STRUCTURAL BUILDING COMPONENTS MAGAZINE (FORMERLY WOODWORDS)
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Executive Director's Letter

"Peeking Into the Future of the Industry" by Kirk Grundahl

This issue focuses on software technology and truss plant advancements. We began this issue with an article on our industry's position on permanent bracing of piggyback trusses, which is really a building design issue. We stated in the last paragraph of the article that circumstances may dictate that truss manufacturers or truss designers become the building designer of record. We may have to perform total building engineering and design services to solve the market pressure that is coming our way to provide permanent bracing solutions.

COMPONENT DESIGN

Performing total building design is certainly within the realm of reason for our industry to undertake. The software that our industry uses is rapidly moving in that direction already. One of the key projects that the WTCA Marketing Committee is currently working on is to rethink the way we design and construct the residential and light commercial structure. Our committee project scope statement is:

- Perform 3-D structural analysis of a wood-frame house/light-commercial system, with the ability to integrate various element properties into the program, to see if the various components we now, or can manufacture, will work structurally.
- Optimize the wood-framing system by fully utilizing component elements (which includes full utility of lumber design properties) for the floors, walls and roofs.
- Look at wider on-center truss spacing, wall panel components with wider stud spacing and plated joints, roof panel components, and ceiling panel components. This has to be done in the context of the complex bottom chord and top chord pitches that we see for roofs and ceilings today.
- Develop the component system in concert with builders to ensure that we speed up construction time and simplify the construction process maximizing the use of less skilled labor.
- Integrate, in some manner, our analysis into existing truss and wall panel design programs.

I like to ask the question, "What has changed in our industry in the last 47 years?"

The immediate response is computing power. Today, we can design complex trusses on a laptop computer. This power lets us think about expanding our design capabilities to deal with three-dimensional analytical concepts and produce a result quickly. Our goal over the next few years is

to gain a better understanding of building design and allow each of our members to use this understanding to better serve their customer base.

Some of the questions you will have to ask yourself over the next few years are:

- Where are we headed as an industry?
- What will be the role of architects/engineers?
- What will be the role of builders/contractors?
- What will be the role of truss manufacturers?
- Do you want to just manufacture trusses, or do you want to supply structural solutions for your customers? What does this mean: building design and component manufacturing: building design and component manufacturing and rough framing, or building design and component manufacturing and complete framing, etc.?
- What risk are you going to take?
- What risk are you willing to take?
- What risk are you going to be forced to take?
- What value does the marketplace put on this work?
- Will the marketplace compensate companies for the additional value that can be provided?
- How will your competitors respond?
- How do you compete and maintain a reasonable rate of return on your investment, particularly when your competition does not seem to care about rates of return?
- What services are you going to integrate into your business that you do not have now?
- Where do you want to be in five years? 10 years?
- Ultimately, what business are you in now and what business do you want to end up in?

WHAT'S IN STORE FOR OUR TRUSS PLANTS?

As with structural design, the personal computer will certainly have an impact in the plant as well. Automated manufacturing systems should become a way of life, probably pushed more quickly than we would like by labor shortages that we are facing, and probably will continue to face over the next five-to-ten years. What forms these computer-aided manufacturing systems take is anyone's guess. Let's contemplate some possibilities.

- Automated wood moisture content measurement.
- Batch cutting of all members and transferred to lumber bins next to truss tables for automated/hand selection and use. In other words, the lumber goes from the saws to the tables without the assistance of a human being.
- Lumber selected from the appropriate lumber bins and placed in the truss set-up automatically or by hand.
- Automated truss plate insertion.
- Automated pre-press operations.
- Automated finish rolling and stacking.
- We could even see computer technology completely take over our quality control systems.

The only constraint is economics. Once labor gets too expensive or unavailable, automated mechanical solutions will become more viable. Computer-controlled technology and complex material handling are fairly routine. Just look at the automotive industry to see significant use of

robotics. And, a car is far more complex in terms of integrated parts than a truss will ever be. It is going to take one of our suppliers to step out of the "we have always done it this way" approach and look at manufacturing differently.

- How about manufacturing trusses vertically versus horizontally?
- Can it be done?
- What impact on plant automation would that have?

Continuing with the auto-motive industry analogy, one can quickly conclude that as the steel industry enters the construction market, its experience with automation may force significant changes in the truss manufacturing landscape. This may be one of the key and significant competitive advantages that the steel industry has. If so, it will be exploited to the extreme!

CONCLUDING THOUGHTS

We'd all be interested in the wildest futuristic thoughts running around in our members' minds (even though it might be a startling experience to wander in the minds of some of us). Please take a moment to jot down some thoughts on a piece of paper and fax them to me at 608/274-2134. I'd like to compile the dreams of our industry for all to contemplate, and will do so if I get at least 15 dreams.

SBC HOME PAGE

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 of structural building components to ensure growth and continuity, and to be the information conduit by staying abreast of leading-edge issues. SBC will take a leadership role on behalf of the component industry in disseminating technical and marketplace information, and will maintain advisory committees consisting of the most knowledgeable professionals in the industry. The opinions expressed in SBC are those of the authors and those quoted solely, and are not necessarily the opinions of any of the affiliated associations (SBCC, WTCA, SCDA & STCA).