

Homes that give back to the grid

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Dr. Alan Fung's research specializes in sustainable and efficient housing, a critical area given that buildings consume 30 percent of the energy used in Canada.

How about a home so green that it can sell electricity back to the utility?

A Ryerson team of students, faculty and alumni are building homes in Toronto that will be able to generate enough electricity on their own that, on occasion, the owners will sell electricity back to the utility provider.

It's just one of the many sustainable housing projects being undertaken by Alan Fung. Dr. Fung is a professor in the Department of Mechanical and Industrial Engineering with a keen research interest in developing net zero energy housing --- buildings that generate as much energy as they use.

Dr. Fung is a member of the Ryerson team that was selected in a nationwide competition by Canada Mortgage and Housing Corporation to design a green housing project with fully integrated energy efficient design. Rather than using experimental technology, the winning designs will be built with currently available technology accessible to any builder. The project is called the Sustainable Urban Initiative and the Ryerson team's work will lead to the construction of three townhomes in Toronto's Annex neighborhood. Each of the 2,500-square-foot units will generate their own solar power when possible and even sell some power back to the utility grid when there is excess.

Dr. Fung believes he is in the right place at the right time: "The push is on for affordable, net-zero energy housing," Dr. Fung says.

Another major project for the researcher involves a team of Ryerson students and faculty collaborating with two other Canadian universities in an international competition to build a solar-powered house. Team North, as they are known, is one of just 20 teams from around the world that have been selected to participate in the U.S. Department of Energy's Solar Decathlon competition in Washington D.C.

Ryerson, along with the University of Waterloo and Simon Fraser University in B.C., are collaborating to design, build and operate an attractive and energy-efficient solar-powered house, to be shown next year on the National Mall in Washington. Labeling themselves Team

North, the scholarly trio's solar-powered construction is expected to also be on display at the 2010 Winter Olympics in Vancouver and will then become part of a permanent public display on the Living City Campus at the Kortright Centre for Conservation, north of Toronto.

Finding energy efficiency in construction is vital because "buildings consume more than 30 percent of all the energy used in Canada," Dr. Fung says.

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