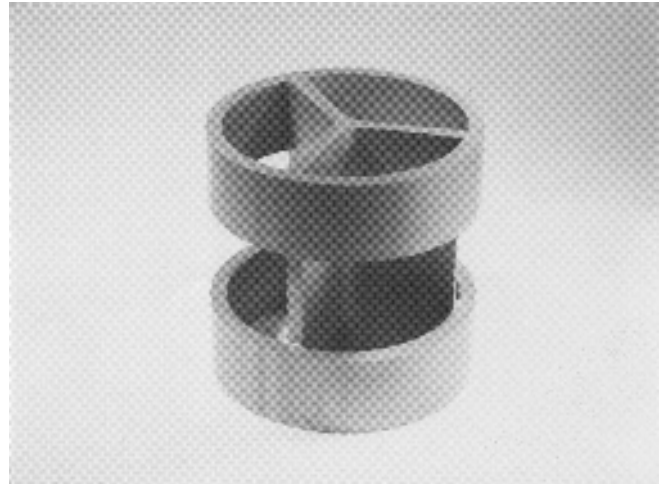


super-loc connection system



At the heart of the Natural Spaces Dome system is our patented connection hardware which we call the super-lok.

Invented in 1978, it was the answer to six years of dome building using inadequate wood plates, metal brackets, and panelized systems.

The sleeve is made from very heavy gauge steel with extra thick zinc plating to make it rustproof.

In connecting the sleeve to the wood strut, anything less than four 1/2" bolts just wouldn't do to satisfy our stringent engineering requirements. Again, the bolts and nuts are zinc plated.

What we were looking for was a connector that was self-aligning and so simple to put together that any dummy- sorry, that should be any "novice" dome builder could do it.

We didn't want you to have to do any of the assembly of the strut hardware upon the scaffolding.

With our system all you do is slip the sleeve tongue into the hub slot and pound a hardened, zinc plated bolt "pin" in place, securely locking the two together. That's it-no coming back to tighten, no re-aligning, no adjusting.

The next step is just moving on to the next strut.

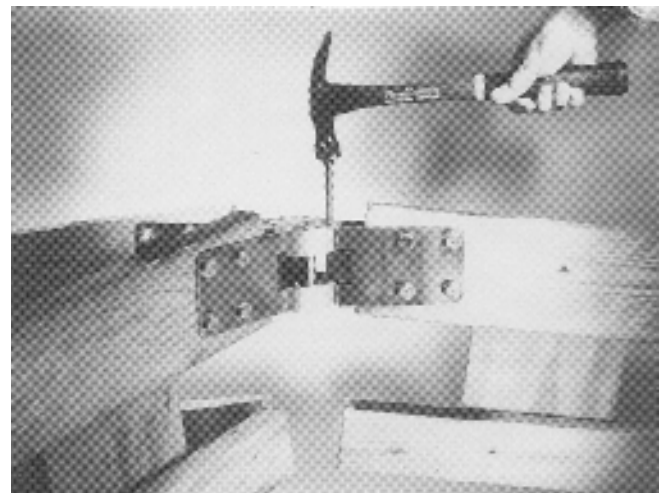
Working with our structural engineer and our metal fabricator, we came up with our unique hub design.

The entire hub is a one piece, very high strength, aluminum extrusion.

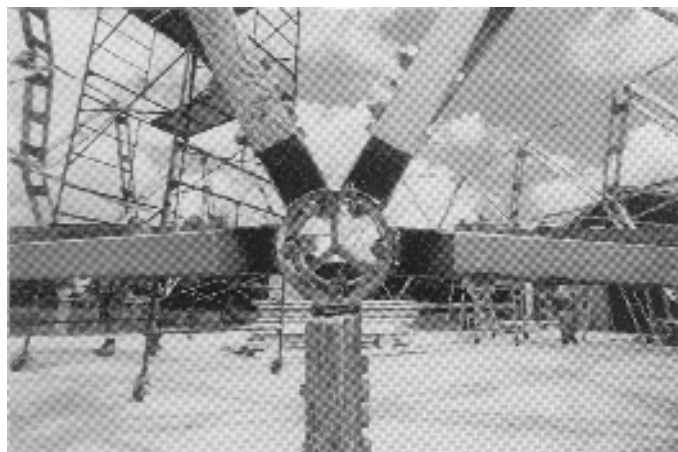
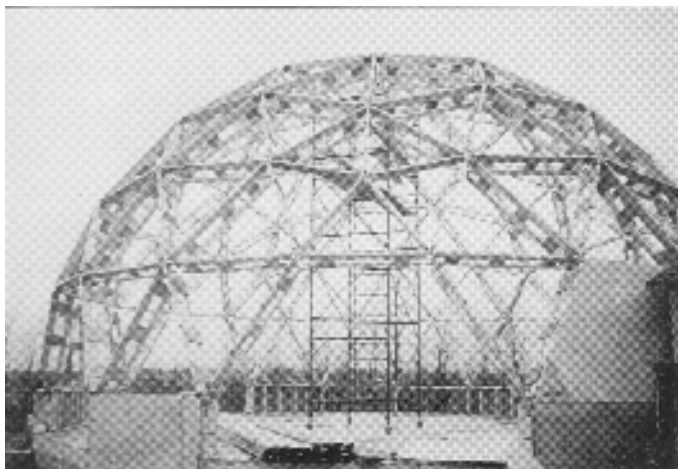
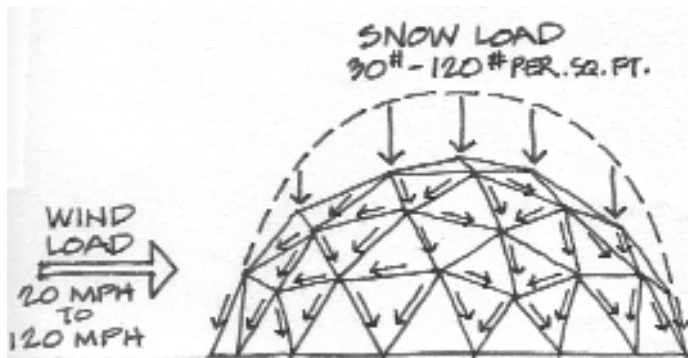
The tongue from the sleeve fits onto the slot around the perimeter of the hub.

Having squashed various pipe hubs during testing, we came up with integral reinforcing spokes to strengthen the hub. It now could take extreme pressure from the struts-both pulling and pushing.

So sure were we that we had a fantastic dome connection system, we obtained a patent, #4, 262, 461.



The need for a super-strong connection device for domes becomes evident in examining how the dome framework reacts to loads:



The dome framework transfers all of the roof loads directly to the base of the dome. These loads get added to each other on the way down. The lower part of the dome has to be able to take 6,000-8,000 pounds of pressure at each lower connection point. This means that the weakest link in the "chain" has to be able to take this pressure.

Our super-lok connector has been tested independently and by itself will withstand over 14,000 pounds of tension. However, tests were run with our sleeve mounted on the #1 grade southern pine strut. This better resembles actual load situations.

The test tried to pull the wood strut from the hub. The wood split at over 8,000 pounds but did not actually come apart. Our sleeve has four 1/2" bolts connecting it to the strut. One of our competitors uses 2 bolts in attaching a bracket to their strut. They use fir lumber which is not as strong as southern pine. Even though they use 5/8" bolts, our connection system would still hold at least 30% more stress.

We have done extensive computer engineering analysis on our dome with our structural engineers. Our system surpassed the structural needs for 10 different loading criteria the worst of which were:

- 80# snow load combined with 80 mph wind
- 50# snow load combined with 90 mph wind
- 80# snow load combined w/zone 4 earthquake
- 120 mph basic wind

This combination loading creates what is called "eccentric" loading where all of the normal roof load is put on only 1/2 of the dome. Again we surpassed the structural needs.

The Natural Spaces connector is the strongest dome connector on the market.

Our competitors have been heard to say our system is over engineered - we think you deserve nothing less.