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Fun, Functional Fabric: SAAHP Students Sweep Competition in Fabric Structures Challenge

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Projects by architecture graduate students claim first, second and third at the Industrial Fabrics Association International's Student Design Challenge

An image from the award-winning project titled, "(Con) Temporary," by architecture graduate students Dominic Skrajewski and Leslie Hulbert.

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BRISTOL, R.I. – From a marine-inspired performing arts stage at Fort Adams in Newport to an urban tree canopy garden on the Charles River in Boston to large, whimsical tents for outdoor events on the Roger Williams University quad, a trio of unique fabric-based structures designed by graduate architecture students propelled them to a sweep of the top three spots in an international student design challenge.

When the Industrial Fabrics Association International announced the winners of its 2015 Fabric Structures Student Design Challenge last week at the IFAI Expo 2015 in Anaheim, Calif., RWU's Nicholas Musilli landed first place for his individual entry, "Sail Stage," Kyle Baron and Catherine Smeykal took second place for "Urban Canopy Garden," and Dominic Skrajewski and Leslie Hulbert earned third place for "(Con) Temporary."

Not a bad showing, considering entry into the fabric structures competition was a first for students at Roger Williams – not to mention the challenge of integrating fabrics and textiles as major structural components, not exactly an everyday undertaking for many in the design/build world.

Each of the three projects originated in last spring's Design Structures II course taught by Associate Professor of Architecture Robert Dermody, who created a curriculum around fabric structures when he learned about the competition. With an open-ended design challenge – to develop a fabric structure of 600 to 2,300 square meters in size – and an unfamiliar medium, the students had their work cut out for them, he says.

While fabric is a largely untapped material in large-scale projects, Dermody says, it can be economical, sustainable and visually appealing. Students analyzed existing fabric structures and then launched their own visions to create original and temporary, yet structurally sound, structural additions to locations of their choice. Many of them found working with fabrics a surprising test of their skills.

"It's hard for students to grasp the shape of fabric," Dermody says. "Fabric will take its own shape and determine how it wants to hang. The designer needs to be cognizant of how they're going to impart tension on the materials so that the structure will hold the desired form."

Musilli, the first-place winner, presented his award-winning design at the IFAI Expo this month. Inspired by the waterfront location of Newport's Fort Adams, he conceived an entertainment venue, with the Volvo Ocean Race Newport Stopover held at Fort Adams last May in mind. Sporting elements that tie the sailing community together, a mast serves as the main structural component and curved, sail-shaped structures branch off radially from the stage. Although challenging to design with fabrics, Musilli says that wasn't the toughest part of the competition.

"The biggest challenge was creating a believable story to accompany the design," Musilli says. "Once the story was in place, the structure built itself – it was easy to bring it to life."

Although inventing a fabric structure to the specifications of the design challenge was part of the course, entering their projects into the competition was not required – and Dermody says the students who challenged themselves further by putting their work up against others around the world should be commended.

"I'm very impressed with the students, because they didn't even have to enter," he says. "Three teams chose to and went above and beyond – even after the semester's end – to add more and improve their projects for submission."

With the IFAI Challenge results in and an RWU sweep on the books, it seems like Dermody's students made a wise decision.