

# Inspiration Report



SUMMER 2022 | ISSUE 33

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**Just how unique and creative can you get with timber trusses?** It may seem strange, but I don't dare to answer that question. In my early days of timber design and building, I had a foggy misconception that I would soon run out of unique timber frame ideas. But one day, when I was sitting in church, a young lad in stylish jeans walked by, and I suddenly had a startling moment of clarity. "If people can continue to get more creative with blue jeans, I don't have a leg to stand on!!" I told myself. My erroneous idea of limited timber frame creativity vanished forever. I believe this concept applies to your timber truss as well. Not too win a creativity contest, but get the right balance for you and your situation. For example, you may not like big, beefy timber trusses. But heavy timber trusses might be just what you would want in a room with high ceilings! As you move forward, don't limit your creativity. Pick and choose elements from multiple timber truss styles. Let your truss style evolve and enjoy the process.

**And in that spirit, I present 5 MORE Distinct Timber Trusses for your inspiration and enjoyment!**

Let's start with 3 unique trusses I've grouped together for your convenience.

## MONO TRUSS, BOX TRUSS, AND MULTI WEB TRUSS

These three trusses are uniquely different, but they share a lot of overlap from a stylistic perspective. How do they share style overlap? Answer: with rustic, modern, and industrial influence. Let's break down these three adjectives one at a time.

### RUSTIC

Even if you were to paint all of your timbers bright white, you would still have some rustic influence simply from the geometry and presence of the square shapes punctuating otherwise flat surfaces in a structure. Geometrically, sharp straight lines and edges represent strength. Curves represent elegance. For example, compare posts that are embellished with curves or softened in some way with posts that are straight. Or consider the change in appearance when round Greco-Roman columns replace square posts. There is just something raw and basic when the "bones" of a structure are visibly celebrated rather than hidden behind drywall. In general, timber framing, or post and beam construction, represents rustic warmth, belonging and security.

### MODERN

By definition, Modern is constantly changing because it is keeping up with the times, always on the cutting edge of what is possible with design. One hallmark of Modern style is SURPRISE! Modern design uses surprising, charming, or good-looking ways to combine different building materials to create a unique look and feel. Another hallmark of the Modern style is mixing old and new. For example, I once saw bright red heating ducts suspended from old Multi-web timber trusses in a commercial restaurant. This used both of these Modern design principles.

The Box truss was used for a lot of old commercial construction and, subsequently, many penthouses and offices display a modern style of old and new. The Mono truss plays well with simple, single-plane roofs sloping outwards - common to many modern designs. This not only uses simple lines to define dwelling space but it allows for more light, another hallmark of modern style.



Fig. 1 - Mono truss used under sloping ridge for unique modern look.



Fig. 2 - This photo from end of "box truss" shows typical geometry and thru tenon. (Top right corner.)



## INDUSTRIAL

We have already touched on how some Industrial looks have evolved in discussing the Modern influence above. All three of these trusses have what you might call asymmetrical beauty. You may know a model or movie star with distinctive imperfections! This concept is the driving force behind the use of raw industrial elements and features used in Modern designs today.



Fig. 3 - Small multiweb truss profile using metal rods.

**Accessorize!** While these three trusses capture imperfect beauty on a bigger scale, you can also use rough industrial touches on the trusses themselves, such as rusted metal work or heavy cables with crude functional clamps. You are only limited by your creative accent!

**In to the structural weeds!** The Multi-web truss has the most extensive load capabilities because of the many truss webs. Many old warehouses have 60-80' spans and have held up well. Today's engineering criteria may limit the span or require beefier timbers. The Box truss's capacity is limited by its height. The taller the Box truss, the greater its span capacity. I remember one project which had a relatively light snow load. It had many 30" tall Box trusses 4' apart with a span of 28' or 30'. Metal connections were required to address the big tension loading with the webs at such a low angle. The Mono truss has similar onstraints as the Box truss. Sometimes

# 6 MORE DISTINCT TIMBER TRUSSES

by bert sarkkinen

the Mono truss is used in a unique way to great effect. Such as a centerpiece underneath an upward sloping ridge/hip. (Fig. 1) So maybe one of these three trusses will work for you? Or perhaps just a creative piece of what you've learned here? There are many things to discover and utilize regarding imperfect beauty!

## THE ARCHED TRUSS



Fig. 4 - Elegant beauty represented in simple arch truss.

Technically, this truss should be called by its specific name with arched members, i.e., a King truss with arches or a Queen truss with arches, etc. But who has time for that, with everyday communication? Clients and professionals alike latch on to the easiest name available. So the clear winner has been simply Arched Truss! And it is a very popular truss indeed. Why? Without a doubt, it has to do with softening the rustic strength of the timber trusses. You might say everyone is seeking a balance between rustic and

elegance with all their building choices, from timbers to cabinetry to colors. Timber arches provide a significant "influence dial" to adjust their rustic/elegance balance. Here are some popular Arched truss applications for your inspiration.

## ARCHED KING TRUSS

This truss can be done with or without webs. And the arched bottom chord can be slimmer in the center. This slimming has a lightening effect, reducing a heavy rustic feel. Not that it is better, but sometimes it just seems to fit for different situations and tastes. That goes for the webs as well. Sometimes less is more (no webs) - sometimes more is more. It's best to try different variations with the modelling in the planning stage.

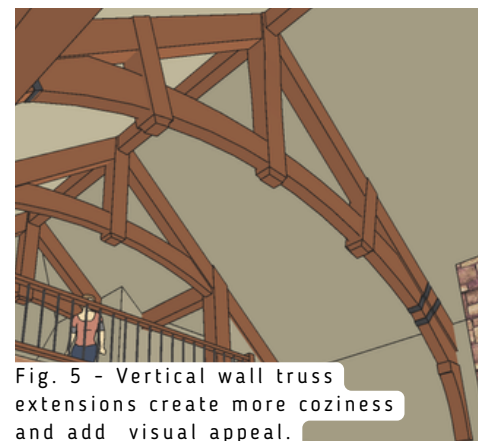


Fig. 5 - Vertical wall truss extensions create more coziness and add visual appeal.

## ARCHED KING/QUEEN TRUSS



Here are a few options that utilize uniquely positioned Queen posts on each side of the King post (Fig. 5-6). Sometimes people want a high elegance factor and a high rustic factor. With added mass and vertical supports to the bottom of the truss, (Fig. 5) this solution does exactly that, with the rustic girth and soft arches. It also works well for a high ceiling space to add a cozy warm influence.

## ARCH SCISSOR/QUEEN TRUSS



Scissor queen truss is not particularly strong without a tie-rod collecting tension loads from Queen post to Queen post. But it is an attractive solution for many situations, as it captures a piece of the Hammer Beam truss look and feel. Regarding the loading capacity for the other examples, refer to the King, Queen, and Scissor truss, found in the prior Inspiration Report, to extrapolate the rough load capacity for your project.

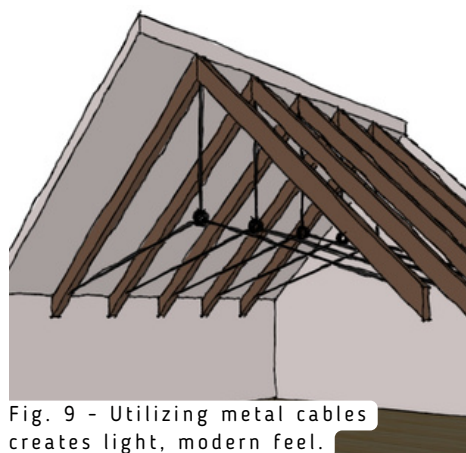
## ARCHED BOX TRUSS

Often, a space will feel better by eliminating the traditional orientation of timber trusses and placing a Box truss at the ridge. Creating a big arch or smaller arched webs is a common solution to avoid looking too heavy for some clients' tastes. A big arch at a shallow angle obviously provides no additional strength, yet everyone calls it an arched box truss.



In the example above, loading constraints for this arched Box truss then would be limited to how big of a span a simple beam could take.

## THE CABLE TRUSS



The cable truss is not so often used, but I wanted to include it for two reasons. It breaks the conceptual mold of what is possible with timber trusses. It also works well with Modern style, with its airy feel and visual surprise. Stainless

steel cables give a nod to the Nautical, or Coastal, style as we have defined in our book, *The Art of Hybrid Timber Framing*. Lastly, the cables provide an unforgettable picture of tension loading for how a truss works. A cable cannot work in compression, only in tension. With or without a King post, this truss is limited by the top chord/rafter capacity, just like the simple truss. Without getting extra beefy top chords, this truss tops out at about 30'.

## THE TENSION RING TRUSS



Hmmm...or is it really a truss? If it doesn't look like a duck...can it be a duck!? As I've stated in other articles, a truss must utilize tension loading for its strength. This way, the tension ring truss "walks and quacks like a duck." Whether a square, hexagon or octagon, the corner joints are designed to resist blowing out/coming apart from the outward pressure generated by the rafters. (As a side note, this tension ring is structurally an entirely different animal than the reciprocal roof. (Fig. 11) It is hard to explain how one rafter bears upon the other in a never-ending circle at the roof peak - no start or end. But I like the simple definition



I heard at a timber frame conference a while back. "The reciprocal roof is another fun way to lose money!!" We get a lot of fun "opportunities" in our industry.)

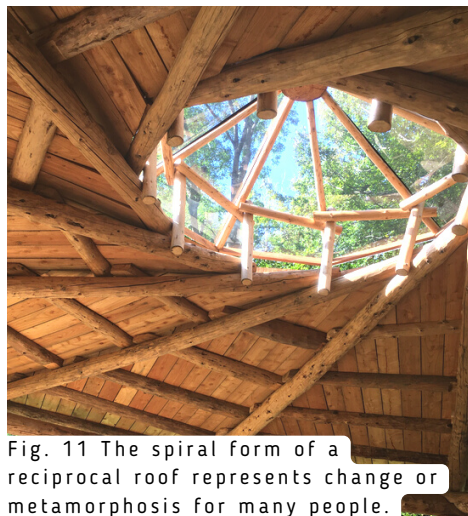


Fig. 11 The spiral form of a reciprocal roof represents change or metamorphosis for many people.

The tension ring truss is popular for outdoor pavilions, studios, cabins, and warming huts. A compression ring can be used at the peak to create a space for a chimney or pipe. In this example (Fig. 12), the warming hut started as a tension ring truss. But as the design evolved, with a steeper roof and lower walls, the four dormers interrupted the tension ring ---



Fig. 12 This started as a tension ring, but changed to a 4 way cable truss due to the dormers interrupting the tension ring

so a variation of the cable truss was used to address the tension loading. (With a 7' height from the floor, this 4-way cable truss made a great place to hang wet, snowy clothes!)

Regarding span capacity, the octagon gazebo is about 18' across, and the warming hut is roughly a 24' by 24' box. Structurally speaking, the octagon was easy because of a light snow load and small span. However, the warming hut had a diagonal truss span of about 34'. So even though the tension load was reduced by the steep roof, we had to reach deep into our bag of tricks to keep the beams from getting over-the-top huge!



## FULL CIRCLE

This all brings us right back to where we started. How creative can you get with timber trusses? With any luck, you, too, will hesitate to answer that question in definite terms, rather, subscribe to a philosophy of steady, patient pursuit of idea testing. With idea testing in general, most people tend to overdo design before they realize they've gone past their sweet spot. Then it is time to reverse course and stop --- before going backwards. Knowing when to stop is very important, as is knowing when to call in extra help. So, too, is knowing who will be a good fit for your project!

As a solution, might I suggest talk therapy? Sigmund Freud the believed conflict between the ego and the id to be the principle cause of...**just kidding!** I'm simply suggesting you call us or anyone else you think might be a good fit. As you talk through what you are trying to achieve, you can gain more clarity and practical insight into what is real and good for you.r project. Feel free to reach out to us. Our "talk therapist" hotline is open 24/7, except for weekends and between the hours of 5 pm and 8 am. :)

On behalf of the Arrow Team,

*Bert*

Bert Sarkkinen

P.S. If you want see how we function as guides, helping people get the look and feel of their hybrid timber framing right, but prefer to remain incognito, do so by reading our book, The Art of Hybrid Timber Framing.

# FEATURED

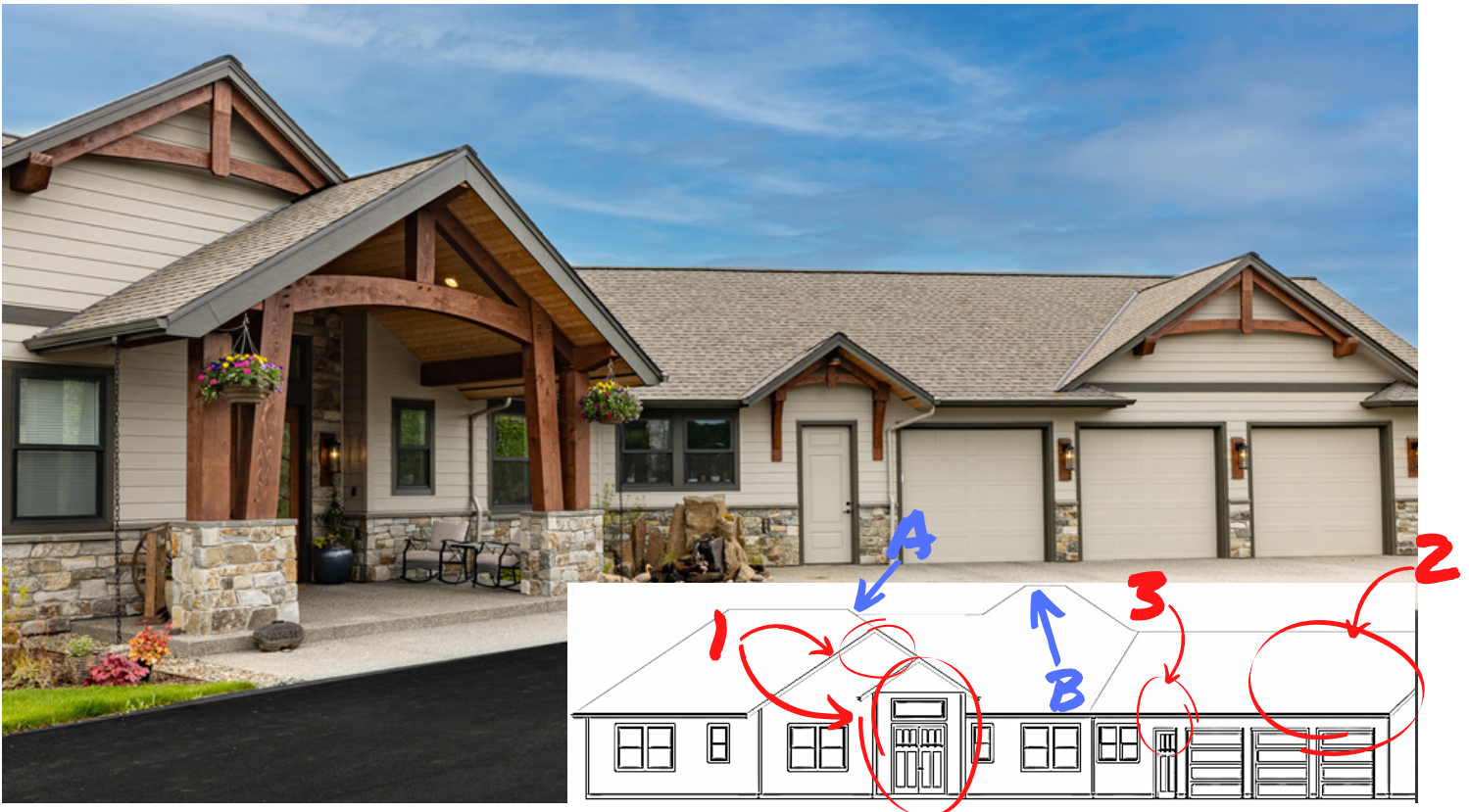
## PROJECT

"Everyone is a critic!" I don't know who coined the statement, but it rings true for the experience of anyone making decisions and trying to get things done. As a designer and professional, I've noticed a strange trajectory with how I take criticism. It was quite an effort to work past negative feedback in the early days. Since then, I've slowly realized that ideas are floating all around us, and it is simply a matter of getting a lot of ideas for the clients to consider and choose. But even still, if I have worked a long time on an idea, it is hard not to avoid disappointment if the idea is rejected.

If I'm tired or unaware, the criticism can move from disappointment and strike at the heart of my security and survival! "Really! How is that?" you might wonder. Here is an example of what can run through my head: **"My money (survival) comes from producing good timber frame designs! Have I failed? Is the sky falling!?"** Of course, it sounds ridiculous in writing, but that is my instinctive gut reaction to criticism.

I prefer to see the design/build as a collective effort and evolving ideas to avoid this head trash. For example, the Ashby's came to us with the preliminary plans. We added our input as guides, and, further down the building process, others also modified our work. Make sense? Now that you understand I'm not throwing stones at the preliminary plans, I'll share the input we offered working with Garrett and Addie.

**Reference 1)** Beauty must have a visual hierarchy. Here we widened the entry timbers for greater presence and added a small timber truss to the gable end, just above the entry. Together these elements become a focal point that captured initial attention.







**Reference 2)** The garage space felt empty, especially with the long, spread-out ranch. For people who want a more rustic look, we strive for at least three timber elements in the front view. Just timbers around the entry seems to do the trick for a more refined theme.

**Reference 3)** Creating rain coverage for a door is a natural and practical place to utilize timber framing. And it created the third timber element to get that wholesome look we all enjoy. A general design rule is to have at least three timber elements work in unison. Odd numbers seem to balance better. Not always, but in general. Also, I suspect the presence of this small roof shifted the garage gable in from the center door to the end garage door to avoid a cramped, imbalanced look.

**Reference A)** A simple beam was placed to the right of the entry just to clean up the roofline by eliminating a small hip and valley located towards the upper end of the entry gable end.

**Reference B)** Without the timbers and visual hierarchy, this unique roof profile could have distracted from the clean roof lines. Nothing bad, per se, about the practical roof solution, but not very intentional. Now, faded into the background, this unique roof profile is a practical side note.

Three other things I like about Garrett and Addie's selections: 1) the three-sided mantle, 2) the flow of timber framing from the foyer through the great room, and 3) the flat ceiling over the timber outdoor living area. Originally, they wanted a vaulted timber ceiling, but they saved plenty and still got a classy look with a flat ceiling. In a world where everyone is a critic, I love giving owners our expertise and creative options and seeing them **make decisions confidently.**

# GETTING TO KNOW

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## CHARLIE WAKEMAN



Location, location, location. That is how we were lucky enough to snag Charlie Wakeman, our mechanic. He lives near our Kalama shop and was driving clear over to Portland for work until he responded to the NOW HIRING sign, visible from I-5. The cultural fit has been awesome! I love it when I hear the shop guys say, "Give it to Charlie. He can probably repair it." With his go-to attitude and work ethic, Charlie has gained the confidence and respect of the whole ATF team. Nor is Charlie a wet-behind-the-ears spring chicken! More than the many practical skills he has acquired in his life, I appreciate his seasoned, straightforward views on life and work. And I think the younger apprentices benefit from his example as well. It has been working out well. I must say the back-scratching has been mutual. Charlie has added woodworking to the collection of hobbies he enjoys! There is a lot to admire about how he rolls. Thank you, Charlie!

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## HAPPINESS IS...

If you had told the twenty-five-year-old me that I would have an indoor dog at one point in my life and like it, I would have snorted in derision, but it did come to pass. No. Not with my current dog, Royboy; he is an outdoor dog. This was a dog for my youngest daughter. As a 13-year-old, she felt a bit lonely after school and even in the evenings when she spent more time alone in her room as a teenager. So together, we looked for a dog she wanted. We eventually found a rescue Chihuahua and Wiener dog mix. She named him Finney. I really enjoyed the little ruggie too. But the

most rewarding part was hearing compassionate baby talk from my daughter as she interacted with Finney. I realized that teenagers adopt a tough, condescending attitude in their quest for independence. They want autonomy but have neither experience nor the means to be independent. Snarky comments and the "I'm-so-cool" attitude is the only method they can use to hold their chin up. But with babies and pets, they can take off their masks and show love. "Did Finney wanna belly wub?" and "Tum'ere you silly boy!" Such phrases were a joy to hear as her father.

## ...LETTING YOUR GUARD DOWN



# TIMBER HOME PLANNING SEMINAR

**Learn many design tips! Leave with floor plan and timber style clarity.**

Getting the right home plan has surprised more than a few people who have chosen to build or remodel rather than purchase an available home for sale. But the surprises are not only negative! With the right mindset and planning process, the positive experiences far outweigh the challenges. In a nutshell, here are some of the negative statements we've heard from clients before the planning process:

- I've looked at countless floor plans and can't find what I'm looking for.
- I'm attracted to many styles but have trouble deciding what I like. I'm overwhelmed. My planning and research have raised more questions than it has answered. It feels like I'm moving backward.
- Some friends of ours had a horrific time getting what they wanted. It took three different designers and a lot of time. I don't want that!
- I'm worried about getting accurate costs and staying on track money-wise.
- I'm concerned about getting carried away with the planning choices and eventually designing the "Taj Mahal".

This "hassle" list is by no means exhaustive. But it covers some of the major concerns others have felt. This seminar is scheduled to be on a Saturday morning sometime this Fall. We also intend to have a live shop tour after the seminar, so attendees can see artisans working their craft. You may ask yourself, "Am I right for this class?" Or, "Will I benefit by attending?" This seminar is likely suitable for you if you answer **YES** to any three of the following statements:

- I want to build or remodel in the next ten years.
- I like the idea of using exposed beams to personalize my home style.
- I would like to tighten the visual picture of what I want.
- I would like to understand building and remodeling cost parameters.
- I would like tips for hiring the right professionals for my projects.
- I want to understand better how the planning and building process works.
- I'm curious about different timber frame styles and whether they would fit my project.

So, is this an educational opportunity for you? Some might say, "**You had me at the word TIMBER!**" If so, take action now. But maybe you are uncertain? I encourage you to "throw your name in the hat" anyway because you can always say NO. At this point, you are just signing up for seminar notification.

But I will say that the information we will cover together will be worth the time spent, and much of the information you learn will be transferable to good decision-making skills in general. So I hope to see you there!

**Free of charge seminar.  
Sign up for notification!**



**1-833-212-0202**



**MATT@ARROWTIMBER.COM**

## MEMORY LANE

My wife, Kristine, and I like learning languages and cultures. Finnish, the language of my ancestors, was the first language I started to learn at the tender age of 20. I remember listening to an interview-style cassette with various topics when I would take my after-work nap. This passive “brain bathing” allowed me to pick up words and slowly improve comprehension. One subject was about an Olympic track star by the name of Paavo Nurmi. I remember slowly understanding phrases like iron will, sprinting alongside a train, and other descriptive phrases. At one point, the commentator said there is nobody in Finland who does not recognize Paavo Nurmi's name. When Kristine and I made our first trip to Scandinavia together, I asked a few people in Finland if they knew Paavo. They, of course, wondered why a foreigner speaking broken Finnish would ask about Paavo Nurmi. Once they got the “brain bathing” back story, they got quite a chuckle out of me performing my own little investigation.

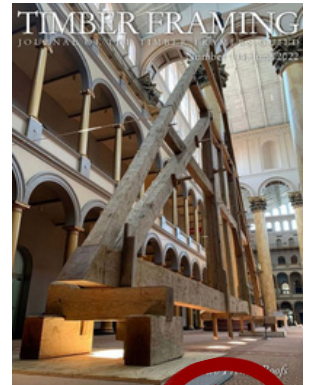
# RECOMMENDED READING

You may remember when the famous Notre Dame Cathedral in France caught fire in the Spring of 2019. Issue #143 is mainly about the volunteer project to build a timber truss to

## Journal of the Timber Framer's Guild #143

by The Timber Framer's Guild

restore the Notre Dame Cathedral. Three volunteers shared their stories of participation. They give the reader insight into the incredible organization and work required to build truss number six as a tribute and gift from American craftsmen to the rebuilding effort. Mez Welch talks about harvesting and transporting the oak trees---at one point they only used axes and horse logging as a nod to the methods used when the cathedral was constructed, between 1163 and 1345. Greg Mullins speaks to the planning and engineering required to raise the heavy oak truss with ropes and manpower. They were again avoiding using a crane as a tribute to the craftsmen of old. Gerald Davis navigated the details and specifications of the trusses with the powers that be in France. He also did a lot of head scratching to replicate the joinery done 800 years ago! His article also shows the raw logs being hand-hewn. Axes and elbow grease turned logs into beams! Also seen is the scribing process. Only hand tools were used to fabricate all of the joinery. This issue, more than others, speaks to the romantic, idealistic side of the timber framer's heart.



Some books I read make me a little queasy if they get too antagonistic or feel manipulative. (It is interesting to note that the difference between helpful and manipulative resides entirely in the mind of the person receiving the help or manipulation!) Help First is one of our core values. So you can see how this book might seem

## Never Split the Difference

by Chris Voss

selfish and inappropriate to me. But it came highly recommended. Once I discovered that Chris Voss was a hostage negotiator, I understood “never splitting the difference” in that context to be unselfish. My biggest takeaways were less about negotiation and more about relationships---although the two go hand-in-hand. One tip was to label your counterpart's feelings (the ultimate calming salve for touchy scared individuals---whether kidnappers, hostage takers, or teenagers!) I also learned that I have screwed up if my counterpart tells me, “You are right.” **A man convinced against his will is unconvinced still!** Saying, “You are right,” is often a way to deflect an argument or get someone to shut up. Having my counterpart say, **“That’s right,”** indicates that I have done an excellent job listening to, echoing, and labeling feelings. Another tip was to perform an accusation audit on oneself before entering a thorny conversation. It involves understanding the possible frustrations of your counterpart and verbalizing them early in the meeting. For example, I might tell my wife, “You probably think I’m being an inflexible buffoon on this issue and always have to get my way.” ;>) Definitely a worthwhile read!





# THE Arrow Timber Philosophy

**People want** things which reflect their personality.

**People want** an enjoyable process with a mutual exchange.

**People want** teamwork, transparency, and creative solutions.

I experience this over and over in the course of a year, not only when clients view albums or 3-D models in my office, but especially so immediately after the completion of their timber structure. **Appreciative head nods and slow smiles have almost become a trademark!** I fell in love with the timber framing craft in 2002 and I still feel just as privileged and enthused. Many, many, personalized structures have been created since then. In fact, my **passion, artistry, and repertoire of creative solutions** have all grown dramatically... I sometimes wonder if it is simply something to do with rising to challenges and building upon success. You probably agree that exposed beams provide geometric beauty and resonate deep within our psyche... The style brings to mind **durability, longevity, safety, laughter, smiles, and home to many warm feelings.**



## THE QUESTION

What is the best way for you to acquire your personalized timber living?

Not too much, not too little. Not too high, not too low. Just the right mix of timber presence and style... How to find that sweet spot which you can enjoy for years and pass on to your heirs. It's really about enriching the lives of those around you and sharing your unique personality and viewpoints with them. **How do you intend to achieve this? How will you determine a good fit with service providers?**

Seek out and choose, therefore, things that will evoke head nods and slow smiles. Things which resonate with your personality. Things that do not grow old or boring with the passage of time. You will not regret it.

*To your goals, momentum, and happiness*

Bert Sarkkinen, Owner



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