What if you could help cool or heat your home with a thin, invisible coating on the windows? Local SME eTime Energy’s latest innovation promises to do just that, year-round.

eTime Energy is a company focused on green energy products that provides customers with energy savings in residential, commercial and industrial buildings. eTime’s core product is a transparent water-based window glass thermal coating, called the HPS HeatShield, which can reduce a building’s energy consumption and costs. In the summer months, the technology blocks a large portion of ultraviolet (UV) and infrared (IR) radiation while still letting in light, allowing residents to keep cool while reducing air conditioning (and excess energy) use. The technology is designed for use in commercial, retail and industrial properties as well.

But testing for this product’s energy saving potential during the winter season hadn’t yet been captured. They came to George Brown to show the coating’s impact under winter and summer conditions, capturing the overall data to include in a report to industry. It was a project almost two year in the making.

The green possibilities for a technology like this is significant for the industry—a thin, minimum impact installation to save on energy, without filling the landfill or fabricating new window systems.

“It provides the most cost effective retrofit solution to aging and ineffective windows in lieu of replacement,” says Jim Judge, Marketing and Technical Manager at eTime. “You’re using an environmentally friendly coating that is a mere eight microns thick to resolve a significant problem.”

Testing began in a simulated building envelop on the roof of George Brown’s Casa Loma campus. The research team built a test hut with two identical chambers both 72 cubic feet in size with interchangeable windows to measure the side by side performance for different coated and non-coated window glazes. The huts were equipped with heating and cooling devices to maintain the interior temperature at controlled setpoints. Students were tapped to collect and record the performance measurements, and the project’s complexity required an impressive skill set, spanning many disciplines and programs at the college.

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JIM JUDGE, eTIME ENERGY

“"The project required a wide range of skills that would be difficult to obtain from just one or two students,” says Leo Salemi, faculty member and principal investigator. “I needed students that could build the wooden huts…students that could install sensors and set up a network…and students that could log the raw data and format daily test records for the partner.”

Jean-Yves Watts, a 3rd Year student in Electro-Mechanical Engineering Technology- Building Automation was involved from construction to instruction to data collection. In addition to practical skills, he also learned the importance of communication: “I learned to ask questions when in doubt, and that standardization is key to ensure consistent results.”

But that’s not the only lasting impact this project may have on the students. eTime plans to use the data collected to approach the Ontario Power Authority, an accepted authority on energy management in Ontario, to consider installing new incentives to reduce peak load demand. If successful, then “the students who worked on these three phases will have significantly contributed to reducing the impact of Green House Emissions,” says Judge.