



U. S. D E P A R T M E N T O F E N E R G Y

SOLAR DECATHLON

POWERED BY THE SUN

2009 Home

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The Solar Decathlon is an educational project of the U.S. Department of Energy (DOE).

Crowder College

Team Web site www.crowder.edu/solar/2005/

The Arts & Crafts House, Solar Style

The Crowder College Solar Decathlon team members think that their design philosophies would make Gustav Stickley proud. Stickley, a well-known American craftsman from the early 1900s, is considered the father of the American Arts & Crafts Movement, an architectural style built on the same principles that today we call *sustainable design*. Because many of the historically important structures in Neosho, Missouri—home to Crowder College—are built in the Arts & Crafts style, the students have adopted many of the principles pioneered by Stickley and later expanded on by Frank Lloyd Wright.

From the outset, the team thought carefully about how to blend these principles with the challenges presented by the Solar Decathlon. The students settled on a modified bungalow design constructed of "pods" that detach and fold down for easy transportation and assembly.

The team feels that the courtyard on the house's north side, accessible from the home's interior, has particular aesthetic appeal. And the home's broad south module permits optimum roof orientation and surface area for the hybrid PV/solar thermal system of high-efficiency, heat-tolerant Sanyo PV modules. Team member David Mathews says that the type of module they are using can maintain higher voltages at higher temperatures. He puts the system's cost of about \$40,000 in perspective: "We point out that our solar system costs about the same as a new SUV. That brings home the fact that you can choose to spend your money in ways that better the planet."

In terms of electricity, the students also plan to "walk the talk" by using the trailer that Crowder students built for the 2002 Decathlon competition—which houses an on-board battery system run off a PV panel—to power their tools during assembly on the National Mall.

For their flooring, trim, and cabinetry, the students are using hardwood from the Pioneer Forest in the heart of the Missouri Ozarks. Pioneer is the only forest in the state certified for responsible and renewable forest management by the Forest Stewardship Council.

In summing up her Solar Decathlon experience, Project Manager and student Liz Flores says, "This technology makes a lot of sense, and it's been fun and interesting working through the process with a diverse mixture of traditional and nontraditional students." And in terms of tradition, Crowder College just may have pioneered a whole new one. After working together on the project, Liz and fellow team member Anthony Flores were married in January 2005.

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The Crowder team's environmental ideals extend beyond housing.



Crowder's house—built in the Arts & Crafts style—features a courtyard on the north side and a hybrid PV/solar thermal system on the south.



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