

## Students ready to compete in solar affair

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Students and faculty from the school of architecture are hoping to have their day in the sun next year in Washington D.C.

Late last week, the University of Waterloo School of Architecture in Cambridge was selected with Ryerson University and Simon Fraser University's School of Interactive Arts and Technology (SIAT) to compete in the 2009 Solar Decathlon competition.

"It's the first time we've entered and the first time we've been selected to compete," said Prof. Geoffrey Thun, lead faculty advisor at UW.

The competition challenges 20 specially selected university teams to design, build and operate the most attractive and energy efficient solar-powered home. The Solar Decathlon is also a public event designed to increase awareness of energy for residential use and transportation. The prototype homes will be installed in a "Solar Village" on the National Mall in Washington where visitors can tour the homes to learn about design and construction techniques. The past three events have attracted more than 100,000 visitors to the National Mall.

In putting together the submission, Thun pooled the talents and expertise available at UW with those of students and faculty from Simon Fraser and Ryerson.

The school of architecture will lead a pan-Canadian team of approximately 200 of faculty and students who will design and build an 800 square foot modular structure which has been dubbed the North House.

One of the goals of the competition is not just to design a solar-powered home, but to partner with industry to introduce emerging new technology from around the world to the marketplace.

"We'll be pushing the envelope of design and new technology in this competition," he said.

The North House is being designed in such a way as to allow the different technology available in different regions of the country to be incorporated into its construction, Thun said.

"North House is a holistic, responsive and flexible strategy for solar living in the diverse territory and extreme climates of northern regions," said Lauren Barhydt, one of the senior graduating UW students working on the project.

Barhydt, who is the student team coordinator said this is a rare opportunity for the UW group.

"It's rare that students have the opportunity to be involved in a project of this magnitude," she said. "It's thrilling to be collaborating with institutions across the country, and working on the cutting edge of



Architecture grad student Lauren Barhydt (left) and Professor Geoffrey Thun chat over the design of the North House project they will be taking into competition next year in Washington, D.C.



An artist's rendering of North House, which will be entered for competition by school of architecture students at next year's Solar Decathlon.

sustainable design and manufacturing."

The competition also is providing something else at the school of architecture.

"Usually you'll have students working on their projects or doing their glass work. You also have faculty working in the classroom or on their own projects, but it's rare that you get students and faculty working together on a project like this," Barhydt said. "It pulls us together for a common goal."

Although less than a week has passed since their selection, negotiations are already underway to nail down space where the North House will be constructed. Thun cryptically states it will be "somewhere in the Cambridge-Waterloo area, with easy access to the Mechanical and Engineering faculties."

The house must be designed to sit on a flatbed transport truck so that it can be shipped to Washington, D.C. Upon arrival the team will have 10 days to complete construction before their entry is judged and put on display for another 10 days. They then will take another few days take it down and ship the house back to Canada.

The Solar Decathlon is a competition sponsored by the U.S. Department of Energy and the National Renewable Energy Laboratory, which seek to foster development and facilitate widespread adoption of solar-powered homes that demonstrate solar technologies in marketable applications, through technology research and development and partnerships.

But once the competition is over there is still more work left for the North House.

"There is also a requirement that once the competition is complete that the project be put on public display to raise public awareness and continue monitoring its performance," Thun said. "At the last decathlon the University of Michigan won and they set the house up on campus. We plan to do something different. First it will head to Vancouver to be put on exhibit during the 2010 Olympic Games. Then it will be coming east."

Arrangements are being made with the Toronto and Area Conservation Authority to install it at their Living City Centre in the Kortwright Conservation Area. Students from Ryerson will then take over the long-term monitoring.

The 2009 event will be the fourth Solar Decathlon (previous competitions were held in 2007, 2005 and 2002). The teams will be judged in 10 areas including architecture, engineering, livability, marketability, comfort, power generation for space heating and cooling, water heating, and powering lights and appliances.

The North House team will have to raise more than \$1 million. Becoming one of the 20 finalists guarantees up to \$100,000 from the U.S.

All three universities have pledged \$15,000 each in seed funding, and \$30,000 has been received from the Canadian Design Research Network to support the bid and start-up activities.

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