

# From The Castle

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## New Year, New Business

First off I would like to welcome the new people on my mailing list—I have added a number of former colleagues of mine from my time in the military. I hope you guys are doing well, and don't hesitate to call me when you get the chance. Most important in that list is my old boss when I was a young Lieutenant in the Air National Guard, Lt. Col. Ed Sain (Ret.). Ed, you were the best boss I ever had! (sorry I was always late to work when I was under you).

Typically we work the newsletter in three parts. The first is the lead article, which has to do with the latest from the company. The second is an article aimed at those of you in the construction business, and the final is an article of general interest. I try to keep this newsletter informative instead of just two pages of corporate propaganda.

In past newsletters we've announced we are no longer doing third party construction inspections for homebuilders. There is no exception to this policy, we are off the approved lists in all the counties in the Atlanta area. We are focusing on our core competency, design.

We've been using Bentley RAM Advanse, which is an advanced three dimensional finite element computer program for our structural design. This has allowed us to model our structures as a whole, not in parts that we had to do before. For example, in a design I recently completed, the loads from the roof are being carried by two floors. It allowed me to mini-

mized the structure while keeping the open spaces the architect designed.

We can cut down the amount of lumber used in construction, and even in more difficult floor plans we can avoid steel. Using steel is like fishing for catfish with cheese. It's a low challenge solution to a problem that could have a more "elegant" (in this case cheaper) solution.

Another advantage to RAM Advanse is we have virtual models of the structure we are designing. We can see in 3d if what we are doing is even possible, and if at some time we need to revisit our design, it's there waiting for us. For example, let's say we've designed for you a roof using a certain size member, 1 3/4 x 14 LVL. You can't get that size for some reason or the other, but some supplier is having a reduced price sale on 1 3/4 x 9 1/2 LVLs. You want us to modify the design for that.

In the "old" days, we'd have to pull our paper calculations out, revisit the entire analysis, and then redo everything. Today we go to the computer, pull out the virtual model from the project directory on the network drive, determine what has to be changed, insert the different size members into the model, and see what we have to do to make the thing work. If you are a somewhat slow reader, we would already have been halfway through the process in the time you read the description of it above.

I think one of the practical things about building a virtual model is we get somewhat of an idea if the design is buildable. When you work in 3d, it's easier to put stuff where it makes sense.

Where do we go from here? Right now we are evaluating Autodesk Revit Structural. Revit allows you do design in 3d, and will link directly with the structural program that you are using, allowing you to recalculate and redraw simultaneously.

We're still trying to determine if Revit will work well with wood structures. Not every software package is appropriate, and I expect we'll be evaluating Revit for a few more weeks. Even if we decide to get it, the implementation may take a few months. The learning curve is rather high for these systems working them in without disrupting productivity is a challenge.

In the upcoming year we will be working more and more with our partner, Diamond Computer Graphics in Shanghai, China. Our size is such that we can't hire on full time CAD person, but we do too much for Greg and I to handle it all. My son Jay works as much as he can, but can only give us so many hours being he is in school. Diamond fills this gap beautifully, and their work is outstanding.

What will be doing over the next year? We'll be concentrating on what we do best—and getting it better.

George



In this roof design, we carried the loads across two floors to keep the open spans below.

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## Floor Framing and Lumber Companies

When you go to a lumber supplier for an engineered floor system, part of the service is often preparing a set of plans for you, complete with construction details and a bill of materials.

It's a loophole in the Code that engineers are not required to do the structural design on homes. Many of the counties require an engineer's stamp on the plans if the house is over a certain size, but that's about it. We've had a lot of business reviewing the floor plans prepared by the suppliers, but after some serious consideration, we are no longer doing that.

The reason is pretty simple—it's not much more in cost for us to do the design as opposed to reviewing the drawings. If we can work from the roof down, we can give the system more realistic loads,

and make a more efficient floor system.

Generally, the lumber suppliers prepare pretty good plans. I've seen some examples that were horrible, like one that the supplier used 6 TJI joists instead of a beam (see photo to the lower right for illustration). However, those are rare.

The difficulty that the suppliers have is that they aren't designing the roofs, so they have to assume what the loads will be. From what I've seen, they are VERY conservative, which makes sense because they can't be sure how you will do the framing. Conservative translates to more lumber = expensive

If we do the roof design along with the floor design, we are in a better position to optimize

the design, and keep the material cost down. Also, if steel is needed, the suppliers don't design that. We can integrate the steel, dimensional lumber, LVLs, and so on with ease.

Another advantage to you as a builder is you can take the framing plans we prepare and get quotes from different suppliers. That could save you some money, which of course is always good in business.

So, when you get the architectural drawings, bring them right over to us, and I think we can help you increase your profits.

George Runkle, P.E.



TJI Joists

6 TJI Joists were placed where you normally would put one LVL Beam



LVL Beams

lot of money, and take it from me, it wears on you.

I don't really have a general position on going to court or arbitration, both are painful. Our standard contract however, does not call for binding arbitration. We'd rather work with the court system as messy as it is. At least there we have a chance at compromise and appeal.

### Binding Arbitration Being Bindingly Arbitrary

Recently WSB TV interviewed me about binding arbitration. A homeowner got a pretty bad decision from an arbitrator, and is basically stuck. The reporter asked me if that was right (as in morally right). It's not what's right, it's what's in the contract. The arbitrator gave no reason for his decision, which is part of the deal. The arbitrator's decision is final, so there is no reason for the arbitrator to issue any kind of explanation.

Binding arbitration sounds great, you don't have a lawsuit going on for years, attorney's fees are lower, and the decision is rendered by someone knowledgeable, not 12 angry people that couldn't get out of jury duty.

However, whatever gets decided is **FINAL**. There is no appeal process. From what I've seen, there doesn't appear to be the level of compromise that comes out of court decisions or court ordered mediation. Not only that, the sword cuts both ways. Either the homeowner or builder can get it (I've seen both), and you are stuck.

The legal system is inefficient and messy. Maybe it's supposed to be that way. Urban legends are full of bad decisions by juries. My favorite was a medical malpractice suit where the plaintiff got loads of money because she "lost her psychic ability" from the surgery. That happened in Washington DC, if I remember right, (I

do remember laughing when I read the newspaper article in the Washington News, which is long gone) it happened when I was in college. That's bad, but we don't know if it made it through the appeal. Follow up on such stories is never newsworthy, but the system does have checks and balances.

I've been involved with a number of lawsuits, and was a plaintiff in one myself (a bit of advice, unless it's really bad, don't be a plaintiff in a lawsuit or arbitration, it's often not worth the cost, emotional or financial, but I digress). In the ones that went to arbitration, the decisions were basically win-lose. One side won all, there was no compromise.

In the cases that went through the court system, there was more compromise. In the case I was a plaintiff in, we went to mediation, and both sides agreed to a position that we could both stomach. I've personally never seen a lawsuit make it to trial (including the three times I got put on a jury), there has always been settlement before it got there. Attorneys don't seem to like the risk of a jury, and will often agree to an out of court settlement before that happens.

The downside in going to court is it is time consuming. You have discovery, depositions, waiting until you come up on the court calendar, motions for dismissal...it goes on and on. In a full blown lawsuit, it can go on for years, which can cost you a

