

# STRUCTURAL BUILDING COMPONENTS MAGAZINE

January/February 2004

## Education Saves Lives: The Fire Performance of Wood Trusses — Part 6 by Molly E. Butz

*The sixth and final part of the series wraps up with one last look at the facts surrounding the use of wood trusses used in building applications.*

It's been said that the sum is only as good as all of its parts, and now, it's time to look at the sum. Over the last five issues of Structural Building Components Magazine, we have explored Sections 1 through 7 of the Carbeck Structural Components Institute's (CSCI) The Fire Performance of Wood Trusses program and delved into the manufacturing and installation processes associated with metal plate connected wood trusses, in addition to several forms of fire testing. The culmination of the program in Section 8 provides the fire service with the information they need to utilize the facts they have been presented.

The eighth section of the CSCI program includes the third and final video created by the Houston Fire Department (HFD), which focuses on three main topics: pre-fire planning, firefighting tactics and local safety issues. Once again narrated by HFD Captain Timothy Neal, part three of the video series begins by expressing how crucial it is to perform pre-fire planning. Captain Neal notes that it "levels the playing field"; and, although it may not be realistic to pre-fire plan every structure in a given area, large buildings and special risk structures are a good place to begin this critical non-fire ground task. Pre-incident knowledge about the type of roof system, type of construction, building classification, square footage, number of stories and other specific content and occupant loads can help firefighters gain the upper hand when their "first-in" teams arrive on the scene. These vital statistics about a structure can separate life from death in a critical situation.

First-in teams can make better decisions on the fire ground with answers to questions like, "how long has the fire actually been burning," and "has the fire self-ventilated." The choice to climb up onto the roof of a burning structure might not be made if the answers to these and other questions are accurately answered. However, there are a number of firefighting tactics that make the answers to those questions less important, and ensure safety on the fire ground, no matter what the circumstances may be.

First, Captain Neal suggests that, rather than climbing onto the roof to ventilate the fire, firefighters make good use of their aerial trucks and work from the aerial platform instead of directly on the roof. Since not all fire departments have an aerial truck, he includes information on how to use a regular roof ladder in a similar manner so that fire service personnel can avoid the risk of falling through a roof whose attic may be involved in fire directly below. Captain Neal also includes to keep in mind that the older the structure, the more likely it is to collapse under the siege of fire.

Also in the final video, Captain Neal offers suggestions involving safety issues; building code

compliance and enforcement and the use of sprinklers. Captain Neal's main point is that the use of sprinkler systems can control fires, save lives and reduce property loss. Captain Neal also encourages everyone to use fire detectors and sprinkler systems proactively in their local communities.

Apart from the emotional aspects surrounding the dangers of a fire, the facts remain: trusses are not more dangerous than any other building material, all of which lose some of their structural capacity under the siege of fire. The best way to ensure the maximum amount of safety on the fire ground is through education and training. The Houston Fire Department and the Wood Truss Council of America (WTCA) encourage fire service personnel to learn all that they can about all types of construction. Better informed decision makers will make better decisions when they count the most!

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## From the Inside Out: Education Is Key to Success

As the CSCI Fire Performance of Wood Trusses wraps up, so do these articles, and it seems fitting to end this series in a conversation with John Vardian. Vardian is the Captain of Phoenix Fire Department Ladder Company 26 and also the owner of his own company, Ladder Concepts. Ladder Concepts was formed in June 2003 with Vardian and his partner, Fred Dimas. Not only have Dimas and Vardian known each other for more than 15 years and worked side-by-side at the fire department, they also both work in construction and are familiar with many types of building materials. Establishing a business, like Ladder Concepts, that focuses on educating fire service personnel about building construction, pre-fire planning and general ladder company operations was an undeniable next step.

Dimas and Vardian use the CSCI educational program as part of their training workshops and have a great deal of experience on the fire ground.

"We're not seeing these truss plates fall off or pop off. We even take an expanded piece of light gauge steel with us to our classes so that we can demonstrate how truss plates react under fire conditions," Vardian said. "And pointing fingers doesn't help anybody out, which is why we just need to get out into the field and see what's out there."

When asked about pre-fire planning, Vardian commented on how critical it really is, saying, "We don't have X-ray eyes, so the guys are basically guessing. When you engage in pre-fire planning, you take the guess work out. Then you know what's in the building and you can make an informed split-second decision. The reality is, it's not 'what is that orange stuff doing' that you want to know, it's 'what is that orange stuff doing to the structure.'"

Vardian also acknowledges the time involved in any successful training endeavor. "It's a slow process, getting the word out and it's a learning process for everyone. The best thing is to get out and look at new construction and old construction and learn to recognize the features. If we dish it out a little spoonful at time and say 'here's what we're seeing, here are some options,' we begin to see guys' eyes opening up and realizing that there are some urban myths out there.

All we want to do is present the facts."

And that's just what the CSCI Fire Performance of Wood Trusses program and this series of articles set out to do from the start: educate the fire service and present the facts that will help make their decisions on the fire ground bring them home...safe and sound.

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