

# The Art of Radius Steel



by Emmy Thorson-Hanson

Read about how one component manufacturer is taking cold-formed steel to the next "round."

Cold-formed steel is gaining respect and popularity in the industry thanks to companies like M-Truss that welcome challenging projects. Cathy and Tom McBride of M-Truss & Components, LLC in Las Vegas, NV gave us a glimpse into their business of cold-formed steel component manufacturing and shared how they got involved in a very cutting-edge application of cold-formed steel.

Their first commercial cold-formed steel job in Las Vegas presented itself in 1997 on the Las Vegas Strip, far away from their previous jobs as general contractors in Kansas. Before it became a popular Vegas hotel and casino, the Venetian Hotel & Resort was a drawing on paper that Tom was asked to work on as a framing contractor. The position required the couple to move to Nevada for a short period of time. They've never left.

Their "temporary" move to the West presented a unique business option that suited their interests. Around 2001, with the Vegas construction market heating up and the demand for cold-formed steel framing in all construction applications growing, they saw an opportunity to create a start-up cold-formed steel operation. The McBrides had always been drawn to steel components in particular. "We contemplated the idea of getting into the steel structural building components industry for many years, and when the opportunity came along we went for it," said Tom. Cathy says that their previous work with wood stick framing led the couple to the conclusion that manufactured components offer a far more economical framing method. With the Venetian project behind them, the McBrides permanently relocated in Vegas and formed M-Truss.

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## at a glance

- ❑ Cold-formed steel is gaining respect and popularity in the industry thanks to challenging design projects and diverse construction applications.
- ❑ M-Truss worked on a luxury condominium project in Las Vegas that called for steel radius trusses and radius wall panels.
- ❑ Companies like M-Truss have been successful by demonstrating the bottom line savings of cold-formed steel in the ease of installation and reduced labor costs.

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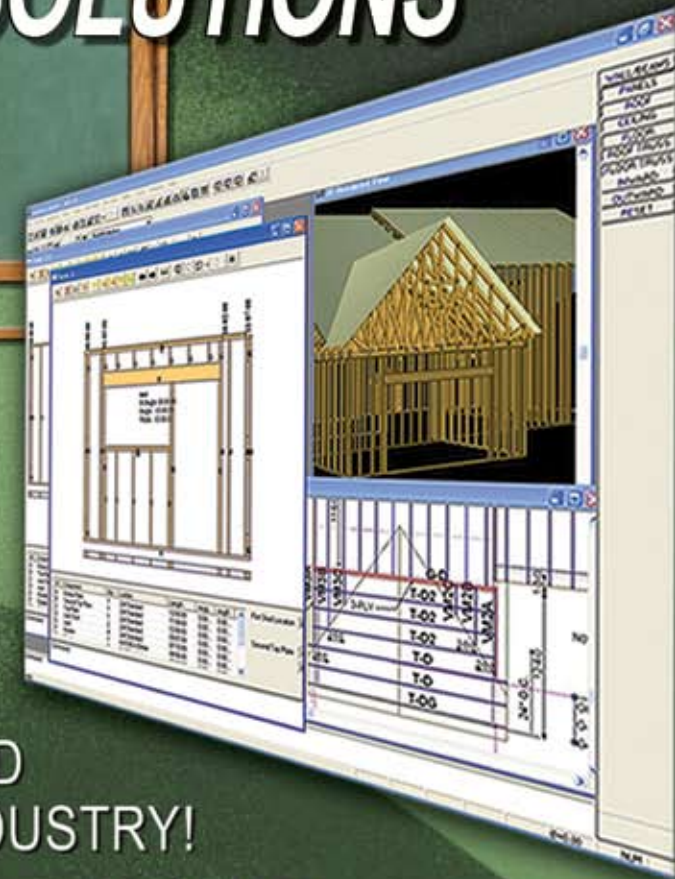
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“Figuring out how to radius the steel so we could consistently create the truss, putting together the wall panels, building the jig, and maintaining consistency and quality were the biggest challenges.”

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pany chose to work with M-Truss: “Due to the design we determined that radius steel was the only option. It made the most sense to hire a specialty truss company that specializes in these designs.”

### What Is a Radius Component?

There are different kinds of radius trusses. Radius shapes include domes (circular), ovals and elliptical (which are curved then flatten out). Although they achieve the same aesthetic effect, radius steel trusses are built using a very different process than wood radius trusses. “Wood radius trusses are created in one of two ways. You have a beam and cut the wood in a radius, or create the curved shape using smaller lengths attached with connector plates,” explained Cathy.

In contrast, steel radius trusses are not segmented. “They are put through a process that forms the steel to an arch or curved shape (which is the radius). This process keeps the steel’s proprietary shape and maintains its strength,” she said.

Which is easier said than done. “Figuring out how to radius the steel so we could consistently create the truss, putting together the wall panels, building the jig, and maintaining consistency and quality were the biggest challenges,” according to Cathy. It took three months to complete the design work for the job, and it was a virtual race to keep up with the timeframe KHS&S had set.

Despite the time crunch, they were able to stay on schedule. It helped that they had extra motivation—to prove that pre-

manufactured steel components are worthy of respect. “Those who were leery of the concept of bringing a completed steel component of this size on site were amazed at the ease of installation,” comments Cathy. For this project they sheathed the wall panels on the ground and then flew (rafted) them up to the top—up 21 stories—to place.

### Challenges

Tom feels that the biggest challenge steel component manufacturers face is getting their product accepted by the construction community. Cathy agrees that getting builders and contractors to think in terms of pre-fab steel has been a long hard struggle. “But the ones that have made the conversion—have been faithful,” she added.

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After five years in business, they found themselves in the midst of one of the most complex cold-formed steel design applications ever; and thus took on their first project utilizing radius components. KHS&S Contractors Inc. approached M-Truss about One Queensridge, a luxury condominium building situated ten miles west of The Strip. The project called for steel radius trusses for the lobby and the penthouse roof, as well as radius wall panels.

Kevin Nanney, who has held the position of senior project manager at KHS&S for ten years, explained that the condo’s very intricate roof design was a major reason that his com-



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The company recently became members of WTCA's Cold-Formed Steel Council (CFSC), an organization that Tom thinks will play a big role in the advancement of steel components. "I think CFSC will help standardize the industry on the component side, as well as educate the marketplace and the building officials. It has a lot to offer the industry as a whole."

In addition to becoming involved with CFSC, M-Truss feels it is worth it to spread the word about steel and help it gain acceptance in the industry. "Steel component construction is a quality product, once a customer uses it, they can tell the difference," says Cathy.

Despite the challenges of selling the marketplace on cold-formed steel, Cathy is quick to point out the undeniable benefits of using steel components. "The main selling point is the ease of installation," she said, noting that this is where the cost savings of using steel components are generally realized. "The cost savings are in installation, you don't have as much

crew out there, and it's easy to install. It's like putting together a puzzle when you are using prefab components like this."

As for the slow housing market, the McBrides feel they aren't really suffering the effects. "We are not really affected because we do so little residential, although we have recently completed a high-end all steel home using our wall panels and trusses. We do a lot of condos, but they are kind of gray-line—they are built like commercial and sold like residential," said Tom, noting that roughly 90 percent of the company's business is in commercial framing. This unique feature has kept them from being directly hit by the downturn in the housing market.

So far, their venture into the steel components industry has proven to be profitable, and the McBrides have high hopes for the future. Cathy says M-Truss is ready to take it head-on. If their recent foray into supplying steel radius trusses is any indication of what they can do, M-Truss's future looks bright. "We like to think outside the box, we want to get creative and see what we can do with steel," she ended. "We want to add to what's out there." **SBC**



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