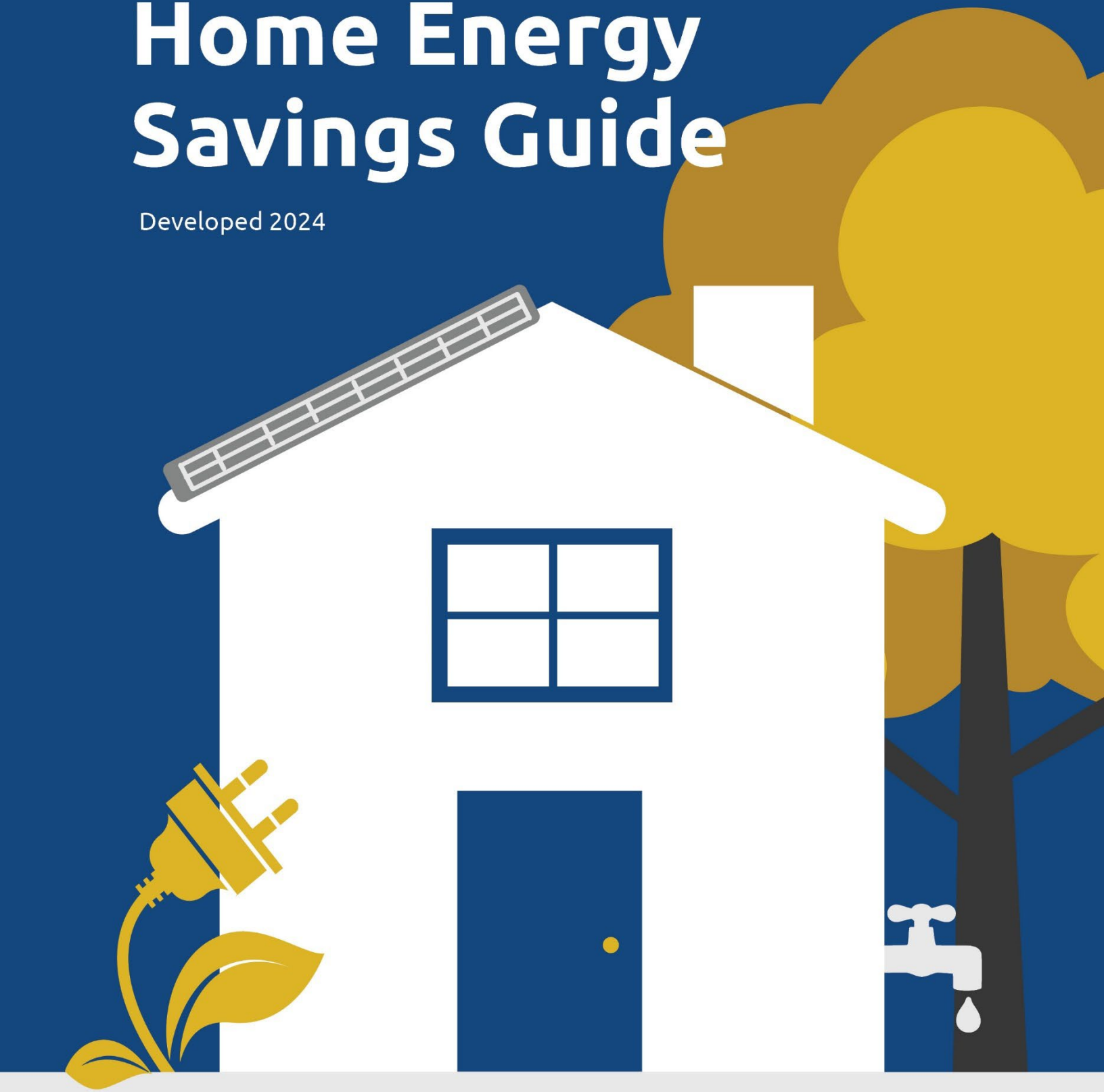
The Corporation of the County of Huron

Home Energy Savings Guide

Developed 2024



County of Huron
www.HuronCounty.ca

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We acknowledge that the land we stand upon today is the traditional territories of the Anishinaabe, Haudenosaunee, and Neutral peoples and is connected to the Dish with One Spoon wampum, under which multiple nations agreed to care for the land and its resources by the Great Lakes in peace.

We also acknowledge the Upper Canada Treaties signed in regards to this land, which include Treaty #29 and Treaty #45 ½.

We recognize First Peoples' continued stewardship of the land and water as well as the historical and ongoing injustices they face in Canada.
We accept responsibility as a public institution and as treaty people to renew relationships with First Nation, Métis, and Inuit people through reconciliation, community service, and respect.

How to read this document

This guide has been designed to provide options and opportunities for homeowners to increase the energy and water conservation of their home. There are several visual components that will help inform homeowners throughout the guide and provide valuable information.

Here are some of the visual components you will notice throughout the guide:

Definition

Definitions of new and key terms will be provided throughout this guide to assist with understanding key concepts that relate to energy efficient options for homeowners.

Interesting Statistics

Statistics that relate to energy efficiency in Canada will be provided throughout the guide to demonstrate the importance of improving home energy efficiency for social, health, financial and environmental benefits to homeowners and their community.

Homeowner Tips are provided throughout this guide to assist with understanding the many options available to create energy efficient buildings.

Please be advised that this document is solely a guide and further research should be conducted by homeowners interested in pursuing energy efficiency changes in their residence.

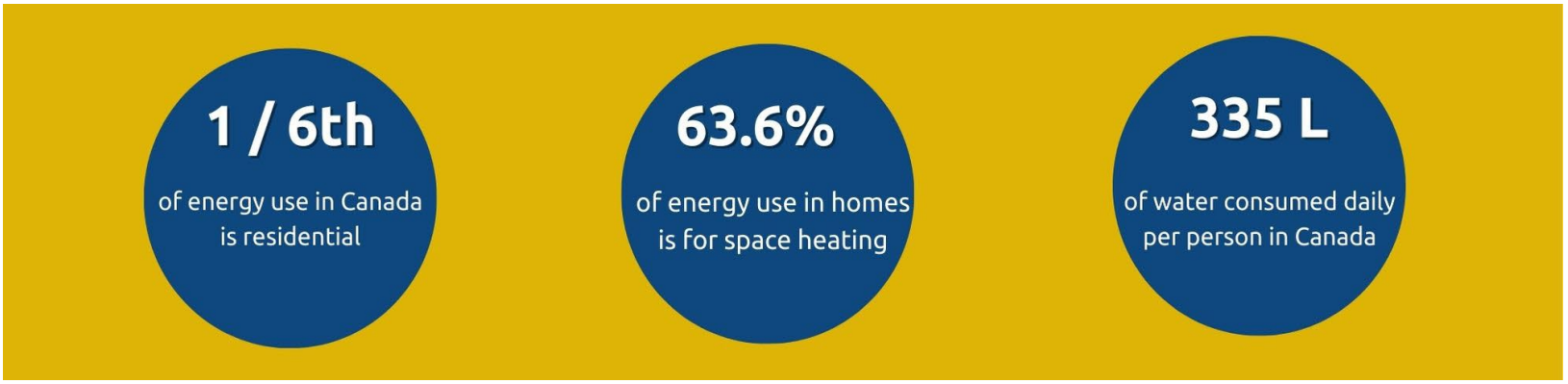
Introduction

The average household in Ontario uses about 9,000 kilowatt hours of electricity per year, which creates about 0.36 tons of CO_2 emissions per year per household.

The homes we live in are significant consumers of energy, with residential energy use contributing to approximately 16.5% of Canada's total energy use, and heating specifically using five times more electricity than all other uses in a home. Not only are buildings significant consumers of energy, but they also create waste, air pollution, and greenhouse gas emissions. Creating more efficient buildings will help the community reduce energy use, mitigate greenhouse gas emissions, and create buildings that are future-ready for the impacts of climate change. The creation of energy efficient buildings can also lead to cost savings and provide a healthier and more comfortable environment for homeowners.

With increased hot days projected for Huron County and more extreme weather events, such as extreme wind, ice and snowstorms, it is important that residential homes across the County are climate resilient and cost effective for residents.

Current homes in the County will experience different weather patterns than have been experienced in the past. These extreme weather conditions have the potential to negatively impact the health and well-being of County residents and the condition of homes resulting in significant economic losses. Enhancing the resilience of homes to climate impacts will protect the residents and their health and mitigate economic losses.



Purpose

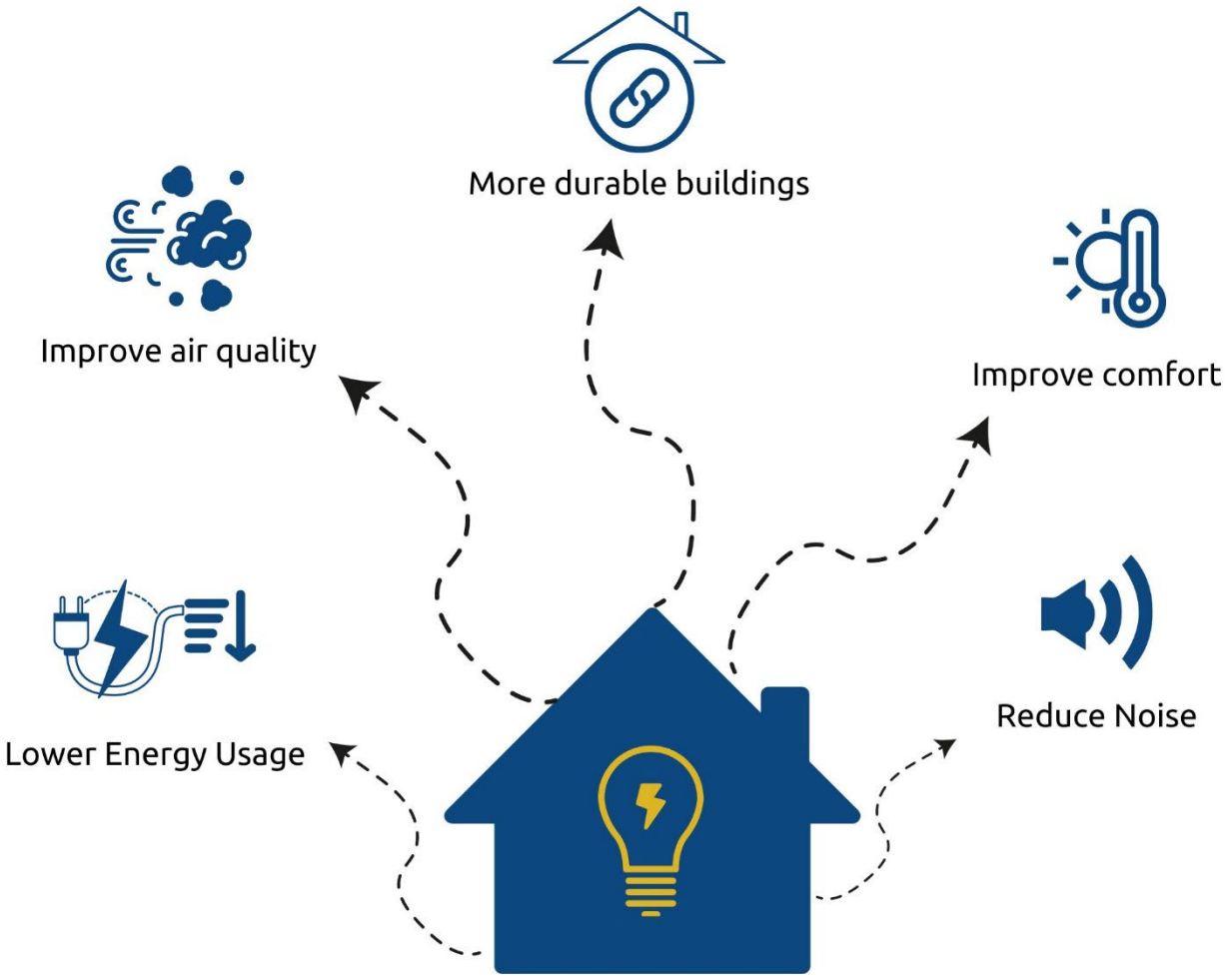
This resource provides homeowners in Huron County with a comprehensive list of energy efficiency incentives for their next renovation or home retrofit project, along with a list of energy efficient alternatives to traditional heating, cooling, electricity, and water uses for your home to be climate ready. This guide is intended to be a reference tool for Huron County homeowners to learn about energy efficient upgrades and their benefits to better prepare your home for climate impacts.

It is important to note that each home and homeowner is unique, and thus each journey towards an energy efficient home presents unique conditions. This guide provides recommended best practices, but it is likely that each method would need to be adapted to each specific home and project.

Building resilience: The ability of a building and its parts to withstand current and future climate (including wildfires, extreme wind, extreme precipitation and extreme temperature) and preserve the intended level of performance at the time of construction over the proposed design life of the building.

Co-Benefits of Creating More Resilient Homes

Creating a resilient home means more than improving the environmental performance of the structure or reducing your utility bills. There are several reasons homeowners are improving the energy performance of their home. These reasons include improving the interior and exterior air quality, reducing outside noise, regulating temperature all year round and creating a more durable structure that can withstand the warm and cold months in Ontario.



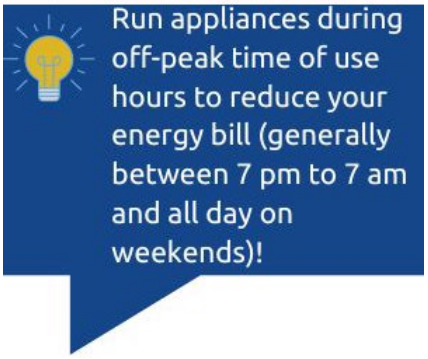
Simple Solutions to Reduce Energy

All rooms:

- Look for Energy Star rated appliances when replacing home appliances
- Switch all lighting fixtures to LED lights and turn off lights when not in use
- Program your thermostat to only heat/cool your house when you are home to save on energy use
- Use your window coverings to keep direct rays of light from overheating the room in the summer months
- Ensure all windows and doorways are properly insulated and sealed to keep heat in or out of the house depending on the season
- Keep air flowing by not obstructing vents or return air grilles with furniture
- Install insulated outlet plate sealers to reduce air flow

Kitchen:

- Use the microwave to reheat your food as it is the most efficient
- Plan ahead and defrost food in the fridge to avoid using water



Bathroom:

- Install a low-flow shower head to reduce hot water usage
- Install a timer switch for your bathroom fan

Laundry Room:

- Run your washing machine with a full load to increase efficiency
- Wash clothes in cold or warm water to save energy on heating water
- Clean the lint trap on your dryer after every load to increase air flow
- Air dry your clothes when possible

Electronics:

- Enable low power settings on electronics to help your battery last longer
- Unplug electronics and devices when not in use or get an advanced power bar that can cut electricity to certain devices when not in use

Labels that Signal Energy Savings

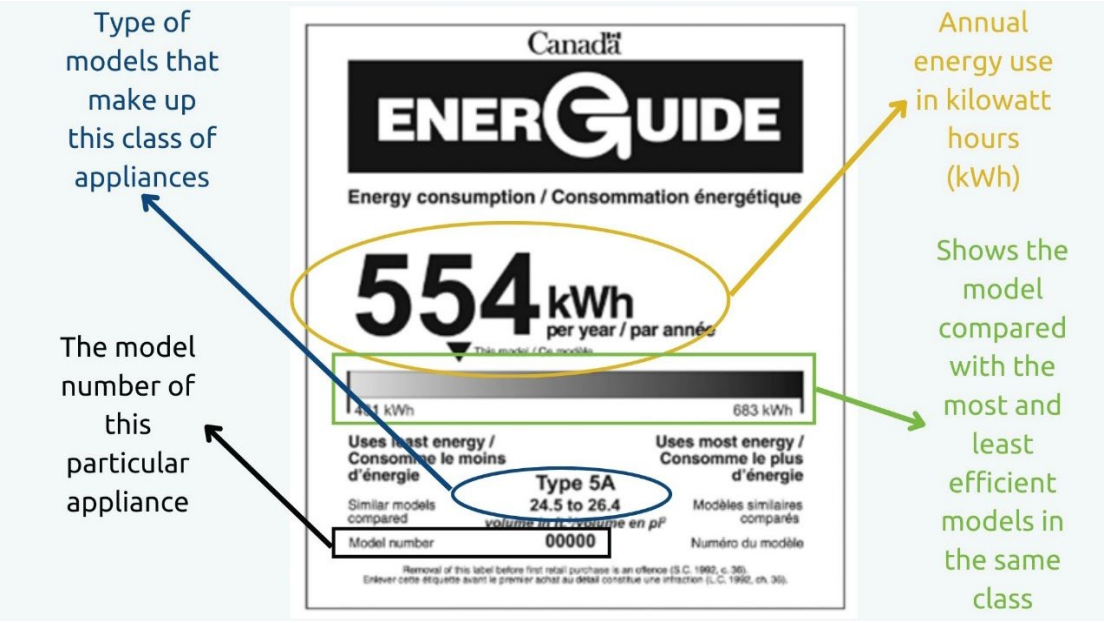
EnerGuide

The EnerGuide is a performance rating system for products that use energy and is overseen by the Government of Canada. You may come across the EnerGuide label when shopping for new appliances in your home (i.e., washing machine, ovens, etc.).

The EnerGuide label tells customers that the product has been verified to meet or exceed the minimum energy performance standards set out by the Government of Canada's Energy Efficiency Regulations. Using average Canadian conditions, the products are tested to see how much energy they use. This label shows us how much energy a product uses in comparison to similar products. The lower the annual energy use (kWh), the more efficient the appliance model is.

EnerGuide Label

This label will be a tag on an appliance or a graphic in product documents. Here is an example of an EnerGuide label including what each value means.



To find the most efficient model for your needs, use Canada's search tool here.

Energy Star

The Energy Star symbol is internationally recognized to represent energy efficient products for homeowners. These symbols help consumers recognize and access energy efficient products when shopping.

How do products become Energy Star certified?

Similar to EnerGuide, an independent third-party tests and certifies products to ensure they meet energy efficiency standards.

In addition to the regular Energy Star certification, each year there is an "Energy Star Most Efficient" which includes products that can save consumers money and reduce their impact on the environment.

To see this year's "most efficient", visit this page to click on the category you are interested in.

Where will the Energy Star symbol be found?

The symbol can be found in blue or black and will appear on the product, on the packaging, as part of the EnerGuide label or in promotional material.

To find out which products are energy star certified, use the Natural Resources Canada list here.

Home Energy Audits

Homeowners within Huron County have access to thousands of dollars in rebates that will make it easier and more affordable to improve your home's energy efficiency and reduce utility bill costs. Most energy rebates require an Energy Audit prior to and after the installation of a retrofit to ensure that your home qualifies for the rebate and that the retrofit meets the funding requirements.

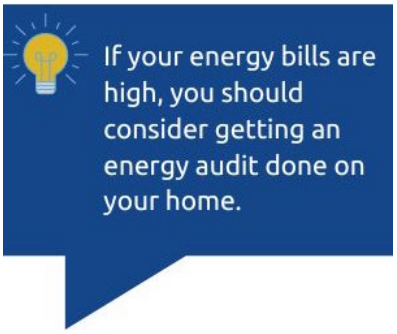
What can you expect from an Energy Audit?

An energy auditor will measure your home and inspect all heating and cooling equipment; inspect the amount of existing insulation in your attic, walls or basement; test for air leaks; and conduct additional tests if necessary. The initial audit can take up to 2 hours and a follow up audit will likely take less time. The audit will provide an energy rating for your home, information on how your home currently utilizes energy, and identifies upgrades that will improve your home's energy efficiency.

What can you do to prepare?

A legal homeowner must be present for the audit with a recent copy of the home's gas bill and property tax bill. The auditor may require the following actions to be completed before the audit:

- Close and latch windows and close all doors.
- Clear areas around boilers, furnaces, water heaters, crawl spaces, attics, or basements for easy access.
- Avoid the use of a wood-burning fireplace for 24 hours prior to the audit and remove ashes.
- Make note of any warm or cool spots in your home

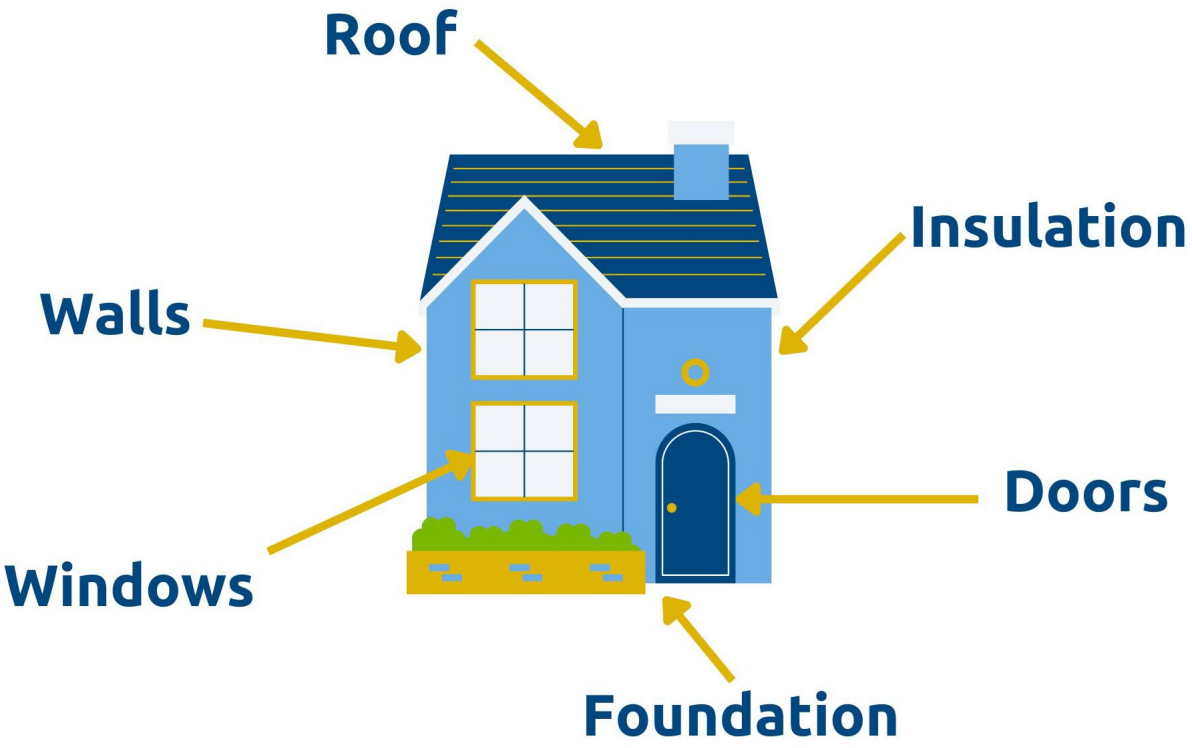


Energy Audit: a top to bottom home inspection that calculates how much energy your home uses by searching from the basement to the attic for air leaks, drafts, gaps in and around doors and windows, poor insulation, and more. Energy Audits can also be called 'Home Evaluations' or 'Energy Assessments'.

Home Efficiency Options

Building Envelope

The **Building Envelope** includes the components of a home that separate the indoors from the outdoors. This includes the roof, foundation, walls, insulation, windows and doors of a home. It is an important part of creating a climate resilient home. Buildings with a strong and tight envelope maintain more consistent indoor temperatures, reduce energy bills, provide protection from weather, and reduce noise penetration. Considering durable materials that are used during the construction or renovations of your home's building envelope (i.e., wood, flooring, ceilings, products) can increase the lifespan of your home.



Roofing

Roofs are part of the building envelope and greatly impact the energy efficiency of a home. Using materials that are durable, and are able to withstand extreme weather conditions can create better building resilience and improve energy efficiency. Materials that can be recycled at the end of their life span (i.e. metal) are even better!

Type of Roof	Shingles	Metal	Cool Roof	Green Roof
Service Life	30 – 50 years	40 – 70 years	40 – 70 years	50 – 75 years
Temperature Control	Absorbs solar energy	Absorbs less solar energy	Absorbs little solar energy	Utilizes solar energy
Energy Efficiency	Neutral	Great	Great	Good
Weather Condition Resilience	• Withstands normal weather conditions • Snow accumulation is common	• Seals out water • Withstands high winds • Prevents snow accumulation	• Seals out water • Withstand high winds • Prevents snow accumulation	• Absorbs precipitation providing stormwater control
Cost*	**$**	**$$**	**$$**	**$$$**

*For an accurate roof cost, contact a professional for an estimate

Green Roof: an extension of the existing roof structure which involves high quality waterproofing, a lightweight soil layer and plants.

Cool Roof: typically a light colour roof that reflects a high amount of sunlight and cools itself by emitting any heat that was absorbed.

Insulation

Air sealing and insulation retrofits in existing homes are a reliable method to improve resiliency, reduce energy consumption, and thus reduce energy bills. If a building allows a lot of air leakage or is poorly insulated, heating and cooling appliances will not be performing at peak efficiency.

Comparison between common types of Insulation

Type of Insulation	Fiberglass Insulation	Cellulose Insulation	Spray Foam Insulation
R-value (per inch of thickness)	2.2 – 4.3	3.1 – 3.7	3.5 – 6.5
Lifespan	20 to 25 years	25 to 35 years	80 to 100 years
Reduction of energy bills (%)	20%	25%	40%
Payback time*	3 to 4 years	3 to 4 years	3 to 4 years
Price**	$	$$	$$$
Considerations	• Made of recycled glass and sand • Fireproof • Energy Efficient • Prone to deterioration over time	• Made of post-consumer recycled products • Insect repellent • Can sag or settle if not properly installed	• Deters moisture • Creates air-tight seal • Seals out insects • Easy to install

*The amount of time for energy savings to balance initial costs.

**For an accurate home insulation price, contact a professional for an estimate.

R-Value: communicates how well insulation or surfaces can keep heat from leaving or entering your home. Insulation R-values vary based on type, thickness and density of the insulation material. Typically, a high R-value means better climate control and better energy efficiency for your home.

Windows and Doors

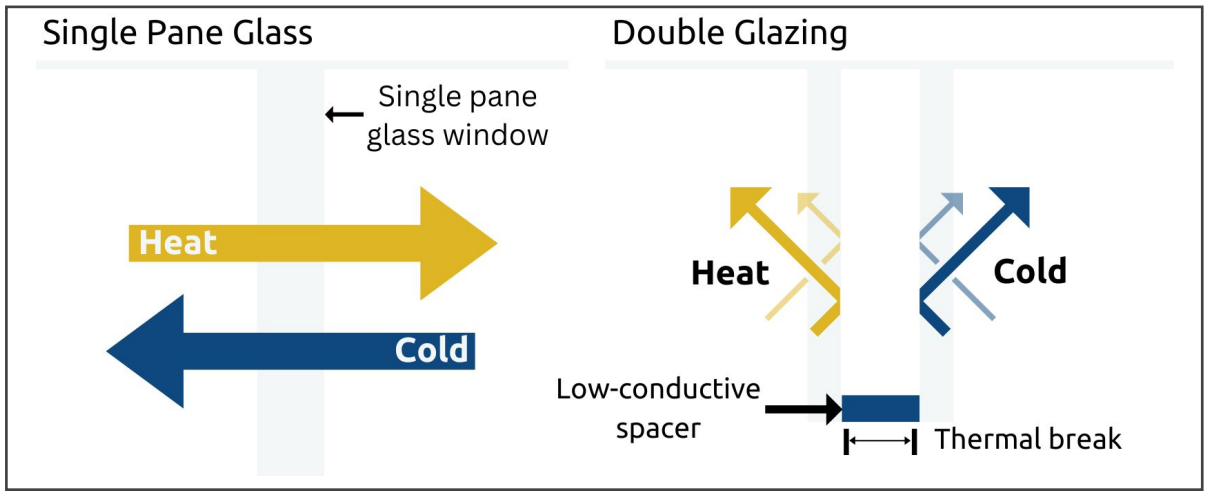
While large windows that let in sunlight can be a blessing, it is important to ensure that your windows and doors are not costing you money through heat loss or gain.

Here are some things to consider if you want to be more efficient when replacing your windows and doors:

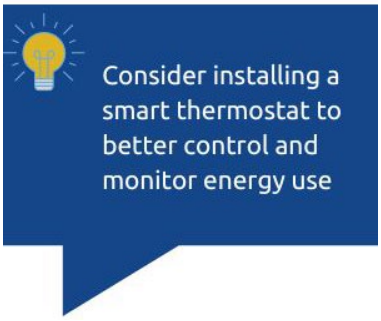
- You want to lower your solar heat gain coefficient by using double or triple-pane or glazed glass in your windows and doors
- Special coatings and insulated frames can make your windows more comfortable to sit near and lower condensation levels
- Triple-pane windows provide a better noise barrier, insulation and increase energy savings through less heat loss and gain
- Ensure the seal around your windows and doors are tight to avoid drafts

Look for ENERGY STAR certified windows and doors to improve energy efficiency by up to 20%.

Solar heat gain coefficient: the amount of solar radiation that enters your home through or is absorbed by your windows or doors. This value can range from 0 to 1 with a value of 0 meaning that the least amount of solar heat will enter your home (beneficial in warm climates) and 1 meaning the maximum amount of solar heat will enter your home (beneficial in cold climates).



Heating and Cooling Systems



Heating and cooling your home can require large amounts of energy. In Canada, 63.6% of residential energy bills are from space heating alone. It is important to know what options are available for heating and cooling your home, and to consider what type of fuel you want to be using for these systems.

Pros	Cons
Forced – Air Furnace	
✓ Requires less maintenance ✓ Can combine cooling and heating uses with the same duct work	× Potential for fire risk × Can carry allergens throughout the house × Regularly change filter for peak performance
Boilers/Radiators/Baseboard Heaters	
✓ Heat is distributed evenly throughout the house ✓ Does not dry out the air ✓ No filter replacements	× Potential to leak water × Requires a separate house cooling system
Heat Pump	
✓ Does not burn fossil fuels ✓ No duct work required ✓ Energy-efficient and cost-effective to operate	× High upfront installation cost × Potential for inefficiencies in extreme cold temperatures
Wood Heater	
✓ Cost-effective fuel source that is readily available depending on where you live	× Can be difficult for heat to move throughout the house evenly × Potential for fire risk
Geothermal Heating	
✓ Does not burn fossil fuels ✓ No duct work required	× High upfront installation cost × May require a larger property

Understanding the feasibility of switching fuel sources along with the initial cost of installation, the long-term maintenance costs and fuel costs can help inform decisions.

Exterior

1. Plant native trees to shade more of your property from the heat of the day.
2. Naturalize a portion of your lawn with native wildflowers to increase stormwater control and pollinator habitat.
3. Use permeable pavement as your driveway or walkway for water infiltration.
4. Consider installing outdoor motion sensor light fixtures that minimize light pollution and promote healthy and safe natural environments.
5. Use light colours or reflective paving materials to increase the solar reflectance of the property.
6. Consider the installation of solar panels or ensure that your home can accommodate connections to solar panels in the future.
7. Rain barrels can be installed to collect and repurpose rainwater for outdoor uses such as lawn and garden watering or washing vehicles to reduce water consumption.

Water Conservation

Toilets: Replace or Adapt?

Replace: When looking for a replacement, search for a low-flow option and reduce your water usage!

An older model toilet can use up to 20 litres of water per flush but there are now low-flow options that use 4.8 to 6 litres per flush. Additionally, there are dual flush options with flush rates of 3.8/6.0 litres or 4.1/6.0 litres per flush.

Adapt: Reducing water consumption is possible without replacing your toilet. There are several devices that can be installed to retain or displace water in the tank of the toilet which will reduce the amount used each flush.

These devices are typically low cost and easy to install yourself and can include:

- Toilet Dam
- Displacement Bag (Toilet Tank Bag)
- Replacement of Flapper Valve
- Fill Cycle Diverter

Shower and Faucet Opportunities:

- **Purchase a flow optimizing shower head** to reducing water use without sacrificing water pressure.
- **Time your shower**: be mindful of how long your shower is or purchase a shower head that includes a timer or smart controls.
- **Install aerators on faucets**: they mix air with water, reducing the flow rate without compromising water pressure.

Huron County Case Study - Bennett Street Triplex

The newly constructed affordable housing units within the Bennett Street Triplexes in Goderich were designed and constructed to prioritize energy efficiency, climate resiliency and sustainability. The following design choices will provide maximum energy efficiency and durability throughout the life of the building:

- All windows and doors are triple-pane to reduce heat loss and gain.
- Fiberglass doors and windows were used as fiberglass is stronger than vinyl, moisture resistant, can better withstand extreme weather conditions and is recyclable at the end of its life.
- Thicker exterior walls were constructed to increase insulation and the attic insulation is twice the minimum set by the Ontario building code to minimize heat gain and loss.
- A metal roof was used as it better reflects the sun's rays and will last a minimum of 40 years and is 100% recyclable at the end of its life.
- All heating and cooling within the building will be done by electric heat pumps.

Funding Opportunities

Please be advised that this list of rebates is not exhaustive. Please visit the appropriate webpage for each rebate for the most up to date information on the eligibility criteria and rebate amount.

Name	Company	Eligibility Criteria	Eligibility Restrictions
Canada Greener Homes Loan	Natural Resource Canada	See Website.	You must apply to the Canada Greener Homes Grant first, before applying for the loan.
***my*Energy Rewards**	Hydro One	See Website.	Only applicable for Hydro One customers.
Home Winterproofing Program	Enbridge Gas	See Website.	Household Income
Oil to Heat Pump Affordability Program	Natural Resource Canada	See Website.	Household Income

See the document labelled Appendix 1 for more details on eligibility requirements, and available efficiency measures with each program.

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