

Above the Big Top: CST and Bell County, Texas Put on a Blockbuster of a Show

Even when the lead actor gets sick, the show must go on. Not only is that true in show business, but it's also true with big entertainment venues. Keeping the lights on and the seats filled during an extended period of repairs is a testament to collaboration and intelligent design, and that's the spirit behind a successful partnership between CST Covers and Bell County, Texas.

The Bell County Exposition Center is a 7,000-seat, 81,000-square-foot multipurpose facility in Belton, Texas. With its aluminum geodesic dome rising 68 feet, it's a can't-miss landmark in the heart of Texas that attracts more than 500,000 people every year for conventions, concerts, hockey games, Mixed Martial Arts (MMA), monster truck shows and rodeos.



Because the Expo Center generates a lot of revenue, the county can't afford to let it sit idle for months. Although that looked like a real possibility one dark afternoon in April 2011 when a severe storm swept through and hail pummeled the Center's aluminum roof.

Back in 1988, CST designed the roof with the unforgiving central Texas weather in mind—making it easy to repair after a hail or windstorm. Its modular design features more than 1,000 triangular panels secured by a network of battens, allowing for efficient removal and replacement. Being able to replace the panels individually meant CST crews were able to work around the Expo Center's schedule so not a single event had to be cancelled.

"Scheduling around events is our biggest challenge and CST helped us make the transition period seamless," says Joseph Latteo, Contract Manager for Capital Projects and Construction, Bell County. "When you're talking about a weekend event, the setup and tear-down, in addition to the event itself, spans several days, which means the roof work was often compressed into a Monday through Thursday timeframe."

Latteo adds that many acts and groups book the Expo Center up to a year in advance and are unable to withdraw at a moment's notice. So, working long hours on a limited number of days each week, CST crews completed the removal of more than 1,000 hail-damaged panels and installation of new panels in 8 1/2 months. During that time, Latteo estimates about 75 events were held in the Expo Center and audiences were unaffected by all the work.

For example, CST took safety precautions when moving a lift or a crane with thousands of pounds of material while Center patrons were attending events in the adjacent special events center for a livestock show.

“Part of our agreement with the Expo Center was to consider their schedule, which was fluid,” says Bill Renfro, Project Manager, CST Covers. “As changes were made or events added to the calendar we needed to be able to respond. The county was helpful, giving us plenty of notice of changes and working with us to get us access when we needed it.”

Since a rainstorm can bubble up at any time, crews had to make sure the roof was restored to its watertight condition at the end of each day, which was especially critical when an event was coming up and roof access would be unavailable. Before the conclusion of each day, every panel and batten had to be secured and sealed.

There were also environmental and savings benefits. Since aluminum is completely recyclable, the county received a credit for the discarded aluminum to the tune of \$91,000, which was factored into the cost of the project. The county also scored a big win for sustainability when CST was able to install a higher-rated insulation enabling more efficient heating and cooling.

“It’s always an absolute pleasure to work with CST,” says Latteo. “We got to know each other very well during those 10 months and I can’t say enough about their commitment to a successful project and willingness to go the extra mile to understand and respond to our needs.”

Even though 25 years had passed since the roof’s construction, CST was able to mobilize quickly and efficiently.

“We design and deliver sustainable solutions that stand the test of time,” says Grace Ferretti, Architectural Sales Manager, CST Covers. “When we sit down with a client, at the very beginning we consider their long-term needs and the environment in which they’ll be operating for years to come.”

It’s a painstaking job—removing and replacing fewer than 20 panels a day for several months—but that doesn’t deter CST from striving for consistency and quality.

“Maybe the best thing you can say about the job is that, in the end, the dome looked just the same as the original,” says Renfro. “That’s the beauty of the CST design.”





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With outstanding planning and cooperation, it's no accident that all the pieces came together so the show could go on under the big top. While not the "greatest show on earth" it's a beautiful sight for construction and facility managers.

CST Covers, a division of CST Industries, Inc., is an industry leader in designing, engineering and manufacturing aluminum spaceframes and specialty structures including environmental enclosures, canopies, entranceways, atriums, domes, large and small span structures and specialty lightweight structures.

From Concept to Completion:

CST provides the creative assistance you need to ensure your project is completed on time and within budget.

- **Design**—Working closely with your project team, our design consultants can help turn your concept into a creative and cost effective solution. We know every project is different and we use proprietary 3D modeling software to assure we present the best structural options for your most specific needs.
- **Engineering**— From proof to concept to final structural design, our team of professional engineers ensures your ideas become reality. In facing any design challenge, our engineers strive to meet your design requirements as efficiently and economically as possible.
- **Fabrication**—Utilizing a state-of-the-art fabrication facility and maintaining stringent production standards and controls, we bring a level of quality to your project that brings your design to life.
- **Installation**— Our lightweight aluminum components, proprietary assembly processes and specialized construction equipment bring an unmatched level of quality and efficiency. At any given time, our crews and construction consultants are working at sites around the world.

CST Contact Information:

CST Industries, Inc.

Kim Mathis
Global Marketing Director
713.351.3769
kmathis@cstindustries.com

CST Industries, Inc.

Grace Ferretti
Global Business Development Manager - Architectural
713.351.3787
GFerretti@cstcovers.com