

A CENTURY-OLD WATERLOO, CANADA HOME BECOMES A MODEL OF ENERGY EFFICIENCY



High levels of energy consumption are one of the most pressing issues of today's world. Almost every function of our modern lifestyle is powered by electricity. North Americans are some of the highest consumers of electricity in the world, with data from 2011 showing the US ranking number 9 in the world with 12,924 kWh per capita, and Canada coming in at number 4 with a whopping 16,279 kWh per capita. Today, those numbers might be even higher.

Electricity is an integral and indispensable part of our modern lifestyle. At home, we need electrical gadgets to cook and clean.

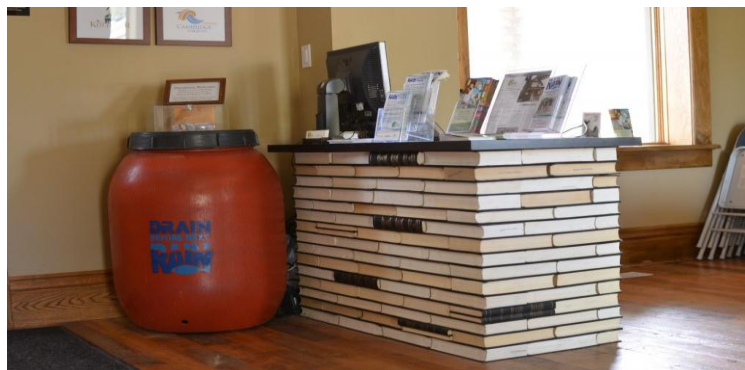
We rely on televisions for entertainment, and computers and phones to communicate and manage our daily lives. Unfortunately, despite the advancement in solar and wind power, most of our electricity is generated through the burning of coal and fossil fuels. This makes it hard to plan for a healthy, sustainable future as these non-renewable resources are being exhausted at a staggering rate.

In the face of mounting evidence of global warming, the public comes to recognize the danger of our over-reliance on fossil fuels. Energy efficient buildings are becoming more popular as individuals, families, and corporations are trying to do their part to reduce energy consumption. While it is great that many new buildings are energy efficient, we must not neglect the existing building stock. There needs to be more awareness that existing buildings can be retrofitted to become more energy efficient.

In Waterloo, there is a 100-year old home that is a model for energy efficiency. This runs counter to the common belief that older homes come with a higher gas bill as it consumes more energy to heat or cool the home. The REEP house in Waterloo puts this misconception to rest as attested by huge cost savings after going through renovations that showcase energy and water innovations.



The retrofits have reduced the energy used for water and space heating by 86% and cut carbon emissions by 54%. This is represented by a cost-savings of 85% on the annual hydro bill. This is done through improvements in various aspects of the house, like water management, water heating, heating and air conditioning, insulation, lighting, while also using green materials in the renovation. For example, for heating the building, the REEP house uses a solar thermal system and a ground source heat pump with forced air distribution. Furniture in the house is also up cycled from old books, old blackboards, or reclaimed wood from other buildings.



The REEP house also showcases the importance of insulation. The two factors most essential to any energy retrofit is to insulate to a very high level (beyond building code) and seal the house well. Succeeding in these two areas will turn nearly any home into a “near net zero” energy home. Proper insulation is very important for energy conservation. If just 1% of all homes in North America had code-level insulation, the energy saved would be equivalent to the energy saved by not producing thirty-six billion plastic bottles a year.

The REEP house is not only a show-house for visitors, but also a one-stop centre for homeowners thinking about retrofitting their own homes. Being able to see how the energy-efficient technologies work in a real house makes it easier for homeowners to envision how to adapt their own homes to be more green and sustainable.

Source: <http://www.globalsiteplans.com/environmental-design/energy-environmental-design/a-century-old-waterloo-canada-home-becomes-a-model-of-energy-efficiency/>