



Everything under one roof at rare's North House

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As the final touches are being put on its new Eco Centre on Blair Road, officials at the rare Charitable Research Reserve cut the ribbon on an entirely different type of learning centre Thursday morning.

"We had no idea when we started that something like this would become part of our organization," said reserve chair Keith Ainsworth during the opening of North House.

The facility stands in stark contrast to the 19th century farmhouse sitting just a few metres away, on rare's 900-acre property on the outskirts of Cambridge.

It is a solar-powered, 800-square-foot bungalow, which sits on a 3,000-square-foot deck, created by students from three universities.

North House was originally built in 2009 by students from the University of Waterloo, Simon Fraser University and Ryerson University to compete in the United States' Department of Energy's solar decathlon, staged in the National Mall in Washington, D.C. The project won awards, but once the competition was complete, North House was packed up and mothballed until a new home could be located.

That home has been found.

"The University of Michigan wanted it, but we're so lucky to have struck a memorandum of understanding with the University of Waterloo so it could come here," said rare's communications manager Patti Leather.

The North House design is ultra modern – a cube clad in solar panels, with large double-paned glass windows on three sides. The windows allow natural light to flood its main room, while a system of exterior louvred blinds connected to a weather station on the roof automatically adjust to control the solar generated heat and glare off the windows.

North House demonstrates how more can be done with less in the future. It makes use of every square inch of space, featuring a bed which drops out of the ceiling, hooks and towel bars that pop out of the walls, multi-purpose furnishings, two sliding glass doors that close to create a shower stall, and storage cupboards tucked into every nook and cranny.

The house is also surrounded by a large cedar deck, which creates a three-season outdoor living space.

The home is heated and cooled by a ground-source heat pump, while three forms of solar panels provide electricity for lighting and its hot water heater. Water is also collected from the roof for its grey water system, reducing the home's filtered water consumption.

Katherine McLeod, rare's director of research and education, said the North House will become a test bed, not only for new technology under development, but also for how people will use it day to day.

"This is just the beginning," she said. "North House will be a living laboratory. We want to see some long-term occupancy so we collect data on human behaviour and how to use space."

North House cost about \$2 million to create and roughly \$400,000 to have it re-built at rare. The Savvas Chamberlain Family Foundation funded part of the project.

"We wanted to get involved because this is introducing kids not only to nature but to new technology," said Savvas Chamberlain.

Lauren Barhydt was one of the architecture students who designed North House.

"My heart is absolutely exploding," she said at the opening.

"I'm overjoyed to see this having another life."

Officials at rare are working to incorporate North House into their programs and hope to have the facility open to the public



Katherine McLeod explains some of the new technology and innovative thinking behind the creation and future use of rare's latest addition – North House.



The 800-square-foot house has just opened at rare's Springbank Farm, off Blair Road on the outskirts of Cambridge.