



Silo Suite

by Libby Maurer

Blenker's motto:
"We can do anything, the impossible just takes longer."

When someone has a crazy idea, we're not afraid to follow through..." Jason Blenker of Blenker Building Systems has always said this about his company. Their most recent job is no exception. This time, the crazy idea came from a very familiar customer—himself!

Blenker, an Amherst, WI native, bought an old farm property about five years ago. He and his wife raise horses, chickens and plan to add beef cows soon. Though the barn is functional, the couple planned a few renovations to increase space and restorations to maintain the character of the outbuildings.

For instance, the silo attached to the barn didn't have a roof for as long as Blenker can remember—it hadn't been used since the '60s. "It was either fix it and do something with it or tear it down. I decided I'd rather preserve it," Blenker said.

So Blenker sketched out a new trussed roof and handed it off to technician Don Rogers to design. But that's not all. "We debated putting just a roof on it. Then I thought it'd be cool to have a room underneath it," Blenker added. "That's what happens when business gets slow, you think of weird stuff to do," he said, making light of a slower-than-average year.

The result of having time on his hands is an impressive silo suite that measures 36' from the ground. At 13' in diameter, the room also has a 3'6" walkway around the outside that will eventually have a railing.

Truss technician Don Rogers was the lucky recipient of Blenker's sketch. Rather than start at the computer, however, Rogers had to begin in the shop. "Believe it or not the biggest obstacle was figuring out how to get the roof out the shop doors," he said. The doors are 14' tall, and Rogers knew the structure would exceed that height.

He determined the assembly would have to be designed so it could be separated into pieces and then assembled once it cleared the shop doors. First Rogers designed a 2-ply girder to run the radius of the roof—20'. This way the team could fasten the plies together in the shop (to make sure it fit together perfectly), but take them apart to get the two equal halves out the door. Next, he input two 2-ply girders to hit perpendicular to the main girder. Together, GR-1 and the GR-2s cut the roof into four congruent quarters (see Figure 1).

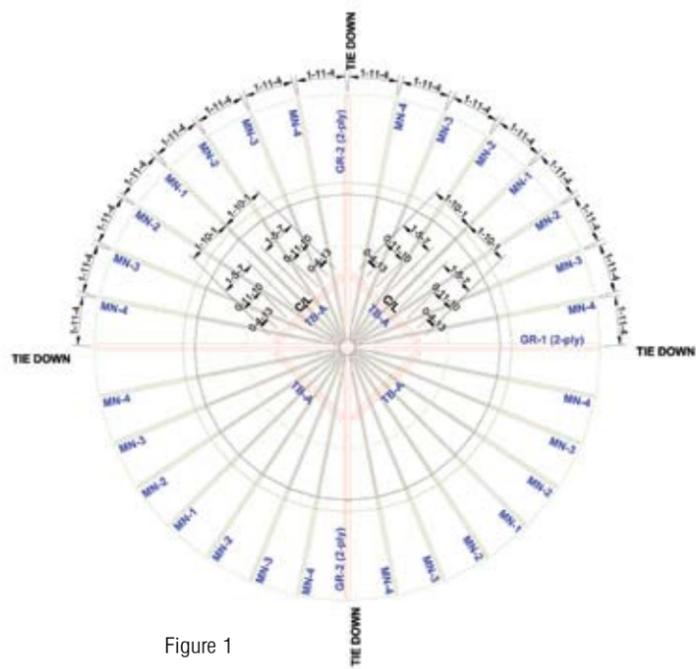


Figure 1

Twenty-eight mono trusses filled in the quarters (seven in each) creating the round shape of the roof. The monos came to a point to form the peak of the roof. "The restraint in trying to build something like this is that everything has to come together in the center, so there has to be something to carry the load of the trusses," Rogers explained. So Rogers added four 4' long truss beams at 45-degree angles to each girder to tie in the mono trusses.

Rogers said the roof was assembled as if it was one piece in the shop, including sheathing and shingles. "Then we unscrewed the long girder and tipped it on its side to get it on a trailer and wheeled out," he said. The halves were elevated on the ground so someone could get up inside and fasten the girder back together.

Project manager Rick Martin designed the walls and floor of the suite that would rest on the existing silo walls. First, he drew in the structural elements of the floor—two parallel 2-ply 6'x6' beams spanning the diameter of the assembly (see figure 2). Then he drew a perimeter around the center beams; the perimeter dimension equaled 13' plus 42" for the walkway outside the room. Martin drew in ten 6'x6' beams in the center of the parallel beams, dividing the floor into six sections on each side. He added 2'x6' members to each section for additional support. The beams are anchored to the silo and also allow for a hole in the middle of the platform for a staircase. Deck boards would eventually be nailed to the beams in the shop to form a platform.

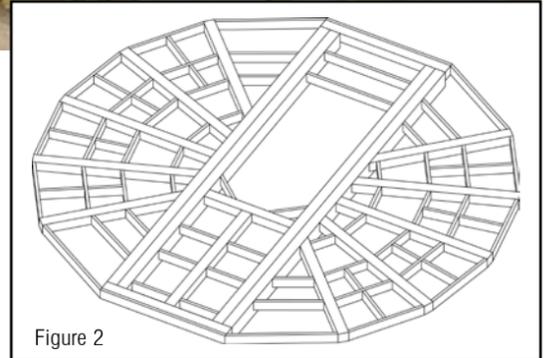


Figure 2

Next Martin, Rogers and Blenker put their heads together to figure out how to build the platform. "It was a challenge to accommodate the cantilevered floor around the room," Martin said, speaking to its size and awkward shape. Out on the shop floor, the crew cut and laid out the 6'x6' and 2'x6' beam pieces.

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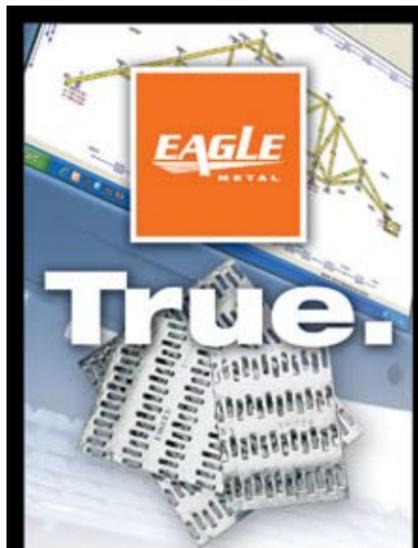
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Next, deck boards were placed on top and nailed in. Then they took a string line and traced the entire floor system using Martin's drawing as a template. "Once the lines were there, we cut the sheets out [to create the perimeter]," he said. This included cutting out a section in the middle of the platform for entrance to the room through the silo.

For the walls, Martin designed them in eight different sections, each with a window opening. The top and bottom plates were hand-cut in the shop from 4'x8' sheets of OSB. Once assembled, the walls were sheathed and sided in the shop.

Once at Blenker's farm, the crew maneuvered the crane into place. "Kind of a tight space to get into," Blenker said. "But we made sure to follow the SBCA Crane Safety Guidelines." (Blenker helped staff write the program.) First the floor assembly was craned into place on top of the silo. Then the room was placed on top of the floor. Next the roof was craned to the wall top plate.



How's the view from inside the tower? Not so fast—Blenker still has to build the stairs that will run up the middle of the silo. "Can't get up there yet," he said. Blenker says he has no idea what he'll do with the silo suite. With a seven-month-old baby in their lives, the Blenkers should have no problem finding a use for their new space. **SBC**

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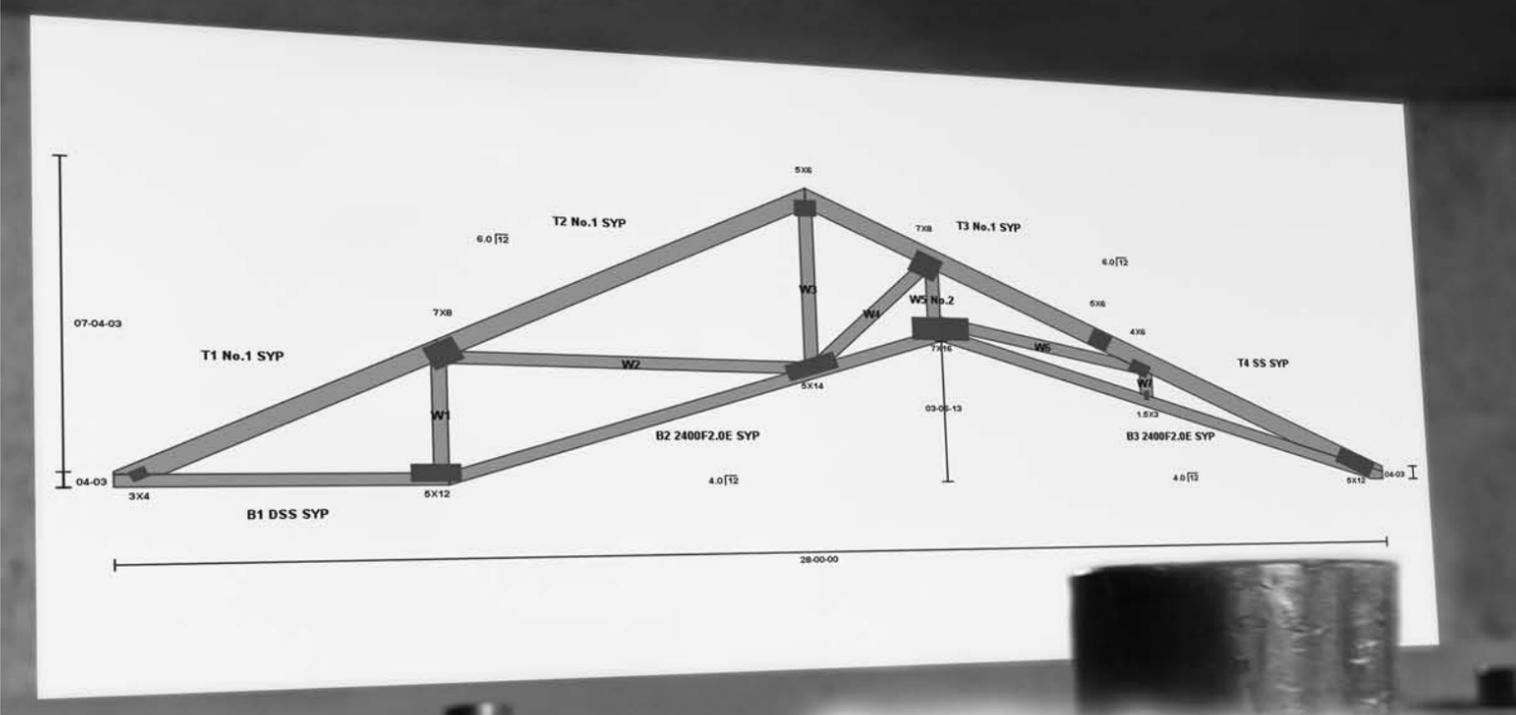


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