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UK students take their solar house to national contest in Washington

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At first glance, it looked like somebody's house had been grazed by a tornado.

It turned out to be one of the most environmentally friendly, technologically advanced houses in the world. It just wasn't quite finished.

Workers were scurrying Thursday to put the next-to-final touches on the University of Kentucky's entry into a solar house competition that will be held Oct. 8-16 on the National Mall in Washington.

The 800-square-foot house, called S•KY BLUE (the "S" is for solar, the "KY" for Kentucky) will compete against entries from 19 other colleges. The competition is sponsored by the U.S. Department of Energy.

Early Saturday, S•KY BLUE will leave Lexington for Washington on five trucks. Final assembly, including a large deck and photovoltaic, or PV, panels that convert sunlight to electricity, will take place on arrival.

Several hundred thousand people could pass through it on the Mall.

What they will see is both high tech and Kentucky-centric.

- The roof is covered with PV panels, and will tilt up and down throughout the year to catch the sun at just the right angle.
- The exterior is covered with pixilated photos of Kentucky landscapes; the interior is finished in Kentucky maple and cherry wood.
- Every room has natural light. Windows darken and become clear again to allow or block warming rays.
- Water collected on the roof will be used to flush toilets and water outside plants that are native to Kentucky. Sensors in the soil will determine if the plants need some of the stored rainwater. If the soil is too saturated, the sensors will detect that and dry it.
- Because the house is small, some furniture and doors slide into walls when not in use. Shaker-style pegs hold chairs that hang flat against the wall, then unfold for sitting.

The house is designed to be "net zero," which means it will generate more energy than it uses. During the day, its PV panels will generate more electricity than the house uses, so some of the juice will be put on the electric grid to be used elsewhere. At night, it will pull power from the grid.

The competition is called a Solar Decathlon because houses will be judged in 10 areas — architecture, engineering, market viability, lighting design, communications, comfort, appliances, hot water, energy balance and home entertainment.

Donald Colliver, a biosystems and agricultural engineering professor, said it was an honor for Kentucky to be invited to take part.

"For engineers and architects, this is the equivalent to making the Sweet 16 in the NAAs," he said.

About 150 UK students from several colleges worked on the house for more than a year. About 30 will be with it in Washington.

The cost for the project is \$750,000. Officials said that included a lot of custom-made parts, as well as transportation for the house and housing for students and faculty members in Washington. E.ON U.S., which owns Kentucky Utilities, contributed \$250,000 and is the major sponsor.

The students will put what they have learned to good use in designing more environmentally friendly buildings in the future, said Gregory Luhan, an associate dean for research in the College of Design.

A year from now, after the competition in Washington is long past, S•KY BLUE will begin a new life — as the visitors center for the 2010 Alltech FEI World Equestrian Games.

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