



Dome Technology rehabilitated the dome roof, including installation of ceiling tiles.



Fabricated in the Dome Technology shop, new steel beams were installed below the existing wood beams.



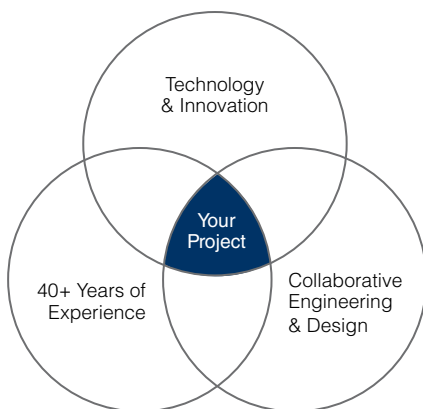
The team designed all steel components around preserving the existing star motif in the dome roof.

Scope of Work

- Value Engineering
 - Structural Engineering
 - Mechanical Engineering
 - Electrical Engineering
 - Civil Engineering
 - Foundation Construction
 - Steel Dome Construction
 - Additional Steel & Concrete Construction
- None Some All

Dimensions

- 1 steel dome roof: 68.9m (226ft) in diameter



Overview

Kingsport City Schools had a large, impressive sports facility on its Dobyns-Bennett High School campus, but the gymnasium's wooden dome roof was failing, and the district was eager to find a solution that didn't require a wrecking ball.

Dome Technology was hired to rehabilitate the key element of the facility: the 50-plus-year-old Buck Van Huss domed roof. According to vice president of construction Bryan Butikofer, other contractors claimed it couldn't be salvaged, but the Dome Technology team was determined to make it happen. The two greatest achievements on this project were both engineering feats: "coming up with the solution that no one else could" and "detailing the steel to perfectly match the existing geometry," he said.

Dome Technology fabricated all components for the roof retrofit, including steel plates, beams, and pipe connections. The new steel beams were joined to the underside of the existing wood beams for stability and strength while preserving the ceiling's unique star motif. Support for a new four-sided, centrally hung scoreboard also factored into the engineering plan. The team applied polyurethane foam and a two-part epoxy product to the roof exterior.

The project was finished ahead of schedule, and the new domed roof promises an unlimited lifespan for the 5,500-seat facility.

Dobyns-Bennett High School principal Dr. Brian Tate said school and district leadership prioritized doing the project right while considering budget and timeline.

"We wanted to keep the tradition and heritage of the facility as it is an icon of our community. The advantage to the renovation process chosen was that we were not concerned with weather as the existing dome stayed intact, and this allowed us to get back into the area quicker and still use (portions) of the area not being renovated," he said. "Everyone involved did a great job."

Read more about this project at [this link](#).