vertical member through the truss, cutting the wall plates, and extending a stud up to the truss. The design professional of record should be involved when proposing this solution, since diaphragm design using the wall plates may be adversely affected.

Regarding TPI 1 Section 7.3.8.3, it is my understanding the metal truss plates must extend across the full bearing plate width to permit a bearing capacity increase for truss lumber. Truss technicians need to know this alternative requires metal plate placement within ¼ in of the lumber edge contacting the bearing surface, which will likely require larger butt cuts to accommodate the metal plate width.

Which option works best? It is my experience a bearing enhancer is the best solution. Enhancers are typically listed in a code acceptance report, and published design values make them easy to size using the catalog or design software. Field inspections are simplified—enhancers and their fasteners are either present or missing. Inquiries posed by building code officials, contractors, framers or the building designer can easily be addressed using the manufacturer's published literature and the truss design drawing. Questions about installation, cut top plates and top plate lumber grades are eliminated, which allows the truss manufacturer to focus on what they do best—selling, designing and fabricating trusses!

Respectfully,
Scott D. Coffman, P.E.



BEARING ENHANCEMENT

BEARING WALL:
INCREASE IN ALLOWABLE BEARING STRESS FOR TOP PLATES PER NDS-2005 PAGE 22, EQUATION 3.10-2.

EQUATION:

L_b = T.T. + (#P) (.0359)

$C_b = \frac{L_b + .375}{L_b}$

M.R. = $(C_b)(F_{cb})$ (B.W.) (L_b)

IN WHICH:

L_b = LENGTH OF BEARING ON TOP PLATE INCLUDING THICKNESS OF 20 ga. CONNECTOR PLATES
T.T. = TRUSS THICKNESS
#P = NUMBER OF CONNECTOR PLATES ON TRUSS
.0359 = CONNECTOR PLATE THICKNESS
F_{cb} = TABULATED COMPRESIVE STRESS PERPENDICULAR TO GRAIN (625 psi. FOR DFL)
C_b = BEARING AREA FACTOR TO INCREASE F_{cb}
M.R. = MAX REACTION ALLOWABLE ON TOP PLATE (lbs)
B.W. = BEARING WIDTH (TOP PLATE)

1-PLY @ 3 1/2" BEARING
L_b = 1.5 + (2) (.0359) = 1.5718
$C_b = \frac{1.5718 + .375}{1.5718} = 1.2386$
M.R. = (1.2386)(625)(3.5)(1.5718) = 4258 lbs

1-PLY @ 5 1/2" BEARING
L_b = 1.5 + (2) (.0359) = 1.5718
$C_b = \frac{1.5718 + .375}{1.5718} = 1.2386$
M.R. = (1.2386)(625)(5.5)(1.5718) = 6691 lbs

2-PLY @ 3 1/2" BEARING
L_b = 3 + (4) (.0359) = 3.1436
$C_b = \frac{3.1436 + .375}{3.1436} = 1.1193$
M.R. = (1.1193)(625)(3.5)(3.1436) = 7696 lbs

2-PLY @ 5 1/2" BEARING
L_b = 3 + (4) (.0359) = 3.1436
$C_b = \frac{3.1436 + .375}{3.1436} = 1.1193$
M.R. = (1.1193)(625)(5.5)(3.1436) = 12,085 lbs

3-PLY @ 3 1/2" BEARING
L_b = 4.5 + (6) (.0359) = 4.7154
$C_b = \frac{4.7154 + .375}{4.7154} = 1.0795$
M.R. = (1.0796)(625)(3.5)(4.7154) = 11,123 lbs

3-PLY @ 5 1/2" BEARING
L_b = 4.5 + (6) (.0359) = 4.7154
$C_b = \frac{4.7154 + .375}{4.7154} = 1.0795$
M.R. = (1.0796)(625)(5.5)(4.7154) = 17,506 lbs

TRUSS BOTTOM CHORDS:
THE TERM FLUSH PLATE MEANS THAT THE BOTTOM OF THE METAL GUSSET PLATE IS FLUSH WITH THE BOTTOM CHORD OF THE TRUSS. THIS REINFORCES THE TRUSS BOTTOM CHORD FROM CRUSHING.
THIS IS SHOWN IN DETAIL "A" AT RIGHT

DETAIL A

Figure 1. Bearing improvement scheme used by Norman Scheel. (See online version of article for full pdfs of Figures 1 and 2.)

Dear ***SBC,***

I read your article on bearing area in the November 2011 issue. While I am not in particular agreement of the 18 percent increase you mention, this is only because it doesn't go to the 23 percent I need to get the maximum improvement for the 1-½ in bearing length (along the top plate). Instead, I have always specified that the plates be flush with the bottom, and this will (I assume) strengthen the allowable bearing stress by at least 23 percent.

I am of the opinion that the truss industry (fabricators and designers) are not helpful enough to the rest of the building team when it comes to bearings. I say this not only for bearing, but also for reaction uplift numbers that the software renders, which is many times unrealistic and erroneous due to the "infinitely rigid" assumptions the software must make to analyze the trusses.

The bearing improvement scheme (see Figure 1) I have used for 30 years increases the allowable reaction for a top plate as allowed by the code referenced National Design Specification (NDS®) for Wood Construction published by the American Wood Council, using the formula for increasing the bearing stress as allowed for bearing lengths less than 6 in [see NDS Section 3.10.4 (see Figure 2)]. The bearing surface of the truss is reinforced with flush plates, and this is assumed to strengthen the bottom surface of the truss beyond the $F_{c(perp)}$ of the top plate by more than 23 percent.

The example in the **Technical Q&A** showed the bearing allowable reaction would be increased (for Douglas Fir) from 3,280 lbs to 4,258 lbs. I feel that many times trusses are unnecessarily doubled only to account for the reactions. Builders are not friendly toward making walls bigger for the truss fabricators. They are okay with adding a post, but not changing from 2x4 to 2x6 walls or 2x6 to 2x8 walls.

Don't consider this as a critique of your work—just some information to put in with all the other comments you will get on this.

Norman Scheel, S.E. SBC

3.10.4 Bearing Area Factor, C_b

Reference compression design values perpendicular to grain, $F_{c\perp}$, apply to bearings of any length at the ends of a member, and to all bearings 6" or more in length at any other location. For bearings less than 6" in length and not nearer than 3" to the end of a member, the reference compression design value perpendicular to grain, $F_{c\perp}$, shall be permitted to be multiplied by the following bearing area factor, C_b:

$$C_b = \frac{\ell_b + 0.375}{\ell_b} \qquad (3.10\text{-}2)$$

where:

ℓ_b = bearing length measured parallel to grain, in.

Figure 2: NDS® Section 3.10.4 Bearing Area Factor.

Assembling a Roof, from the Ground Up

by Sean D. Shields

Traditionalists would say: Prepare the foundation, install the first floor, erect the walls, and then build the roof. That's all fine and good; most houses should probably be built in this manner for one reason or another. However, one could argue that OSHA's new fall protection rules raise the possibility it may actually be easier to build the roof before the walls, or at least, at the same time.

The BCSI-based, step-by-step roof component installation process (see top sidebar on page 13) assumes a traditional approach to installation, but one viable alternative is to do a portion of the roof assembly on the ground first, eliminating the need to work within OSHA's fall protection guidelines. We will look at the conditions that may encourage a framer to choose this non-traditional approach, the process the framer should go through during ground assembly, and finally, issues to consider during installation.

To Ground Assemble, or Not to Ground Assemble?

There are several factors that may lead a framer to choose the ground assembly method for roof component installation. The first, and most important factor, is means. In order to even consider assembling a portion of the roof on the ground, there needs to be sufficient space on the jobsite to accommodate setup. This approach also generally requires the use of a crane onsite, given a forklift typically will not have the lifting capacity for the completed system (although it has been done, see Photo 1).


Photo 1

In most cases, finding space should be possible, whether it's on the driveway or access area, or a vacant area of adjacent land. The most important thing to consider when choosing an assembly area is that the space needs to be large enough to accommodate a five-truss assembly, and while the ground does not need to be level, it should be relatively flat to make set up of the bearing locations easier. One alternative to this, if space is limited, is to do the roof assembly on top of the installed floor deck (see bottom sidebar on page 13).

Since ground assembly does not require the use of conventional or alternate fall protection, and the assembled roof system can be used as an anchorage point for conventional fall protection once it is installed, framers may choose this method because it makes the fall hazard identification and mitigation problem much easier to solve.

Continued on page 15

As OSHA continues to ramp up enforcement of these new fall protection rules on residential jobsites, more and more builders are asking their component manufacturer suppliers for advice on how to install roof components and remain in compliance with the law. In response, SBCA has worked with OSHA to develop an online step-by-step approach to installing roof components under the new standard (sbcindustry.com/fp). This website also has a template alternate fall protection plan for framers to use when assessing fall hazard mitigation on a jobsite.

At BCMC Build 2011 in Indianapolis, IN, Blenker Building Systems provided the lead framing crew for the two-story charity build. OSHA had recently enacted its new fall protection standards, so Blenker chose to assemble the roof system on the installed floor deck (see photos above). This approach had two significant advantages: one, the floor deck was already level and provided excellent stability to the system as bracing and sheathing was installed, and two, the floor deck already provided a top plate layout, which eliminated the need for bearing location measurements.


Photo 2

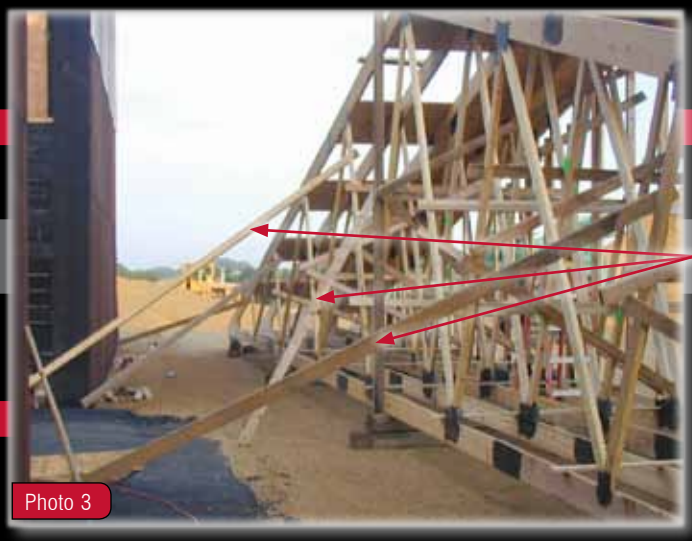


Photo 3


Photo 4

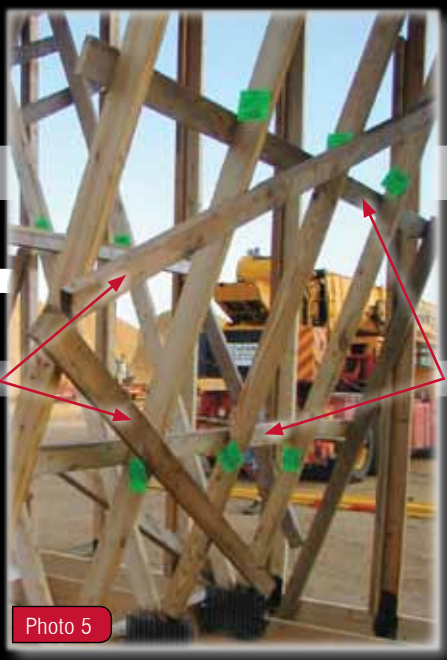


Photo 5


Photo 6


Photo 7

Assembling a Roof...

Continued from page 12

How to Do Ground Assembly

Once a relatively flat space is identified as the ground assembly area, two bearing locations need to be set up to duplicate the bearing condition layout the assembly will be installed upon. In setting up the bearing locations, accurate measurements of the bearing configuration is vital, as well as ensuring that they are plumb, level and square. (See Photo 2.)

The first truss in the system can then be placed on the bearing locations and braced to the ground. Ground bracing should be done in accordance with the instructions contained in the BCSI-B1 Summary Sheet to ensure the first truss is stable and plumb. (See Photo 3.)

Then the next truss can be set using either 2x4s or other lateral restraint methods, again applied in accordance with B1 instructions. While setting the second truss, and the remaining three trusses, ensure each truss is plumb and spaced accurately before moving on to the next truss. (See Photo 4.)

Once all five trusses are set, install all lateral and diagonal bracing within the web members in accordance with either the instructions contained in the B3 Summary Sheet or a predetermined bracing plan. (See Photo 5.)

Photo 8

After the system is restrained and braced, apply sheathing to the top chords, starting at the peak and moving toward the heel using either 4x8 or 4x4 sheets of sheathing, in order to alternate the sheathing pattern. (See Photo 6.)

With the sheathing applied, hoist the assembled system in place and install on the top plate. (See Photo 7.)

Once the ground assembled roof component system is installed, install ground bracing to the first truss in the system as outlined in B1. This assembly can be used as an anchorage point for installing conventional fall protection. Each subsequent truss can then be hoisted into place, installed and braced. (See Photo 8.)

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Assembling a Roof...

Continued from page 15

After each two additional trusses are installed, staggered 4x8 sheets of sheathing should be installed and fully nailed off. Application of the bracing and sheathing to the roof system will provide the necessary stability to move the anchorage point, as necessary, to complete installation of the roof. (See Photo 9.)


Photo 9

Additional Considerations

Ground assembly is relatively straightforward, but there are some additional factors to consider that may alter the assembly plan from job to job. The size and span of the roof components will have a significant impact on the bracing plan and the ground bracing necessary to provide stability to the system during assembly. In addition, as the trusses increase in size, additional rigging, including spreader bars, may be necessary to ensure stability of the system while it is hoisted into place. You will also need to ensure the crane equipment, and its setup on the jobsite, is adequate to safely lift the system into place.

Different roof configurations will have an impact as well. Ground bracing and installation will change depending on the first truss in the system, whether it is a gable end, a hip end, etc. In every case, the framer needs to have a ground bracing plan, as well as a truss lateral restraint and system bracing plan, in place prior to starting the ground assembly.

Finally, it's important to remember correct installation and use of all fall protection equipment is solely the responsibility of the framer as part of their job-specific fall protection plan. Individual structural roof components are not designed to act as part of a fall protection system. Further, anchorage points should be determined by a qualified individual employed by the framer or building contractor, again as part of the job-specific fall protection plan. SBC

SBCA Legal & Technical Fund

In preparation for the June 1 deadline for the design value change of No. 2 2x4 Southern Pine, SBCA is developing recommendations for truss and component manufacturers. Due to the additional resources used for the unexpected Southern Pine lumber issue, SBCA has started a legal and technical fund to help offset the costs. Support from donors helps the association move forward and continue to advocate for the structural building components industry on this and future potential changes to design values. SBC

To view a list of donors or to make a contribution to this fund, visit:

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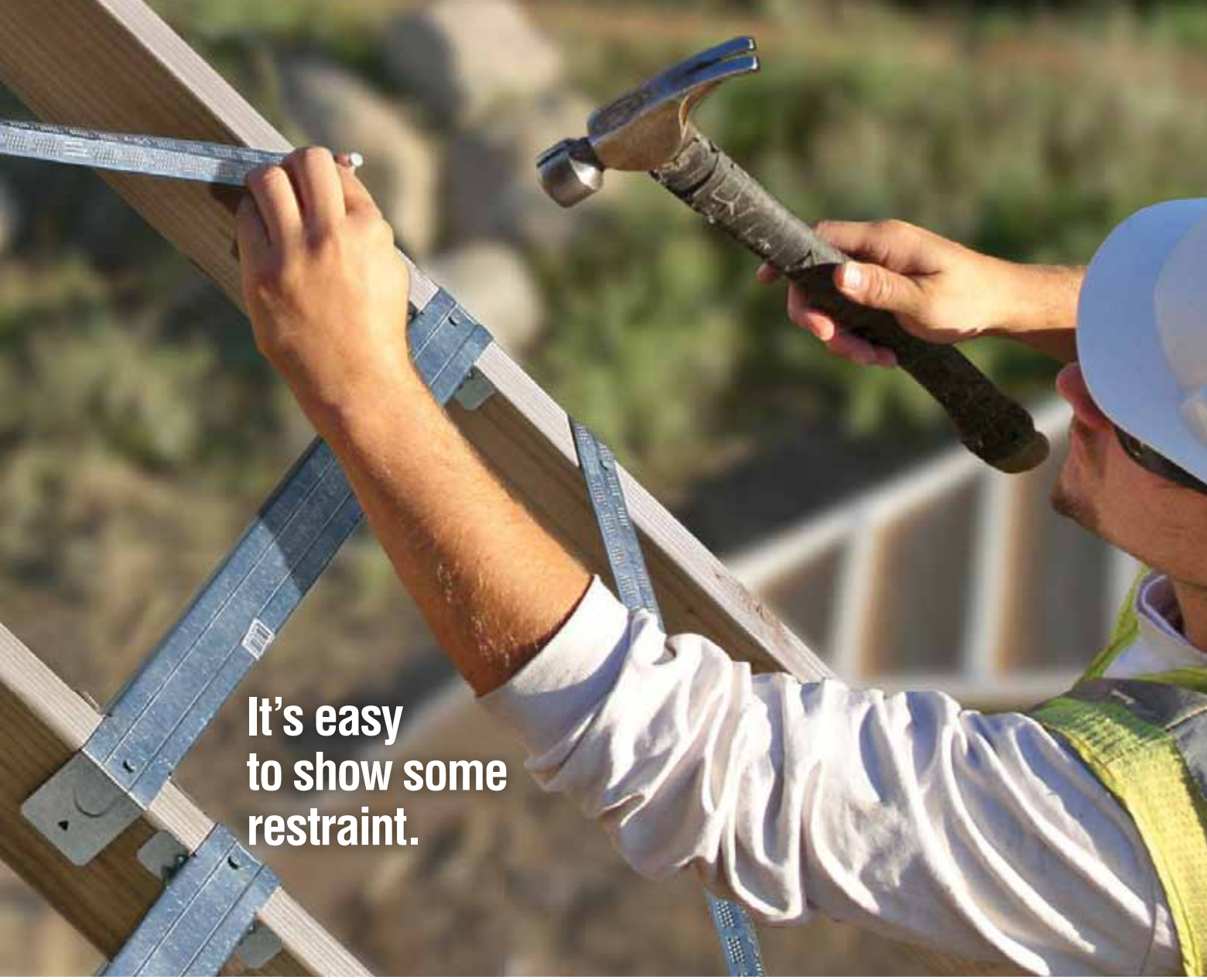

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The Quiet Hero

Remembering Don Hershey

"I have always believed that a person wants to do a good job."

by Sean D. Shields

The structural building components industry lost one of its greatest champions, Don Hershey, when he passed away at home last November. No matter who you talk to that knew Don throughout his almost 48 years in the industry, every one of his contemporaries holds a deep sense of unreserved respect for him.

He was intelligent. John Herring (A-1 Roof Trusses), who served as WTCA President just two years before him, said, "Don was a uniquely intelligent individual, who had the ability to guide and influence people in the necessary direction in a way that was completely unselfish. His fingerprints will be left on this industry forever."

He was fair and caring. Tom Manenti (MiTek), who knew Don for more than 30 years, said, "On a professional basis, Don was a deep thinker and very fair minded. On the personal side, he was a very sensitive person. He was very straightforward, but underneath he was very sensitive and caring."

He was a man of faith and loyalty. Longtime friend and peer, Rip Rogers (Trussway, retired), said, "Don was a man of strong faith and conviction. His loyalties started with his family, his company, and then the association. His word was his bond."

He was a competitor. One of his peers in the Chicago market, Scott Arquilla (Best Homes, Inc., retired), said, "I always thought Don was a great competitor because he always wanted to make money on every job. He didn't believe we should 'practice' building trusses."

He was a quiet contributor. "He was a monument of a man, and yet a quiet hero," said Bill Black (Automatic Stamping Co.), who worked with Don over several decades. "I don't know of anyone who gave as much as Don did to the industry."

Learning the Industry

Don started in the wood truss industry in 1963, working nights cutting hip ends at Imperial Components in St. Charles, Illinois. Imperial, started by Dave and Henry Chambers, was one of the first truss plants in the United States. Don noticed that an automated gantry table wasn't being used, because most of the guys on the production line avoided the "new technology" in favor of traditional hand assembly. Don went to Dave and suggested he could double production with less workers. Don's

Don was a family man and the truss industry was a family business. His oldest son, Ben, served as president of SBCA in 2009 and his youngest son, Keith, is currenty Director of Research & Testing at the SBC Research Institute (SBCRI). Don is pictured front left in 2010 with his wife Kathy, Keith (back left) and Ben (back right). The photo on the right was taken in 1979 and includes his middle son, Alan (center), who passed away in December 2000.

youngest son, Keith Hershey (SBCRI) recalls, "Dave told my father that if he could do that, he would offer him the chance to become a part owner of the company."

Don set to work getting the automated gantry table up and running and training employees how to use it. That change, along with additional modifications he made to the production process, proved successful. From that point on, Don purchased as much stock in the company as he could every time he was given the opportunity, eventually buying the company outright in 1991.

In the intervening years, Don took on more and more management of the engineering and production side of the company. In an interview with ***SBC Magazine*** in 2003, Don provided a glimpse into his management style, "I have always believed that a person wants to do a good job. Fundamentally, a manager's responsibility is to make it available for them to do a good job—provide them with the right equipment...the right atmosphere...the right information...the right training. If you do that, people want to do a good job."

Don's oldest son, Ben Hershey (The ReWall Company), pointed out that Don had on his desk for many years a quote by Charles Swindoll, "We are all faced with a series of great opportunities brilliantly disguised as impossible situations." Ben said, "Dad applied Swindoll's perspective to his management style, which guided much of what he did and said."

A good example of Don's unique approach is in how he chose a plate supplier. Around 1980, Manenti was a sales rep for Gang Nail based out of South Bend, IN. "At the time he bought truss plates from Alpine, which had a stamping plant nearby," recalled Manenti. "But Don went through a very elaborate process to evaluate whether he would switch." This was at a time before Excel spreadsheets, and there were 24 members of the Truss Plate Institute (TPI). Yet, Don created a paper spreadsheet on accounting ledger paper that had each company on it and compared several criteria, including supply, quality, sales response, engineering, holding power of the plates, etc. "That document covered most of the desk," said Manenti.

He invited a sales rep from each company, including Manenti, to come in and give a presentation on their product. In the end, Don chose to stay with Alpine, but he did something very unusual. "He called me up to tell me he was sticking with Alpine, but he invited me back to talk about why we hadn't been chosen," said Manenti. "When we met a few weeks later, he pulled out that spreadsheet and showed me how we scored, and, more importantly, where we could improve for our other customers. I was a rookie salesman, but that meeting gave me a great deal of confidence. It inspired me to be better."

It is telling that in the same 2003 ***SBC*** interview, Don said essentially the same thing about Manenti: "The salespeople from the different plate suppliers were the best teachers for me in the industry....I always looked at an interview with a salesman as an education....I felt I took more from the conversation than they took from me."

Joining WTCA

Dave Chambers was heavily involved in the early years of the Wood Truss Council of America (WTCA eventually became the Structural Building Components Association [SBCA]), but Don was initially reluctant to get involved himself. A mutual friend, Rip Rogers, remembers having several conversations with Dave about how to get Don plugged into what they were trying to accomplish through WTCA. "Dave told me I had to convince Don, because Don wouldn't do it otherwise," said Rogers.

Eventually, Rip succeeded in talking Don into traveling to Dallas to join him and a few others for a meeting to discuss issues WTCA was facing at the time. "I remember asking him to just come on down and see what we were doing, no

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Left: Don congratulating A. Carol Sanford after he was presented the Double-Decade Achievement in Housing Gold Award. **Center:** Don celebrating his 45 years of service anniversary in 2008. **Right:** Don receiving his SBC Industry Leadership award at BCMC in 2009 from SBCA Executive Director Kirk Grundahl.

The Quiet Hero • Continued from page 19

pressure," said Rogers. When Rogers took him back to the airport after the meetings, the two of them talked, and Don indicated he was on board. Rogers recalled, "he said, 'I knew when we said grace before dinner you were men I needed to work with.'"

Don made an impact in the association almost immediately. He was extremely vocal about what he thought the association needed to do to succeed. Arquilla remarked, "I believe Don had an innate ability to look at the industry from 'above' and provide his counsel about anything and everything that affected the structural components industry."

He was just as vocal about individual companies as he was about the association. "Don was never shy about giving anyone who asked for his opinion his honest and best answer," said Arquilla. "It didn't matter who it was, he simply felt it was his obligation to let others learn from his mistakes and experiences."

Leading WTCA

In 1992, Don was elected President of WTCA. Many of his contemporaries commented there could not have been a better person for the job at the time. One of Don's peers, Bob Ward (Southern Components), commented, "The main thing I remember is that Don inherited the Presiden[cy] when the association was going through a tough financial crisis. He took control and moved WTCA through it with extreme diligence. He was the right person, right place, right time."

WTCA was still searching for its identity after it was separated out from under TPI, and finding adequate funds to pay for projects and outreach efforts on behalf of the industry was difficult. Fortunately, as Ward pointed out, "Don Hershey took home every project with commitment, dedication, energy and solid determination to do what was best for the industry."

Regarding Don's leadership approach, Rogers said, "Don set the pace for a lot of people to be involved in the association not for your own company but for the good of the industry. He raised the level of professionalism." Under Don's leadership, WTCA strove to build a stronger working relationship with TPI. Rogers added, "Don's approach with TPI was not to have our way, but to have the two organizations aligned. Ultimately, he wanted both sides to succeed together."

In his 2003 interview with ***SBC***, Don gave insight into why he was so focused on the people involved in the two associations, "I don't think you can underestimate the value of people. I feel that [an organization] reflects this from the top down, and the leader has to care about people. If you don't care about people, you just won't build loyalty and trust." It was this kind of leadership approach that convinced the WTCA Board of Directors to elect Don to a second term in 1993.

Manenti may have summed up the challenge best, "Don exhibited exceptional leadership. Not only was he running his own business, but he took on this huge burden for two years of trying to bring WTCA back from near financial disaster, and ultimately set it up for future success."

Testing & Engineering

Don had an engineering background and a reputation for challenging engineers and his design staff. "Dad always felt that we, as an industry, were constantly guilty of putting engineering and book knowledge ahead of practical knowledge," said Ben Hershey. "He always came down on the side that we should test it first, apply common sense, then bring the engineering in to explain what we saw." It was no surprise that Don was one of the leading advocates for the development and construction of the Structural Building Components Research Institute (SBCRI), in order to have testing that would benefit the entire industry.

His focus on engineering coupled with practical testing enabled Don to eventually develop two patents, one for the purlin truss, and another for a trimmable-end floor truss. In 1979, Imperial purchased TruTrus in Arizona and hit the Southwest market at the perfect time. Through the development and testing of the purlin truss, the business was able to compete effectively against metal bar joists.

Beyond product development, Don had a keen sense for the capabilities of structural components. As another of his contemporaries, Black remembered, "He ate, slept and breathed

In addition to his work for SBCA, Don served the industry through a variety of innovations and inventions. While the list may not include everything, his family recalls the following contributions:

1. Worked with Stan Suddarth at Purdue University on floor truss analysis
2. Integral in the first Wood Truss Handbook (Ben has childhood memories of it scattered on the dining room table.)
3. First commercial long-span, high-load truss (warehouses and industrial buildings, retail stores) Purlin Truss
4. Glued Laminated Guard Rail Post (see photo)
5. Trimmable End Floor Truss (Patent)
6. Hybrid Purlin Truss (Patent)
7. Use of low structural value Ponderosa Pine in Header and Laminated Beam Applications
8. High Speed Floor Truss Production
9. First use of manufactured finger-joined lumber in a truss application

roof trusses. He was a solution finder. In the engineering realm, he helped develop things never seen before."

Black recalled one time when he wanted to test a series of plates for a floor truss application. He had Don build the trusses in Arizona and ship them to him. "I had three professional engineers and a 100-ft test rack all set up when Don arrived with the trusses," said Black. When they started loading up the first floor truss, it was clear the joints weren't making it. "Don understood why it didn't work, and he shut down the test before they broke the trusses. He was able to, in his head, work through plate sizes to find the strength he needed."

Don was also known for his constant use of napkins and paper to draw out a new idea and discuss them no matter where he was. "I know that there are many new ideas and designs that were left on the table at a restaurant," said Ben. "Dad would sketch something out and then re-think that idea several times before he would put it on paper."

Conclusion

In 1995, Don was inducted into the WTCA Hall of Fame, and in 2009 he received the SBC Leadership award for his excellent service to WTCA and the entire industry. He remains the only person to serve as President of the association twice. Yet, it is very clear, Don never did anything for recognition. All of his peers agree that Don approached each industry challenge with the mindset that a "rising tide raises all ships." Ben agreed, stating, "Whatever I was doing, whether it was running a company or serving the association, Dad would remind me that it is more important to share than it is to keep something to yourself."

He wanted everyone to benefit from the advancements occurring in the structural components industry, and he knew more could be accomplished by working together rather than apart. Herring pointed out, "Don and I didn't always see eye to eye, but his convictions could convince you that it was the right way to go, because he had unselfish motivations."

In the end, he led others by example, and he convinced them to follow not only through deeds, but through softly spoken words. Manenti explained, "Don was soft spoken, but when he spoke, you knew you'd better listen to him. " SBC

Many thanks to all who contributed to this remembrance. Watch for additional thoughts and stories about Don to accompany the online version of this article on our website at sbcmag.info.

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parting shots

Share your stories and photos with us! Send submissions to partingshots@sbcmag.info.

Congratulations to Truss Systems Hawaii, Inc. whose photo received the most votes in *SBC's* Online Photo Contest. The winning photo of the Marriott Courtyard Hotel project in Kahului, Maui, shows one way to meet OSHA's new fall protection standard.

This installation method was devised after the contractor met with Truss Systems and a local OSHA inspector to discuss the new regulations and how they would affect the project. Once the contractor chose to assemble the roof on the ground, Truss Systems worked closely with him to review the plans for critical dimensions, conditions and weights to help insure a successful installation.

The roof was prefabricated in 13 sections on the ground (see photo at right), including trusses, sheathing, bracing and fascia (read more about ground assembly on page 12). The sections were then lifted into place and installed by a three-worker crew, saving considerable time and money, all while complying with OSHA's fall protection regulations. **SBC**

SBC Online Photo Contest

Thank you to everyone who submitted their best snapshots for *SBC's* Online Photo Contest and everyone who voted. We received some great submissions, ranging from innovative projects to a "Trussmas" tree and even truss-inspired jewelry. To see all submissions, visit sbcmag.info/photo-contest/2012/01.

The next online photo contest will begin soon, and the winner will be featured in an upcoming issue of *SBC.* Email your photos* (high resolution, 300 dpi, preferred) today, along with a brief description, to epatterson@sbcmag.info.

*Photos submitted may be used in *SBC Magazine* or other SBCA materials.

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