LETTERS

Dogs Still Have a Place on the Job

Lately, we have seen too many articles that attack the backbone of our industry — the small remodeler who works out of his pickup and who brings his dog along with him. It has become an image that the pundits are describing as unprofessional.

Contrary to what the so-called big critics are saying about professionalism, I don't believe there is anything about a dog on the job that detracts from professionalism one bit. If the dog is well-mannered and friendly — why not? Our society sometimes gets too hung up on image and confuses professionalism with a shirt and tie, and a Mercedes.

While a shirt and tie is often worn by many of the true professionals in our industry, to imply that a man is any less professional because he doesn't wear a tie or brings his dog along in his pickup is an example of the kind of counterproductive thinking that is illogical and only creates ill will.

The definition of professionalism may certainly include a clean and neat appearance along with other character traits like ability and honesty, but in my estimation professionalism has nothing to do with shirts and ties, dogs, trucks, or Mercedes.

— Frank Callan

Callan, a retired builder, now publishes the Builder's Digest Newsletter where this item first appeared.

Cutting Trusses Always Risky

To the Editor:

On behalf of the wood truss industry, we were very interested in your article in the September 1990 issue, titled "When You Have To Cut A Truss." Certainly, there are times when this is necessary for remodeling jobs, but we have concerns about how you downplay the need for involving a structural engineer in modifying a truss "for small projects." How does a small project differ from a large one? Is safety less important? We feel the hiring of an engineer is by far the best and most prudent route to take when altering a light frame structural system.

It was also interesting that you referenced the Wood Truss Council of America as a resource for finding a design professional who could assist in making repairs. It is surely unreasonable to suggest that these businesses would extend this type of service as a professional courtesy. Such assistance can be very detailed and complex and it serves no one's best interest not to be compensated for the liability that is incurred.

You note in your article that if a builder follows some general rules of thumb, he can modify trusses by liberally overbuilding. This concept could prove to be very dangerous because liberally overbuilding will have different connotations to different builders. This is particularly true in conventional construction where modifications may work, but only because there is probably far greater redundancy than in an engineered system. Even in conventional construction, one can see inappropriate modifications reflected in sagging roof lines, undulating gypsum, out of plumb walls, etc.

You provide some basic rules that one must keep in mind, regardless of the type of truss one is cutting. Comments on these rules follow:

You state, "Trusses must be considered as a whole."

This is an absolute fact. Every truss was designed as an entire truss, not a partial truss. When you modify a truss, you lose the load transfer continuity and stiffness that the product provided to the roof or floor system. Given this, you end up redistributing the loads that the truss was carrying to other members of the structure. This redistribution of load may or may not be appropriate for the adjacent structural elements that must now carry it.

In most roof or floor systems, this load redistribution is not a non-trivial problem. The load may go to adjacent trusses, resulting in overload conditions or the load may go to a non-load bearing wall that transfers it to a floor system that was expecting no load. All of this can result in inappropriate deflection performance and other poor performing conditions.

You state, "The webs should all triangulate."

This is true, because this is the definition of a truss. The problem with modification of a truss is that one changes the triangulation configuration and therefore, the forces that go through each of the web members and each of the chord members. Therefore, the loads that are now being seen in those members may be significantly different than what was anticipated.

You state, "If trusses carry greater loads after modification, they must be reinforced."

This is true, but the graphical reinforcement that is shown in the article may not be appropriate in all cases. If one needs to double-up a truss, one may need the reinforcement to go from the bearing location to bearing location and not just over one-half of the truss. The condition shown can result in an interesting composite section that may create greater performance and stiffness problems for the truss than leaving it alone would have. It is very important to get good design council when making modifications that will require truss reinforcement.

You state, "New connections made between truss members must be as strong as the metal plates they are replacing."

In certain circumstances this is going to work, while in others, there may be conditions where the new connections must be far stronger than the metal plates they are replacing. It is imperative to know the forces going into the joint to design the new connection appropriately. Since connections are the key elements in any structure, an inappropriate design of the connection may lead to a failure that could be catastrophic.

You state that the application of these general guidelines can be seen in the examples that follow. However, trying to apply general guidelines to specific examples can result in significant errors, since it is very unlikely that any two truss-cutting situations are identical. The guidelines you suggest may result in excellent performance or extremely poor performance.

In your first example, you note that plywood must be sized for the repair, that you can use NailRite plates, and that you can strengthen a truss by scabbing and can even use adhesive to enhance the strength. These are all engineering decisions because each of the materials that you have described performs a mechanics of materials function. To assume that a builder is going to take the time to calculate tension and compression and use the appropriate mechanical properties of the materials may be expecting a lot.

The article concerns many of us within the truss industry. Espousing the cutting of trusses undermines the quality of the products that we have put in place.

Kirk Grundahl, P.E.
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Cellulose Dangers?

To the Editor:

As an occupational health scientist, I found the article "Cellulose Insulation—Why Not?" by Ned Nisson (Focus on Energy, 7/90) very disturbing. It is clear from the photograph that the non-use of respiratory equipment by the worker conveys the message that cellulose is a safe product because it is "just a pile of gray-colored ground-up newspaper." Although the American Conference of Governmental and Industrial Hygienists (ACGIH) asserts that airborne cellulose is nontoxic, recent scientific evidence suggests that long-term exposure to airborne cellulose may, in fact, be a health hazard.

One such study by the Harvard School of Public Health found cellulose to be toxic in animal lung tissue. After repeated exposure to cellulose, they found evidence of fibrosis, an early form of lung disease, in these animals. One reason for the lack of human case reports of cellulose toxicity is that occupational exposure to cellulose generally involves the inhalation of large particles which are eliminated from the body before abnormal tissue growth can begin.

If, however, no measures are taken to protect the worker in an unventilated, closed environment — such as insulating an attic where concentrations of cellulose may exceed the acceptable level set by the ACGIH — accumulation of particles in lung tissue can induce fibrosis due to the lung's inability to remove large amounts of inhaled dust (termed "overloading").

It is also important to mention that a worker may do many such jobs in a day, and therefore results in repeated exposure to cellulose dust that would greatly increase his risk of developing lung disease.

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Keep'em coming…We welcome letters, but they must be signed and include the writer's address. *The Journal of Light Construction* reserves the right to edit for grammar, length, and clarity. Mail letters to *JLC*, RR#2, Box 146, Richmond, VT