

Princeton University

Background

Princeton University required the replacement of the tensile membrane system at the Weaver Track & Field Stadium. The University attempted to work with other companies including the original, but could not identify a company willing and able to work with the existing design elements while bringing the structure up to the aesthetic requirements. Signature Structures presented a solution to meet all the requirements and was contracted to dismantle the existing structure, prepare new design components, integrate existing framework with modern innovation and replace the membrane with an aesthetic, long life solution.

Solution

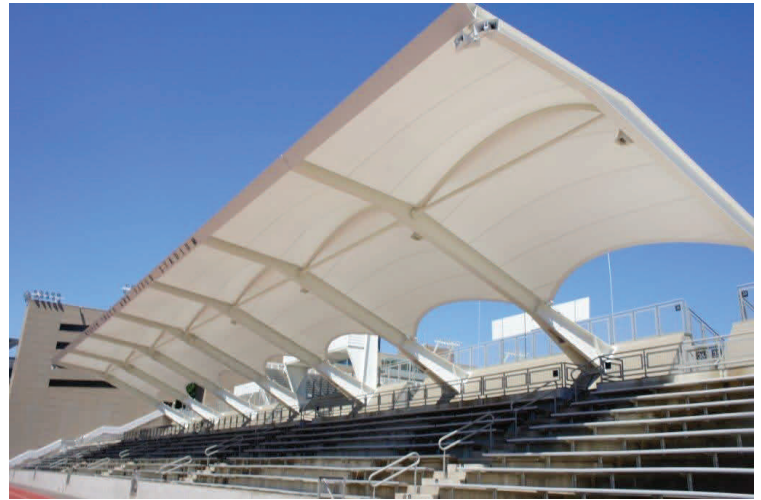
The project required meeting with the Athletic Department to coordinate execution of the construction without impeding on the natural student and event traffic at the facility; and University Engineering & Architecture Departments to ensure the new structure met all code compliance issues and aesthetic finish.

Signature provided a new membrane system, replacing all cables and attachment hardware, developing new tensioning membrane plates to integrate within the existing framework and outfitted the structure with a new keder extrusion that allowed for horizontal tensioning.

Details

The canopy provides shade to spectators and provides a transition at the courtyard area between the Football and Track Stadiums. A complex and detailed 3D Survey of the site and all existing frame infrastructure was required to integrate older technology with new tensioned membrane structure innovation. To keep costs under budget, it was determined that only critical new hardware and tensioning systems would be replaced. Multiple software formats were used to develop final CAD layouts that confirmed our new design worked with the existing framework.

The original design did not allow for horizontal tension, so a new tensioning method was developed. New membrane plates and cable systems were designed and replaced. Utilizing slotted aluminum keder extrusion and developing an custom installation method, allowed the shaped panels to be pulled in and tensioned.



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Due to the University's original attempt at replacement, and subsequent hiring of Signature Structures, most of the track and field renovation on site had been completed prior to our arrival. Signature had to respect the improvements and minimize damage or obstruction of day to day activities. As a result, we worked in larger aerial lifts and completed much of the work off the ground to ensure the new track, bleacher improvements and concrete work remained untouched from our equipment or the material. The final result was a finished system, beautiful in appearance and perfectly blended in its surroundings.

Signature Structures completed the project within the window Princeton University requested for a competitive budget. We included the client throughout the design, manufacturing and installation process giving them the peace of mind that Signature was the appropriate firm for the job.

Client Appreciation

Signature Structures was commended for our professionalism on site and given an exemplary award from the university for our adherence in allowing all day to day activities to go on unhindered. Signature will be providing long term maintenance and upkeep to the facility as Princeton University has become a long term customer for us.

Due to our level of commitment, and the execution of promises to the client, site visits to prospective clients and any referrals required will be handled directly by the staff at Princeton, further showing our good faith and long term relations with our clients.

