

Pan Canadian Team North selected to compete in the 2009 Solar Decathlon

University Researchers and Students Working in Collaboration with Industry Partners expect to deliver Innovation to the Bi-Annual International Competition with their NORTH HOUSE Proposal

WATERLOO, ON, Feb. 11 /CNW/ - Team North, a pan-Canadian team of faculty and students from the University of Waterloo's Faculty of Engineering and School of Architecture, Ryerson University's Faculty of Engineering Architecture and Science and Simon Fraser University's School of Interactive Arts and Technology (SIAT) has been selected to participate in the prestigious the 2009 Solar Decathlon competition. Twenty university teams are chosen to compete to design, build and operate the most attractive and energy efficient entirely solar powered home. TEAM NORTH is the first collaboration of the three Universities on a proposal of this kind. The team's concept for the house, called NORTH HOUSE, is a holistic, responsive and flexible strategy for solar living in the diverse territory and extreme climates of northern regions.

The Solar Decathlon is a competition sponsored by the U.S. Department of Energy (DOE) and the National Renewable Energy Laboratory (NREL). It seeks to foster development and facilitate widespread adoption of solar-powered homes that demonstrate solar technologies in marketable applications, through technology research and development and key partnerships. The 2009 event will be the fourth Solar Decathlon (previous competitions were held in 2007, 2005 and 2002). 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 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 DC where visitors can tour the homes to learn about design and construction techniques. The past three events have attracted more than 250,000 visitors to the National Mall. After the competition in Washington DC, NORTH HOUSE is expected to be on display at the 2010 Winter Olympics in Vancouver. It will then become part of a permanent public display at the Kortright Living City Centre outside of Toronto.

The NORTH HOUSE will engage undergraduate and graduate students working in collaboration with leading faculty members at all three institutions. The project will build upon ongoing innovation in sustainable off grid housing and responsive envelope technology at the UW Faculty of Engineering's School of Architecture, and in photovoltaic thermal solar and integral blind systems within Mechanical and Mechatronics Engineering. It will draw upon work in Net Zero Design and Energy Modeling and Analysis and will provide a focus for the new graduate program in Building Science at Ryerson University's Faculty of Engineering Architecture and Science. New systems of Integrated Interface that deploy mobile and ubiquitous computing utilizing hand-held technologies will be developed with SFU's SIAT team. The prototype house will employ two key strategies developed by the team: "Holistic Solar" - an approach to making buildings and living within them that incorporates the energy and benefits of the sun in all ways possible; and "Haptic Solar" - Making Sustainable Action Tangible.

Rick Haldenby, O'Donovan Director of the University of Waterloo's School of Architecture reflected - "Being in the final of the Solar Decathlon not only gives the opportunity for a team of extremely talented and dedicated Canadians to compete against the best in the world in the field of design, but also provides the impetus to explore a new generation of environmental architecture." UW Architecture graduate student and team member Natalie Jackson added; "This is a fantastic opportunity for students to advance research agendas associated with sustainability while benefiting from the frictions of realizing the project as a built work".

Following the announcement, Dr. Robert Woodbury, Scientific Director of the Canadian Design Research Network (CDRN), one of the team's key institutional partners commented: "Team North brings three special schools to the challenge of a house for Canada's future. Waterloo, SFU and Ryerson together have the expertise needed to inspire imagination by design, to ensure sound engineering and construction and to communicate the ideas of sustainable living to the world. I am equally sure that the house will be extraordinary and that the schools will learn much from each other. This is collaboration at its best."

The key to the innovation, research and development of "Haptic Solar" will be the development of an Adaptive Living Interface that will make sustainability personal and physical by developing ways that people can measure sustainability with their own bodies. The current intention is to develop the interface through the device of the cellular phone. Occupants will be able to interact with the technologies and systems of the home and to assist them in making informed decisions about energy use by providing feedback on the energy state of the home. Interface devices and ambient cues will communicate the house's performance over time, provide integrated controls to all building systems, and living patterns by modeling occupant routines so that the building can adapt its energy use patterns to its use. The phone could become an interactive container of the energy use of the house that will connect the occupant its systems of the house while both at home and away.

This is just one example of vanguard research and technology that the team hopes to develop for the NORTH HOUSE. In order to achieve these goals, and to transport the component-based home to Washington DC, the team will have to raise over \$1,000,000. Acceptance to the highly competitive list of 20 finalists guarantees up to \$100,000 from the DOE. All three universities have pledged \$15,000 each in seed funding, and \$30,000 has been received from the CDRN to support the bid and start-up activities. All 20 teams chosen to enter the 2009 competition are expected to be posted to the Solar Decathlon website (<http://www.solardecathlon.org/>) by the end of this week.

"It's rare that students have the opportunity to be involved in a project of this magnitude - collaborating with institutions across the country, working on the cutting edge of sustainable design and manufacturing, and addressing the changing needs of Canada's northern regions. I'm thrilled!", stated Lauren Barhydt, Master's Candidate at UW Architecture and student team coordinator.

"This will be the fourth Solar Decathlon event run by the DOE, and from our perspective, it demands a response that goes way beyond first principles of sustainability - the project must generate cutting edge research that responds to a significant and very real set of environmental issues, and advances the state of the art with respect to both solar technologies and a beautiful piece of architecture that integrates these systems. Deep thinking at both the conceptual and technical level went into our proposal preparation. Team North has complimentary and committed team members - and we at Waterloo are really looking forward to this interdisciplinary student - faculty collaboration.", added Prof. Geoffrey Thun, Lead Faculty Advisor at UW.

Dr. Michael Collins of Mechanical and Mechatronics Engineering at UW added " Becoming a finalist team is a tremendous success, and an ideal project to test and develop further a range of innovative technologies being developed in Canada".

Dr. Mark Gorgolewski, Associate Professor at Ryerson's Department of Architectural Science said today, "The Solar Decathlon is a tremendous opportunity for us at Ryerson University to participate in a major collaborative project with international exposure. Students at Ryerson including those in the new building science graduate program will have the opportunity to work in interdisciplinary teams and apply their knowledge of detailed analysis tools such as energy modeling, life cycle assessment and building envelope studies to refine the performance of the proposed building. This is also a great opportunity for collaboration between three complementary universities."

Working with its accomplished team of students and researchers paired

with support from key industry partners, Team North expects to deliver innovation and excitement to the Washington Mall in 2009.

For further information: on the project and images of the preliminary design of NORTH HOUSE contact: FACULTY CONTACT, Geoffrey Thun, MUD, B.Arch, BES, BA(Soc), MRAIC, LEED(TM) AP, Assistant Professor University of Waterloo, School of Architecture, Partner, RVTR, North House Faculty Coordinator, V (416) 219-5255, T (416) 987-1231, E studio@velikovthun.com; STUDENT TEAM CONTACT, Lauren Bardhyt, BAS, M.Arch Candidate, University of Waterloo, School of Architecture, North House Student Team Coordinator, E laurenbarhydt@gmail.com; DIRECTOR UW SCHOOL OF ARCHITECTURE, Eric Haldenby, FRAIC, O'Donovan Director, University of Waterloo, School of Architecture, 7 Melville Street South, Cambridge, ON, N1S 2H4, T (519) 888-4567 (84544), E erhalden@uwaterloo.ca

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