

Tools for Community Engagement

CE13-04E



Westmount EcoSquad
Sustainability Guidebook

2013

The EcoSquad is a project of:



Westmount Healthy City Project



Acknowledgements

We would like to extend our gratitude to the following partners who have helped make this guide a reality:

- Ecosquad Initiative - Municipal Westmount Association
- Making Megaprojects Work for Communities - Community University Research Alliance (CURA)
- Hydro Westmount

Making Megaprojects Work for Communities is supported by the Social Science and Humanities Research Council - Community University Research Alliance (SSHRC-CURA) grant no. 833-2007-1009. awarded to principal investigator Lisa Bornstein.

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Cite as:

Nevajda, Milan and Cutts, Adam. (2013). "Reducing your Environmental Footprint: Opportunities for Owners - The Guide." Tools for Community Engagement CE13-04E. Montréal: CURA Making Megaprojects Work for Communities - Mégaprojets au service des communautés.

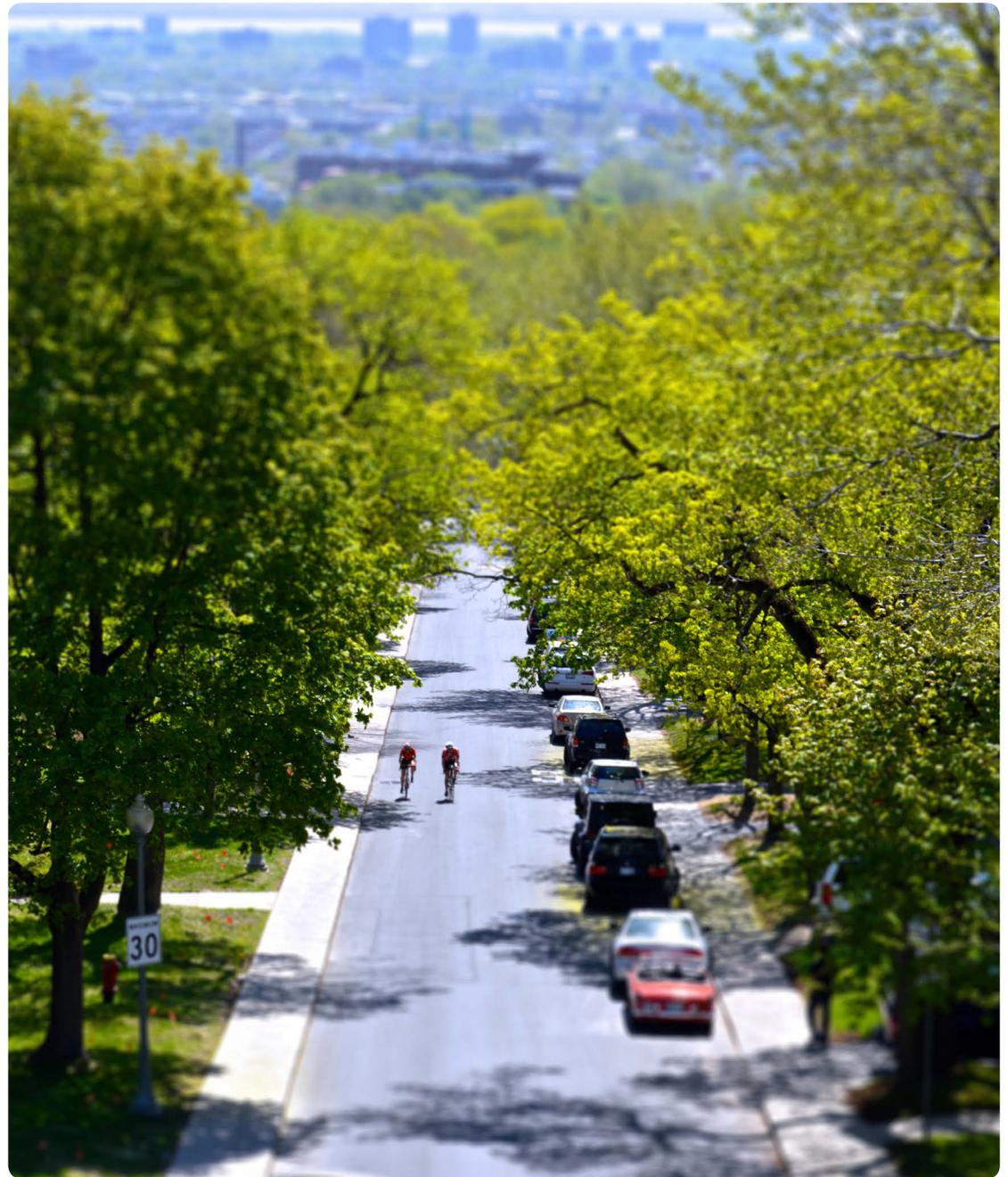
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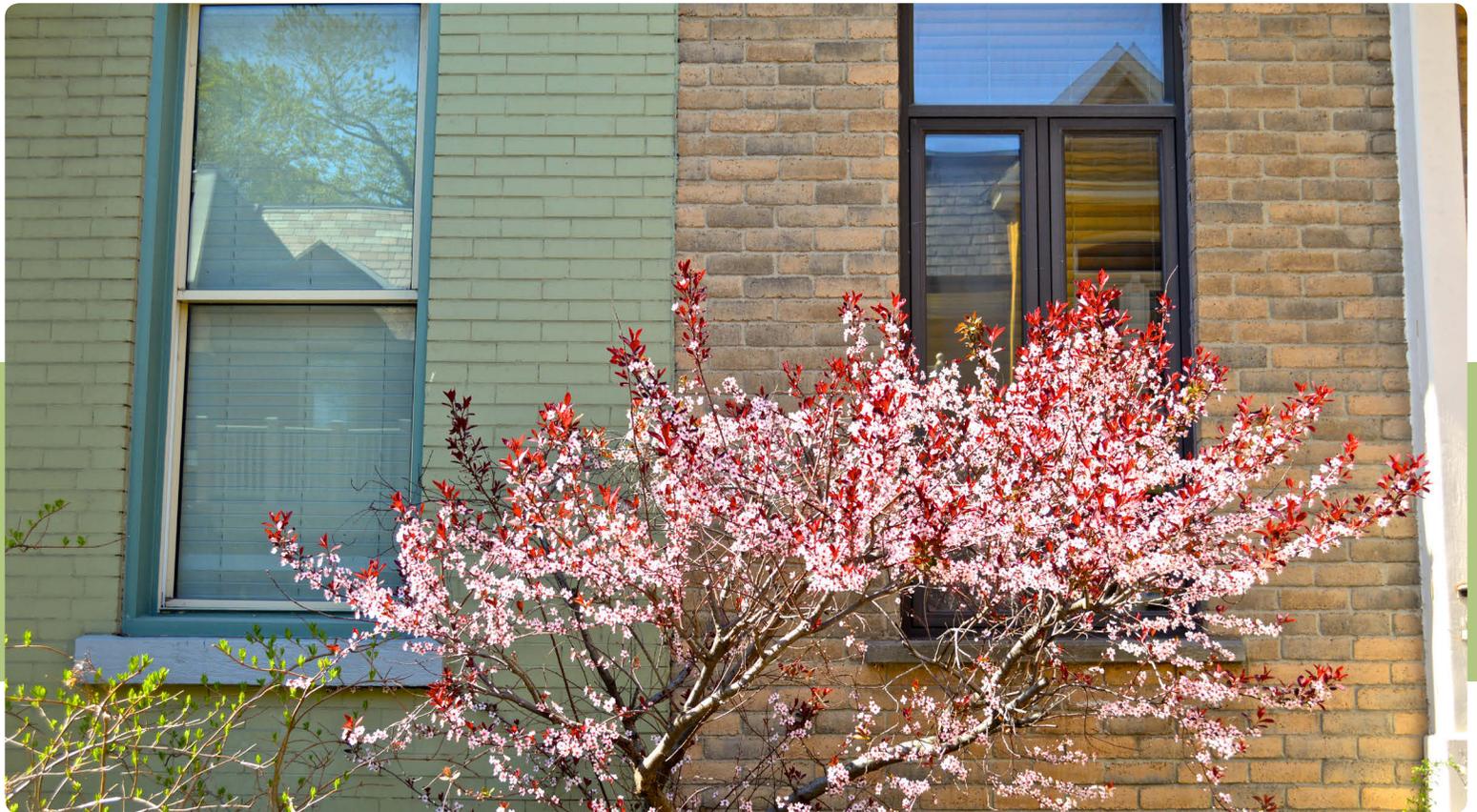
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What. Why. How.

Introduction



Westmount EcoSquad

The People. The Mission.

Westmount residents have worked hard to do their part for the environment. From individual leadership through to small and large scale intervention in the home and numerous environmental community events, Westmount has demonstrated a dedication to the human and natural environment.

There is still much to do: Westmount, with lots of unrenovated heritage houses, many of which use oil for heating, has one of the highest per-capita carbon emissions of any community in Canada.

To respond to the sustainability challenge and opportunity Westmount Municipal Association, in collaboration with McGill University School of Urban Planning (CURA project), HydroWestmount, the City of Westmount and the Healthy Cities Project (HCP), has created the Westmount EcoSquad. The EcoSquad is a growing network of committed and knowledgeable Westmounters already implementing small and medium-scale changes in their homes.

The group helps homeowners, tenants, and landlords learn precisely how sustainability measures improve our ecological footprint, understand the benefits involved, and uncover the potential financial costs and savings.

Our mission:

to raise awareness of the many options that are available to make Westmount more sustainable and to guide homeowners, renters, and landlords in taking action.



Westmount EcoSquad

The People. The Mission.

To achieve our mission, the EcoSquad is:

- » Hosting peer-to-peer learning events in your neighbourhood
- » Offering free home energy audits
- » Engaging with key partners to provide new resources to make it easier for Westmounters to be more sustainable

We have also developed this handy guide to provide Westmounters with a simple, easy-to-use repository of all relevant information to simplify your efforts toward a more sustainable future for Westmount.

The Westmount EcoSquad Sustainability Guide

- » Lists sustainability improvements that homeowners, renters, and landlords can easily implement
- » Identifies financial support for your projects
- » Clarifies administrative processes

This guide will grow over time as we build momentum toward an environmentally sustainable Westmount.







A Word on Sustainability

Everyone has a part to play
Everyone can contribute

Thinking about sustainability in Westmount

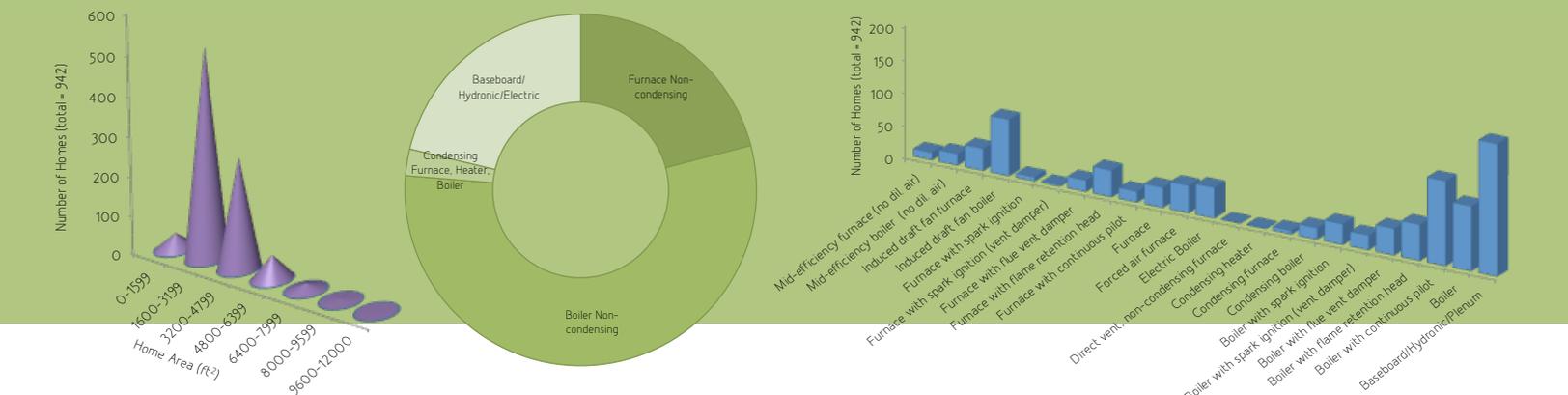
There are many reasons to be sustainable in Westmount. We all have a role to play in addressing climate change, and there are many solutions (and resources available) to help you make a difference. Westmounters have already taken the lead - these are your local sustainability champions. They know that reducing your environmental footprint is not just about climate change, the solutions and opportunities outlined in this Guidebook can improve the comfort of your home, save you money, contribute to your well-being, and benefit your community.

Climate Change

The Intergovernmental Panel on Climate Change (IPCC) is the best source of information for the latest in environmental science. The Panel has found that Québec will face significant climate and environmental changes in the future. In response, cities in the Montréal region have committed to make a difference. Sustainability is a principal concern of the newest Montréal regional plan, the Plan Métropolitain d'Aménagement et de Développement (PMAD).

Westmount

Westmount faces particular sustainability challenges. Our heritage buildings add to neighbourhood charm but they often consume a lot of energy. Westmount is also built out, but is relatively less dense than other urban neighbourhoods. Being on the slope of Mont Royal makes pedestrian and cycling accessibility more difficult and tends to amplify stormwater surge risks. Westmount has enormous potential. Being close to downtown makes sustainable forms of transportation a real option, and community champions have already made strides to reduce energy and water in their homes and gardens.



RenoClimat Study: Residential Heating in Westmount, CDN-NDG, & Sud-Ouest

Sustainability Leaders

Vauban

Freiburg, Germany

A former military compound, Vauban is among the world's most sustainable communities. One of the primary goals was to reduce transportation related emissions, this was achieved through:

- » Energy incentive programs
- » Excellent transit services
- » A car-sharing system
- » 500km of cycling paths and 5,000 bicycle parking spaces.

40% of residents live without a car, and are rewarded with free access to the local streetcar and cheaper housing.



Source: DAC&Cities
www.vauban.de/info/abstract.html

City of Hayward

California, USA

Hayward has taken major steps since 2005 to build a sustainable city. The city has a number of programs and resources available to its citizens, including:

- » Energy incentive programs
- » Aggressive efficiency ordinances
- » Informational resources, and others

These measures are designed to help Hayward meet its aggressive emissions reduction targets below the 2005 baseline by 2020 and 2050:

- » 12.5% by 2020
- » 82.5% by 2050



Source: City of Hayward, Climate Action Plan
www.hayward-ca.gov/green-hayward

ÉcoTerra

Eastman, Québec

This 141 m² home is grid-connected that produces as much energy as it consumes annually (a net-zero energy home), but also features a healthy indoor environment, low environmental impact, resource conservation, and is affordable.

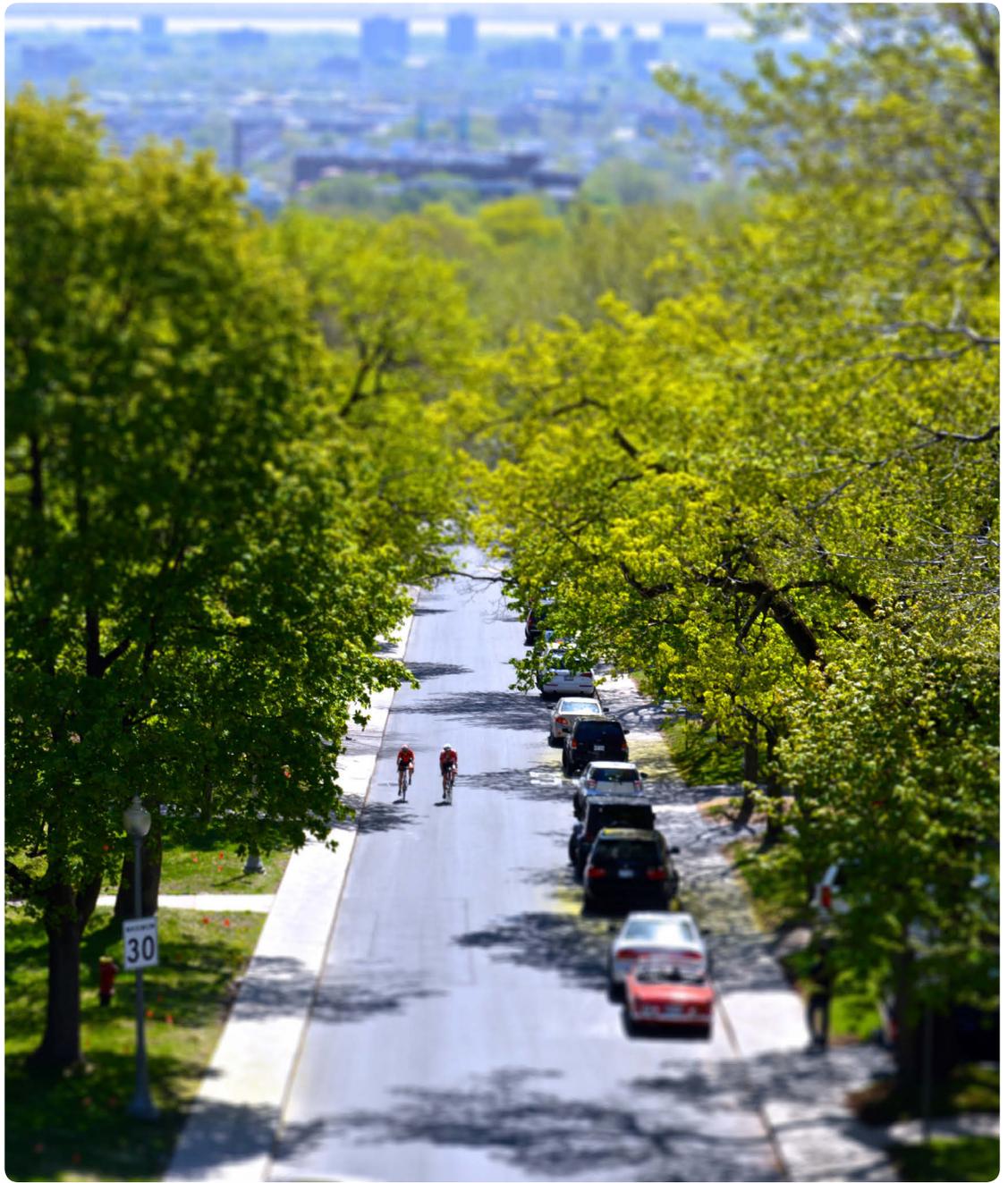
Design Features:

- » Predicted net zero energy use
- » Reduced CO² emissions
- » Materials recycling and waste reduction
- » Prefabrication reduces environmental impacts
- » Maximized solar exposure
- » Uniform air temperature and quality



Source: CMHC
www.cmhc-schl.gc.ca/odpub/pdf/65594.pdf





Using this Guide

What's Inside



What's Inside



[1] Solutions and tools for owners, renters and landlords

Westmount is home to a diverse population, and we all have different options and opportunities to make Westmount a sustainable community. The guidebook is designed to offer tools, tips, and options for all of Westmount residents

[2] Summary of benefits

Sustainability measures provide a range of benefits to you and your community. Each of our recommendations is labelled with the added benefit that you receive beyond improving the environment. The next section explains each the benefits that are available

[3] Grants and other sources of funding

Federal, provincial, local, and private sources of funding exist to make it easier and more cost effective to invest in sustainability. We summarize all the resources available to you and how to capitalize on them

[4] Administrative considerations

Many sustainability measures require administrative processing and handling. This is an important step to ensure the quality and suitability of the work being done. We help you navigating these processes to make it easy.

[5] Next steps

We connect you to other resources to help make the sustainable option an easy one. The EcoSquad also manages a network of sustainability champions - your neighbours - willing to guide others as a united Westmount for the environment.



Sustainability Benefits

Understanding the Symbology



Comfort and Quality of Life

These actions or investments improve the environment while increasing the comfort of your home, giving you piece of mind, or adding to neighbourhood amenities. Rest easy when you invest in these sustainability measures.



Cost Savings

Making sustainable choices can reduce your energy bill, but other costs savings are also available, such as transportation and fuel expenses, household maintenance, and others. Look for this symbol on initiatives if you stand to save money - the number tells you how long the intervention may take to pay off.



Health and Safety

These sustainability projects can improve your health and reduce safety risks for you, your loved ones, and neighbours. Look for this symbol to know that your commitment is making Westmount a healthier, safer, *and* greener community.



Sustainability Benefits

Understanding the Symbology



Aesthetic or Community Improvement

These measures are visible and can add to aesthetic appeal. Others contribute to the neighbourhood, by adding greenspace, limiting heat island effects, reducing nuisances, and more.



Ecology

These improvements contribute directly to improving the natural environment. They may provide biodiversity oases, reduce risks to wildlife, or remove toxins from the environment.

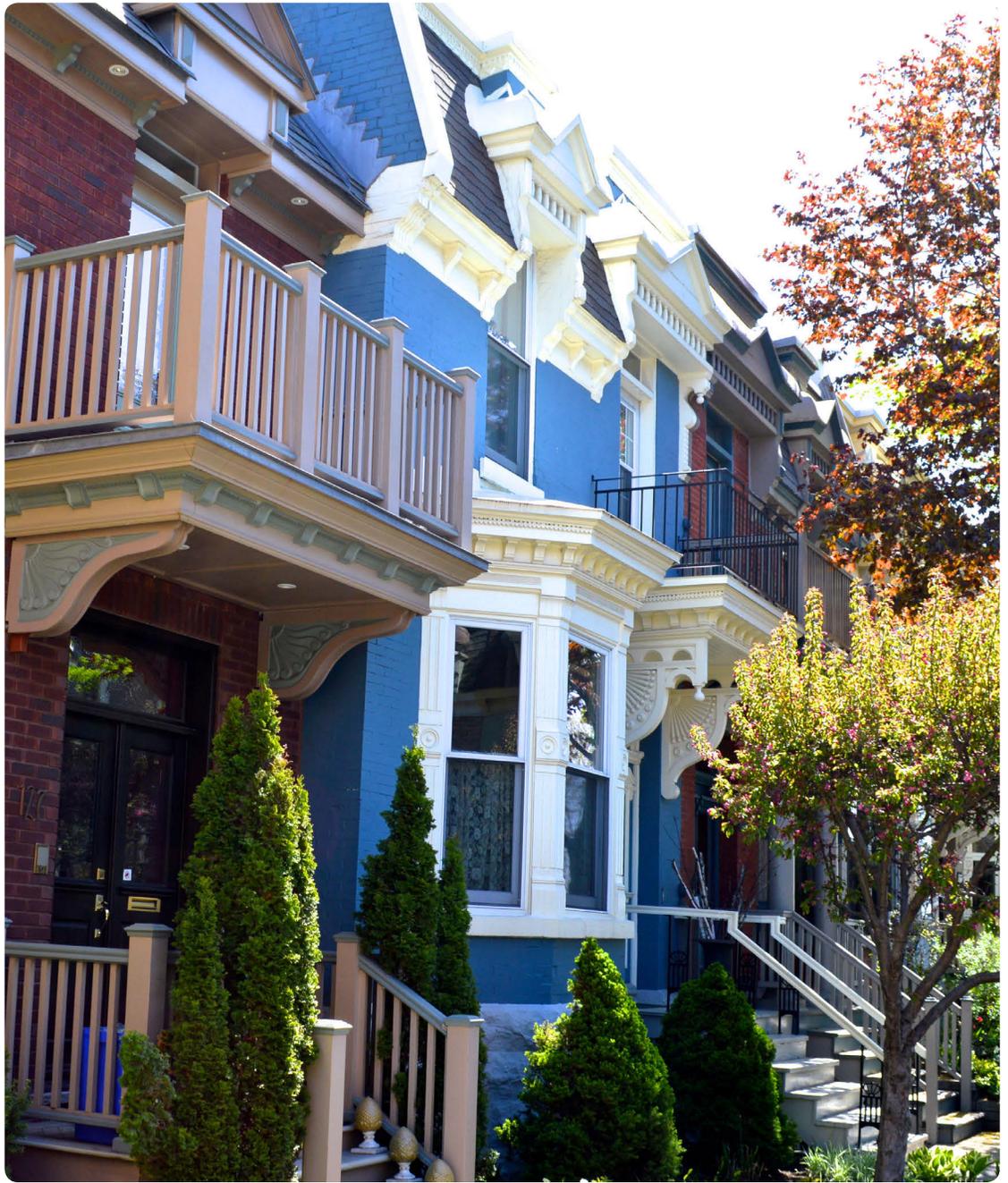


Resiliency

These actions help reduce your dependence on fossil fuels and put you on the path to self-sufficiency. These are major, long-term contributions to sustainability in Westmount.







Opportunities for Owners

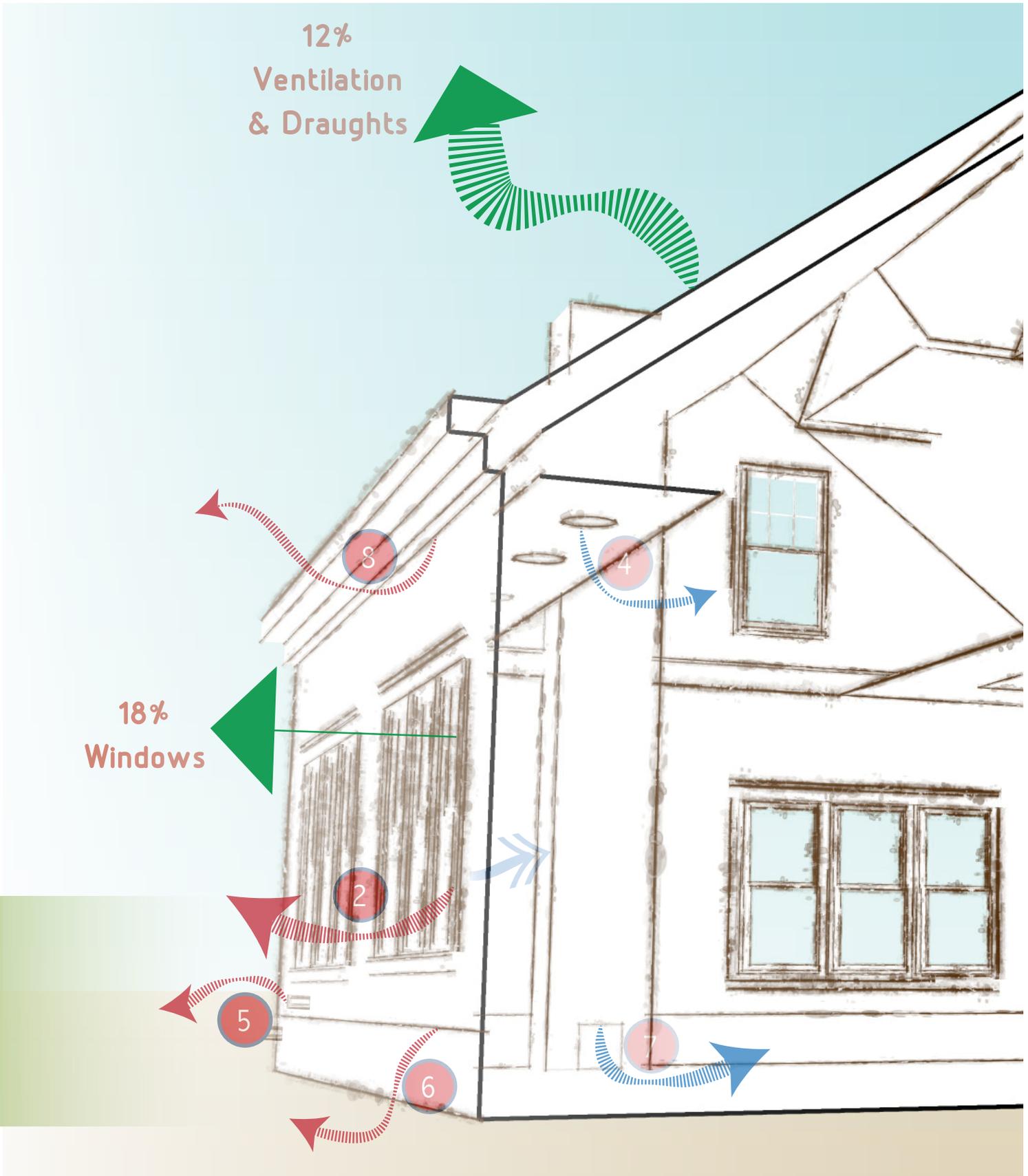
The Guide

Tips for Owners

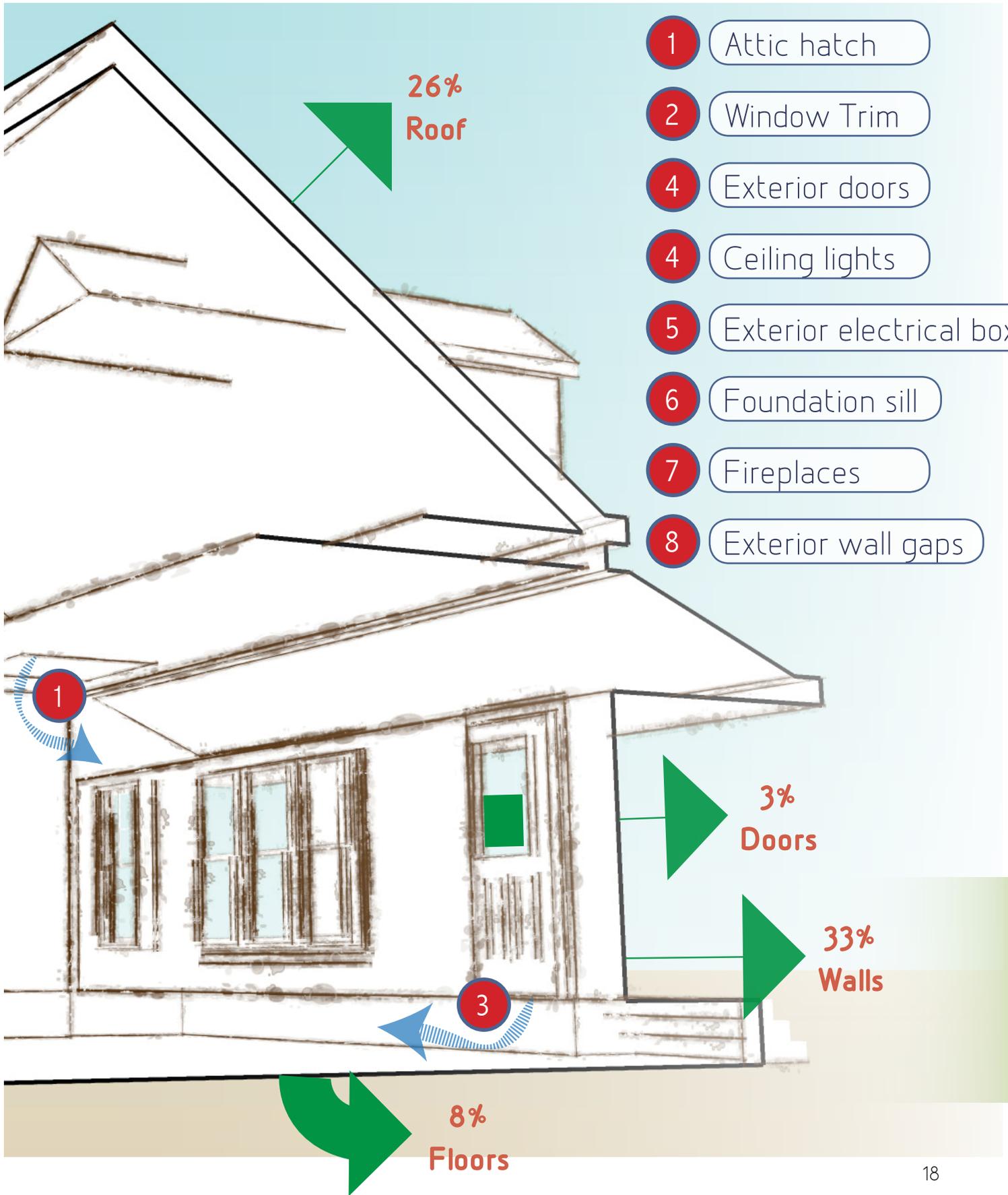


Decades of technological advancement and improved know-how about energy, water, heat, air, and other systems in residential properties provides homeowners with **myriad options for reducing their environmental footprint**. Property owners can also contribute to the local neighbourhood through landscaping and other features derived from **Low Impact Development** principles. The following section covers low-, medium-, and high-investment strategies for improving the sustainability of your property.

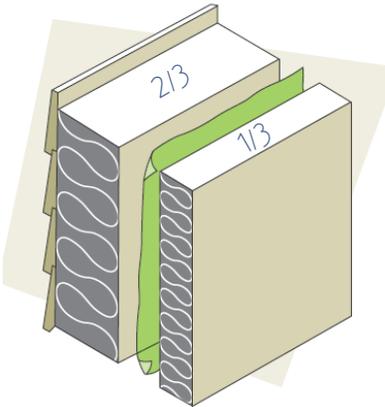
Air Leakage in Your Home



Air Leakage in Your Home



Understanding Insulation



Up to 1/3 of the insulating value can be installed on the warm side (interior) of the vapour barrier in your home's envelope.

Insulation

- » Insulation is measured by an imperial unit R-value, or a metric RSI-value that indicates the material's ability to resist heat flow.
 - > Higher values mean more insulating power
 - > **Conversion:** $R\text{-value} \div 5.678 = \text{RSI-value}$ i.e. $R20 \div 5.678 = \text{RSI } 3.52$
- » Insulation quality degrades if air is moving through or around it, so it is critical to seal air leaks

Recommended minimum insulation values		
House component	Metric (RSI) or Imperial (R)	Nominal insulating value
Walls	RSI	4.2
	R	24.0
Basement Walls	RSI	3.3
	R	19.0
Roof/Ceiling	RSI	8.8
	R	50.0
Floors (over unheated spaces)	RSI	5.5
	R	31.0

Source: Natural Resources Canada. (2012). *Keeping the Heat In*

Types of insulation for your home			
Type of Insulation	Pros	Cons	Best For...
Batt or blanket	Easy to install and non-combustible	Does not provide an air seal Does not fully conform to space cavity	Accessible, vapour sealed areas
Loose fill Insulation	Inexpensive, but not suitable for basements due to moisture. Loose fill insulation tends to settle, leaving gaps at the top of cavities		
Cellulose fibre	Fills irregular cavities Air sealing benefits when tightly packed (>56kg/m ³)	Creates dust Significant settling	Irregular cavities, attics, walls, floors, roofs
Glass fibre	Non-combustible options available	Difficult to fill irregular cavities unless tightly packed (>40kg/m ³)	Open horizontal spaces
Mineral fibre	Suppresses dust and is non-combustible		Attics, walls roofs, floors
Rigid Board Insulation	Interior installations must be covered with a fire resistant material. Boards are easy to cut and shape but will not fill irregular cavities		
Expanded polystyrene	Moisture resistant		Below-grade exterior
Extruded polystyrene	Can function as an air and vapour barrier if joints are properly sealed		Below-grade exterior
Mineral fibre boards	An effective drainage layer		Below-grade exterior
Polyurethane & polyisocyanurate	Can function as an air and vapour barrier if joints are properly sealed	Must be protected from sunlight and water	Tight spaces where a high insulating value is needed
Spray Foam	Must be covered by a fire resistant material (1/2" drywall) and protected from sunlight. A 24-hour curing process is needed. Spray foam will lose insulation value over time		
Closed-cell polyurethane	Can function as an air and vapour barrier if joints are properly sealed	Significant expansion (24-38x) means it is not suitable for tight spaces Relatively expensive	Basements Any location but costly
Open-cell polyurethane	Expands to 100x original volume, fills cavities better Cheaper than closed-cell foam	Not a vapour barrier	
Cementious Foam	Non-combustible	No vapour barrier and a long curing period	Similar to spray foam
Reflective bubble foil	Designed for warm-hot climates, not suitable for Canada. Near-zero RSI or R value		

Source: Natural Resources Canada. (2012). *Keeping the Heat In*

Air Leakage and Insulation Improvements



Doors

- » Install a door sweep to seal the gap between the bottom of your door and the threshold
- » Apply caulking around door frames and weather-stripping around sliding doors

Window Pelmets

- » Install pelmets or covers atop your curtains to prevent convection currents and heat loss
- » Ask your landlord to install permanent pelmets or use a towel, blanket or thick cardboard for temporary insulation - make sure not to affect exterior view of the window.

Window Curtains

- » Heavy, lined curtains insulate over the winter and prevent window heat gain over the summer
- » Make sure they are close fitting, hang to the floor, and overlap window edges.
- » To optimise daylight:
 - > In winter, only open curtains on sun-facing windows during sunny days
 - > In summer, only open curtains on windows not receiving direct sunlight

Window A/C Units

- » Be sure the window unit fits tightly in the window
- » Insulate room air conditioners from the outside over winter
- » Use tight-fitting unit covers available at home improvement centres

DIY: http://www.ehow.com/how_6085077_winterize-window-air-conditioners.html

Fireplace Damper

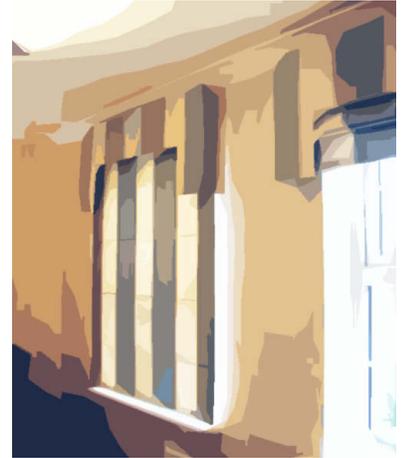
- » A chimney is designed to create a suction draft to remove smoke. Close the flue to avoid drafty apartments and warm/cool air loss.
- » Remember, you shouldn't close up ventilation outlets in a house with un-flued gas heaters.

Basements and Renters on Ground Units

- » The rim joist is where basement wall cement or stone contacts the wooded house frame
- » Where accessible, seal the perimeter with expanding foam or caulk.
- » Seal any wall penetrations, such as piping and wiring between the basement and main floor.

Envelope Penetrations

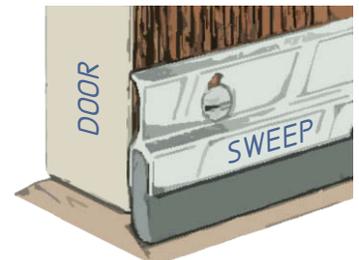
- » Vents, ducts, plumbing stacks, and electrical boxes often have gaps around them that leak air
- » Seal gaps with caulk and holes up to 3 inches in diameter with spray foam.
- » Cover spaces larger than 3 inches with a piece of foam board and seal with spray foam.
- » To save energy and reduce drafts, use spray foam or caulk to seal holes around penetrations, such as pipes, wiring, vents or recessed lights, that go through the home to the outside, attic, crawlspace, or an unfinished basement.



Window pelmets



An A/C unit jacket will prevent drafts in winter

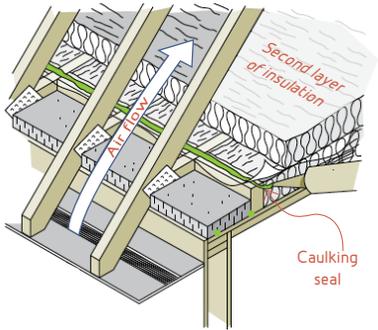


Door Sweep

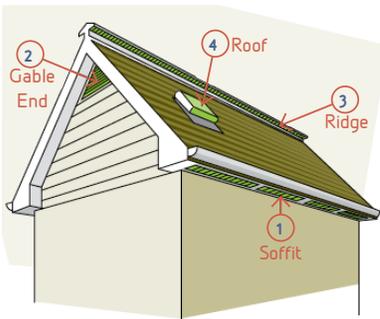


Rim joists are a source of air leakage

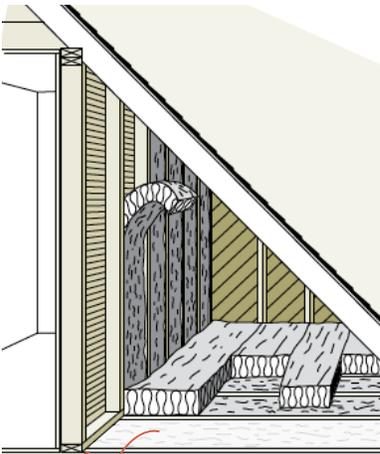
Air Leakage and Insulation Improvements



Installing a polyethylene vapour barrier in your attic



Types of roof venting



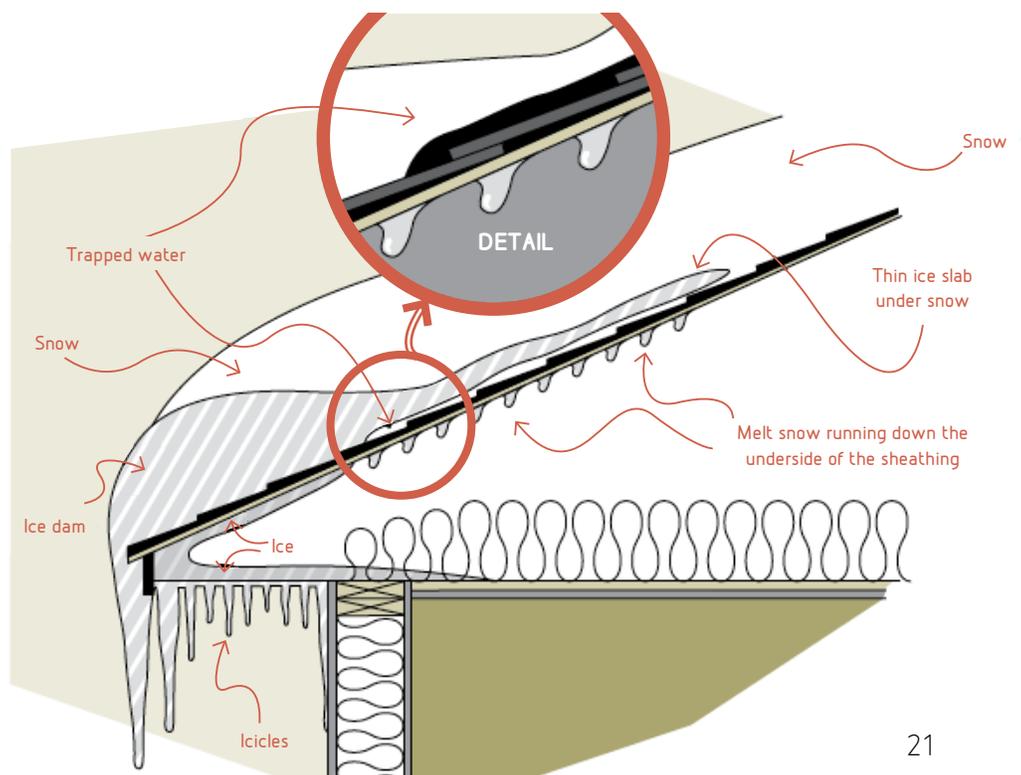
Knee wall leakage hot-spot

Roofs and attics

- » Paint walls of rooms abutting the attic with two coats of oil-based paint or one coat of latex vapour-barrier paint
- » Seal your attic with polyethylene plastic over top of or between ceiling joists and layer more insulation above it for an air and vapour barrier
- » Ensure that batt insulation is tightly packed, even around cross bracing, and that ventilation air flow channels are unobstructed
- » Ideally, 50% of the attic ventilation openings should be continuous **soffit** vents, and the other 50% gable, ridge or roof vents
- » Half-storey attics often leak indoor air through the ceiling joists beneath the knee walls
- » Proper ventilation and vapour barriers are critical in attics to avoid moisture and ice dams
 - > Highly insulated and uninsulated attics rarely cause ice dams, improperly insulated roofs will create dams
 - > Cathedral ceiling roofs are a challenging feature for preventing ice dams because of the restricted space. Contact an insulator with dense-pack insulation experience.

Basements

- » Before renovating your home basement, assess its status:
 - > Water leaks - Major leaks must be corrected, usually by excavating, then waterproofing, minor leaks may be corrected by directing water away from the home or patching the foundation
 - > Dampness - may result in mould, peeling paint, efflorescence, spalling, and odours. Check the dampness of your basement by taping a plastic sheet to your basement walls and slab. After two days check if water has collected above or below the plastic indicating high interior moisture levels or ground-source moisture, respectively.



Air Leakage and Insulation Improvements

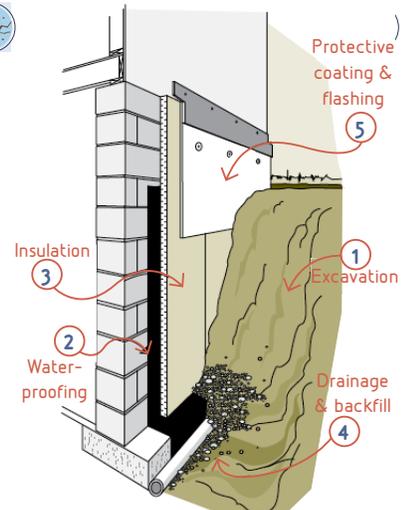


Basements continued...

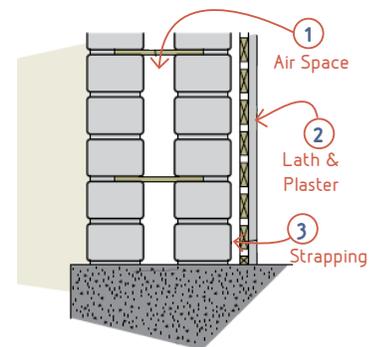
- » Insulating your basement from the outside is best, but costly and potentially more difficult.
 - > **Insulating inside** - Choosing this method depends on whether moisture and air barriers are needed, how the space is used and the cost of the upgrade.
 - > **Insulating outside** - This method involves excavating around the foundation, waterproofing and installing insulation. The better option, but more expensive
- » **Rubble or irregular basement walls** - Exterior insulation is most advised, but the interior can be insulated if there are no moisture or water problems
 - > Do not exceed RSI 2.1 when insulating from the inside as there is a risk of damaging the foundation through freeze-thaw cycles.
- » **Cold cellars or an unheated garage** - insulate these spaces from the heated portions of the basement, treating their walls as if they were exterior basement walls.

Insulating Walls

- » There are generally three types of wall construction in Westmount:
 - > **Solid walls** - Do not have a cavity that can be insulated, and should therefore be sealed and insulated from the interior or exterior. Never insulate the drainage plane or cavity that many, especially double-brick, solid walls have.
 - > **Concrete block** - Usually have hollow cores for air circulation that increase convective heat loss. Insulate from the from the interior or exterior and cap the top of the blocks.
 - > **Frame walls** - have a cavity for insulation that varies in thickness depending on the type of construction method used. Be mindful of insulation obstructions within the cavity (plates, fire stops, plumbing, wiring, ducts, etc.).
- » Blown-in insulation can be added to wall cavities through drilled holes that provide access to the wall cavity. When negotiating with a contractor, define the manufacturer's recommended density levels for the insulation, verify that these densities will be achieved and confirm how the wall repairs will be completed. Access to the wall cavity is gained from the:
 - > **Interior** - small holes are drilled into the interior wall finish and plugged
 - > **Exterior** - siding or bricks are removed to inject insulation
 - > **Basement/attic** - often the easiest method if cavities are exposed at the top or base
- » Greater insulation can be achieved by building new walls on the inside/outside of existing walls
 - > see below:

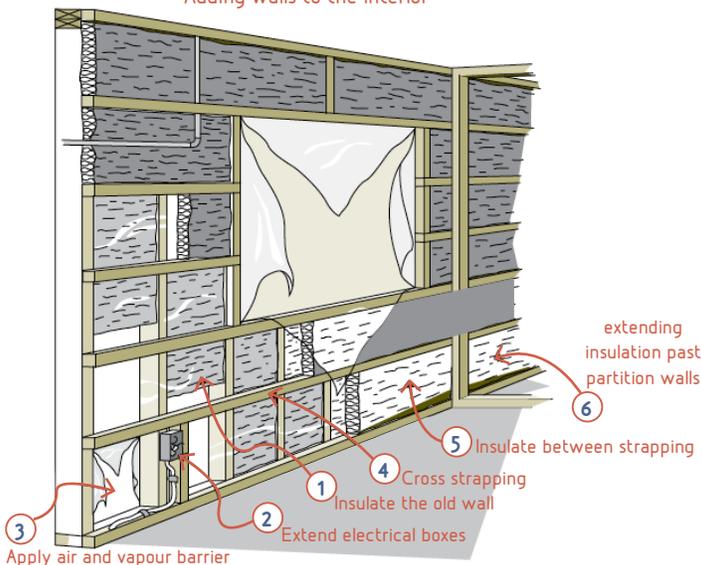


Components of exterior insulation

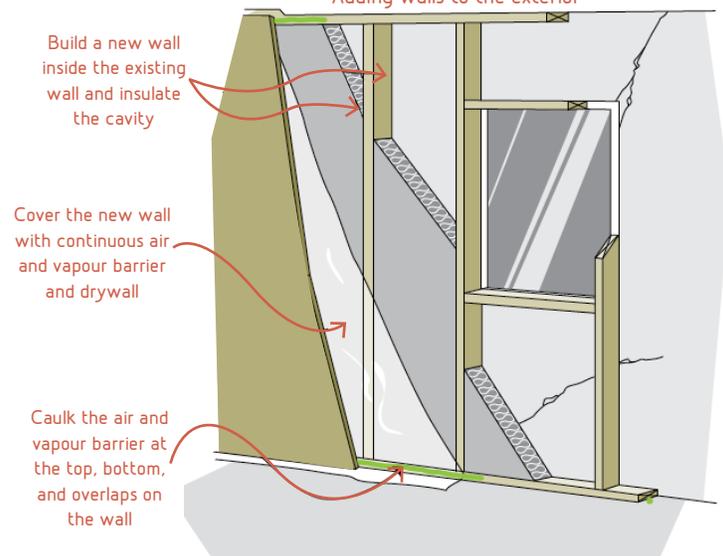


Double-brick wall with drainage cavity

Adding walls to the interior



Adding walls to the exterior



Air Leakage and Insulation Improvements



Windows

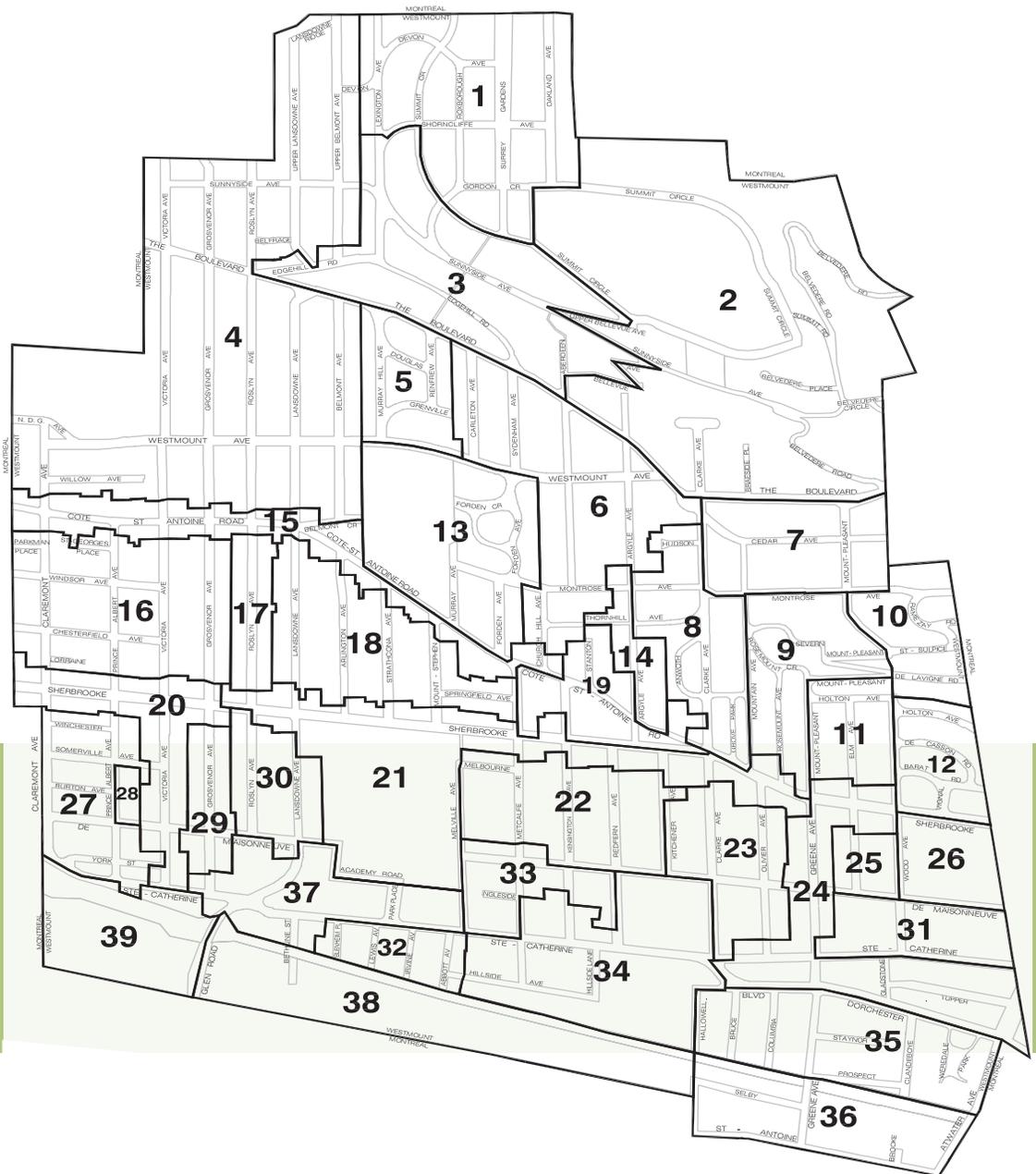
» To preserve and enhance the architectural beauty of the City of Westmount, there are important guidelines to follow when upgrading your windows to more efficient products. Your first step is to consult with the Westmount Urban Planning Department on your options and guidelines relevant to your property.

» The **Character Areas** map below identifies the architectural and design area guidelines relevant to your home. Details on each Character Area can be accessed online at:

<http://www.westmount.org/page.cfm?Section.ID=6&Menu.Item.ID=51>

» **Window and door guidelines** are available at:

http://www.westmount.org/pdf_files/UP_guidelines.e/4-Windows.and.Doors.pdf



1. Vicinity of St. Joseph's Oratory
2. Westmount Mountain
3. Sunnyside and Edgehill Road
4. West of the Mountain
5. Douglas and Grenville
6. Aberdeen and Vicinity
7. Cedar Avenue and Vicinity
8. Clarke Avenue and Vicinity
9. Rosemount
10. Saint Sulpice and Ramezay
11. Holton Estate
12. Priest's Farm
13. Forden and Murray Park
14. Argyle Avenue
15. Côte Road
16. On the Hurtubise Farm
17. Roslyn Avenue
18. South of Murray Park
19. Vicinity of City Hall
20. Victoria and Sherbrooke
21. Sherbrooke and Westmount Park
22. The Mansions of Lower Westmount
23. Vicinity of St. Leon's Church
24. Greene and St. Catherine
25. Wood & Elm Street, below Sherbrooke
26. Dawson College
27. Somerville Area
28. On site of the Old Bakery
29. Grosvenor Avenue
30. Lansdowne and Roslyn, below Sherbrooke
31. The Towers of Westmount
32. Vicinity of Blenheim Place
33. De Maisonneuve near Westmount Park
34. Around Westmount High
35. Hollowell-Weredale
36. St. Antoine Street
37. Around Park Place
38. Vicinity of Glen Yards
39. Glen Yards

Tips for Owners

Lighting



Switch to Compact Fluorescent or LED Lights

- » Compact fluorescent lights (CFLs) give high-quality light with 75% less energy.
- » Incandescent bulbs are only about 10-15% efficient, the rest 85-90% is emitted as heat.
- » Incandescent bulbs can pose safety risks: paper will burn if in contact with a 60W bulb for 20min
- » CFLs & LEDs can limit blue light emission to reduce eyestrain and fatigue (especially at night).
- » Replace halogen downlights with quality LED bulbs to save on energy use

Turn Lights Off When Leaving a Room

- » Turning lights on and off reduces their life-span and increases replacement costs:
 - > **Incandescent** - highly inefficient - Energy savings from turning lights off is much greater than the cost of replacement, so always turn off your incandescent lights
 - > **Fluorescent** - efficient - These are more expensive and more sensitive to on/off switching. A general rule of thumb: turn off fluorescents if leaving a room for >15min
 - > **LEDs** - highly efficient - LED light sources are "switch" friendly. Turning them on and off actually extends their lifespan

Optimise Natural Light

- » Open blinds and curtains to maximize sunlight, this will also reduce indoor pathogens

Install Automatic Lights

- » Lights with sensors to ambient light will reduce energy use in bright conditions
- » Motion sensor lighting will increase convenience and can reduce unnecessary energy use

Keep Lighting Fixtures Clean

- » Dirt absorbs light so a clean bulb or fixture produces more light.
- » Cleaner windows will also allow more light into a house

Thermostats



Replace Mechanical Thermostats with Electric Models

- » Because they are less sensitive to room temperature, old mechanical thermostats fluctuate by 2-5°C from your desired temperature
- » Electronic thermostats provide a more constant temperature, greater comfort, and can save you up to 10% in heating costs.
- » Buy thermostats according to your lifestyle: 5-2 thermostat models divide the week into weekdays and weekends, while 5-1-1 models separate Saturdays and Sundays programming

Lower Your Preset Temperature

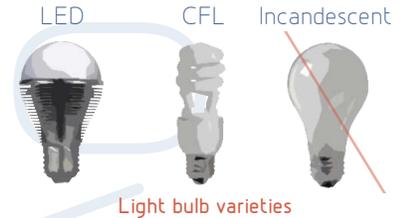
- » Your body feels cold very strongly through your feet - wear thick socks and slippers in winter
- » Lowering nighttime temperature settings by 3°C can save up to 6% in heating costs
- » Programmable thermostats make presetting temperatures easy

Heat and Cool Only What You Need

- » Only heat or cool rooms you are using, and keep doors closed to save on heat/cold loss

Modify Temperature Settings Gradually

- » Quickly raising your heat pump setting will activate its heat strip, which uses a lot of energy



Cost Comparison: Incandescent, CFL, & LED Bulbs

	60W Incandescent	15W CFL	12W LED
Energy Saved (%)	-	75%	75-80%
Annual Energy Cost (\$)	\$4.80	\$1.20	\$1.00
Bulb Life (hours)	1000	10,000	25,000

*Based on 2 hrs/day of usage, and electricity rate of 11 cents per kilowatt-hour



Tips for Owners

Measure the flow rate of your shower head:

Turn on the shower to its "normal rate" and capture 30 seconds of water flow into a bucket.

Measure how many litres of water are in the bucket and double that figure. inefficient showerheads can use more than 15 litres per minute

Water Conservation



Shower heads

- » Using a low-flow shower head (about 2.5 gallons/minute) and showering for 10min will save you five gallons of water over a typical bath.
- » New showerheads also save energy by reducing water heating needs

Laundry

- » Wash your laundry with cold water - only very oily stains need hot water
 - > Hot water washing accounts for ~90% of laundry machine energy use
- » Washing full loads can save more than 12,800L of water each year
- » Air dry your clothes on an outdoor clothes line or hang on a clothes rack indoors.
 - > In winter indoor air drying can also help with dry, uncomfortable air in your home.

Dishwashing

- » Save water by scraping dishes instead of rinsing them before loading in the dishwasher.
- » Run your dishwasher with a full load and use the air-dry option if available
- » Save rinsing water by using after-wash to water plants or to refill toilet tanks

Faucet Taps

- » Dripping taps waste a lot of water - install new washers to fix your leaks
- » Aerators reduce water flow while maintaining pressure

Subsidies are available for aerators - see the financial support section

Toilets

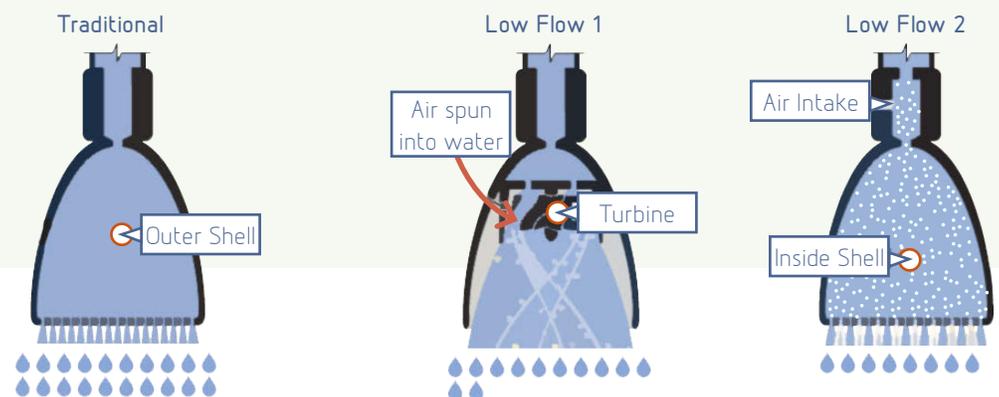
- » Fix leaks: to check for leaks add biodegradable food colouring to your toilet tank. If the colouring appears in the toilet bowl before flushing, your cistern is leaking
- » Replace toilets with high-efficiency rated models
- » If you have a single-flush toilet, place 1-2 full water bottles in the tank to reduce water use

Hot water leaking at one drip/second can waste up to 1,661 gallons of water per year!

Ideally, the comfortable and healthy range of relative humidity in your home is between 30% and 50%

8-minute shower

1 gallon



Tips for Owners

OWNERS

Ventilation



Heating Vents

- » Make sure all air registers are clear of furniture so that air can circulate freely.
- » If your home has radiators, place heat-resistant reflectors between radiators and walls
- » If your home has central heating consider vent directors to help circulate air from vents to the centre of the room instead of to the ceiling

Heating and Cooling Ducts

- » Repair leaky ducts to reduce heating and cooling costs

Bathrooms

- » Vent fans control moisture, mold, and mildew. Run your fan for 15min after showering.
- » Efficient fans can use up to 60% less energy than standard models

Ceiling Fans (with or without lighting)

- » In winter, reverse the fan motor to push air upwards - this will move warm ceiling air downward.
- » In summer, direct the fan to blow downward to help you feel cooler
- » Increasing your thermostat by 2°C and using your fan can lower A/C costs by 14% annually.
- » Ceiling fans only cool people, not the room, so turn them off when you leave the room.

Appliances & Electronics



Consumer Electronics

- » Many electronics use energy when off - up to 10% of your energy bill in fact!
- » Unplug any battery chargers or power adapters when not in use (like your cell phone charger).
- » Make it simple by connecting multiple appliances to one power strip that can be flipped off.
- » Turn off computer monitors when not in use, and program the automatic "sleep function"
- » LCD computer monitors emit half as much greenhouse gases as conventional monitors

Refrigerator and Freezer Units

- » If your current refrigerator was made before 1993, it uses twice the energy as new models.
- » The appropriate temperatures for refrigerators are 3°C to 5°C, and freezers: -15°C to -18°C
- » Ventilate your fridge: Provide at least 5cm of space around the top, back, and sides of your unit
- » Place fridges and freezers in cool spots, away from sunlight and heat sources (e.g. stoves)
- » Check and clean seals on your refrigerator/freezer and regularly remove frost buildup
- » Keep your freezer full to use less energy. Consider filling your freezer with water containers

Stoves

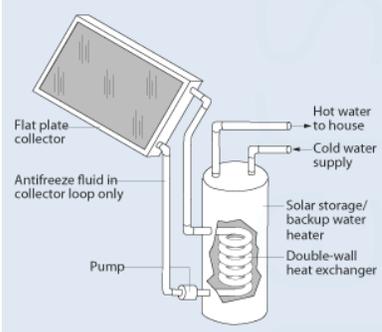
- » Use the right sized pot on your burners: a 6" pot on an 8" burner wastes over 40% of the heat
- » Cover your pots and pans with lids to cook more efficiently and keep your kitchen cooler
- » Use an electric kettle instead of the stovetop for boiling water

Water Heaters

- » You can improve the efficiency of old water heaters by wrapping it with an insulating jacket
- » Insulate your hot water piping to keep it warm on its way to the tap
- » Reduce hot water demand by using cold water for hand washing, shaving and brushing teeth

Tips for Owners

Active, Closed Loop Solar Water Heater



Active solar hot water collector system
Image source: U.S. Department of Energy

Choosing a water heater for your home:

	Conventional Storage	Tankless	Heat Pump	Solar	Tankless Coil & Indirect
Cost	\$	\$\$	\$\$	\$\$\$	\$\$
Lifespan	10-15 years	20+ years	10-15 years	~20 years	10-11 years
Efficiency vs. Storage	-	8-34% more efficient	2-3 times more efficient	50% more efficient	-
Pros	Low cost	Constant supply >\$100 annual savings	~\$300 annual savings Dehumidification in the summer	Infrequent maintenance needed Low energy cost	Low installation and maintenance cost
Cons	Standby heat loss	Limited flow rate Limited cost savings	Performance depends on install location Exhausts cold air	Requires a backup heating supply	May be an inefficient choice for residential use
Tips	Insulate your tank Flush 1L of water monthly Replace anode rods as needed	Install multiple units or install dedicated tankless heaters near points of use	Resistance mode will lower cold air exhaust, but also the efficiency	Purchase a storage water heater as a bundle package	
Fuel Type	Electric Natural Gas Fuel Oil Propane	Electric Natural Gas Propane	Electric Geothermal or Ground-source Natural Gas	Solar	Electric Natural Gas Fuel Oil Propane

Source: US Department of Energy. (2012). *Energy Saver 101 Infographic*

Heating Systems

Heating Appliance Care

- » Change the filters in your heating system every month for optimum efficiency.
- » Expose you heating system: do not stack materials against or atop your HVAC unit

Active Solar Heating (ASH)

- » ASH heats a fluid (air or liquid) by solar energy and uses it for space heating or heat storage
- » It is usually most economical to design a system to provide 40-80% of the heating need
- » Speak to the City Planning office to investigate local building codes, zoning ordinances, and subdivision covenants before construction

Cooling Systems

Air Conditioners

- » Change or clean AC air filters month to optimise system performance
- » Opening interior doors will allow cooled air to circulate throughout the home
- » Ensure your unit has a Seasonal Energy Efficiency Ratio (SEER) of 15
- » ENERGY STAR qualified models use AT LEAST 10% less energy

More information: www.mge.com/images/PDF/Brochures/Residential/AirConditioners.pdf

Tips for Owners

Low Impact Development



Low Impact Development (LID) enhances the infiltration and retention capacity of ground cover to help with stormwater management, improve water quality, maintain a balanced hydrologic cycle, and contribute to the natural environment.

By collecting runoff and meltwater, slowing down their flow, enhancing their infiltration into the ground, and providing dense vegetation to increase evapotranspiration of hydrological inputs, watershed ecosystems eliminate many problems caused by runoff.

You must check with the City Planning Department before building green infrastructure as there are important bylaws and regulations to be followed to ensure safe, appropriate, and acceptable LID design and construction standards.

Permeable Surfaces

- » Reduce the rate and volume of water and pollutants reaching local streams
- » Improves traffic safety by increasing skid resistance and reducing hydroplaning risk
- » Prevents downstream erosion and storm-drain surges

Bioretention Cells (Rain Gardens)

- » Cells can be wet or dry systems:
 - > **Wet** - simulate aquatic ecosystems
 - > **Dry** - deeper retention cells allow for rapid water infiltration and dry ground conditions
- » Three designs are possible:
 - > Without an underdrain for full infiltration
 - > With an underdrain for partial infiltration
 - > Lined with impermeable materials with an underdrain for filtration (a biofilter)

Bioswales

- » Proper design and construction ensure that swales exfiltrate within 24-48 hours, thereby eliminating water-borne pest concerns
- » Design Considerations include:
 - > Length of the swale
 - > Cross-sectional shape and slope
 - > Type of vegetation
 - > Infiltration rate of the soil

Green roofs

- » Reduces the runoff from your roof based on soil depth, roof slope, and rainfall levels
- » A conservative runoff reduction rate estimate for a healthy roof is 45 to 55% water reduction
- » In Westmount "green roofs, if permitted by applicable bylaws and codes, are permitted on flat roofs of all buildings." Check with the City Planning Department before constructing

http://www.westmount.org/pdf_files/UP_guidelines_e/3-Roofs.pdf

Living Walls

- » Provide a water management and filtration system in very dense spaces.
- » Living walls channel water through pipes filled with porous soil and a variety of vegetation
- » Bacteria in the piping help remove pollutants from runoff water while reducing runoff.
- » Living/green walls are an excellent replacement for traditional downspouts
- » When constructed against buildings, they can shade the building and reduce cooling demand



A permeable pavement option



Curbside rain garden design



Curbside bioswale



Green roof on a shed



Living wall system

Tips for Owners

OWNERS

Performing the work yourself:

- » Be careful when working with tools and products, and follow the manufacturer's safety directions
- » Wear appropriate protective equipment and clothing
- » Protect the rest of your home from dust, debris and contaminants
- » Be cautious about vermin, droppings, mould, lead, asbestos, and vermiculite insulation that may contain amphibole asbestos or other hazardous products

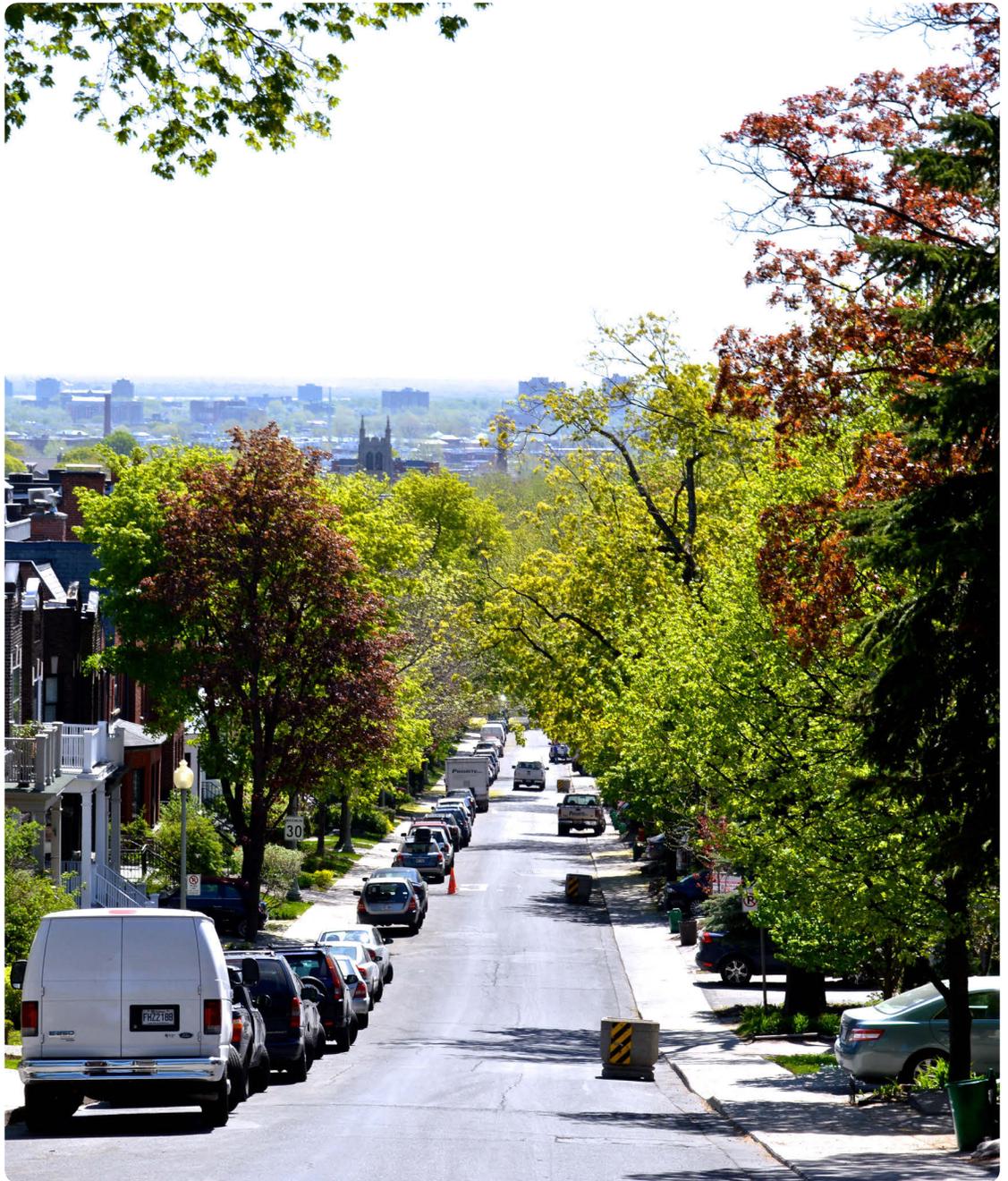
Hiring a contractor:

- » Seek out at least three quotes, ask for proposals in writing, and insist on a written contract
- » Questions to ask to get to know your contractor:
 - > How long have you been in business?
 - > What work are you, or your subcontractors, licensed to do?
 - > What kind of work do you specialize in?
 - > Have you done a similar job before?
 - > Will you use your own crew or will you subcontract the work?
 - > What challenges do you expect on this project?
 - > How will you deal with the health and energy efficiency aspects of the job?
 - > How and when do you clean up, particularly fine dust?
 - > What work schedule will you follow?
 - > What kind of warranty do you offer and what does it cover?
 - > Do you carry workers' compensation and liability insurance?
 - > Will you provide a written contract?
 - > Will you take out all required permits (e.g., building, plumbing, electrical)?
 - > Can I see the Material Safety Data Sheet for the products being used (if applicable)?
 - > Will the product be installed according to manufacturer guidelines?
 - > Are the workers trained in these the proper installation procedures?
 - > Will the work comply with all relevant legislation and utility requirements?
 - > What steps will you take to protect my family during and after the renovation?
 - > May I contact your references?
 - > Clarify the contract termination clauses (e.g., penalties, etc.)
- » Arrange for an appropriate contract structure:
 - > **Fixed-price:** a fixed price includes materials, labour, equipment and fees, plus contingencies, overhead and profit without variation after the fact
 - > **Cost-plus:** you pay the actual cost for labour, materials, equipment and agree to a percentage for overhead and profit (remember to set a maximum limit)
 - > **Design-build:** A renovator designs and carries out the whole project. You can use either a fixed price or cost-plus contract, again with a set cost limit.
- » Holdbacks
 - > **Builders Lien:** Provides protection against liens being placed against your home by subcontractors and suppliers. This allows a period of time, after the project is substantially completed, for claims to be made.
 - > **Deficiency:** It is a standard procedure to hold back a reasonable amount of money (e.g., a percentage of the project cost) near the end of a project to cover the cost for final work items.
 - > **Seasonal or Delivery:** It is possible that items cannot be completed because of seasonal factors (e.g., exterior painting, landscaping, etc.). It is standard procedure to hold back payment(s) equaling the cost of the items to be completed.

A contractor checklist is available here:

www.bidmyreno.com/blog/hiring-a-contractor-advice-from-the-canadian-mortgage-housing-corporation-cmhc/

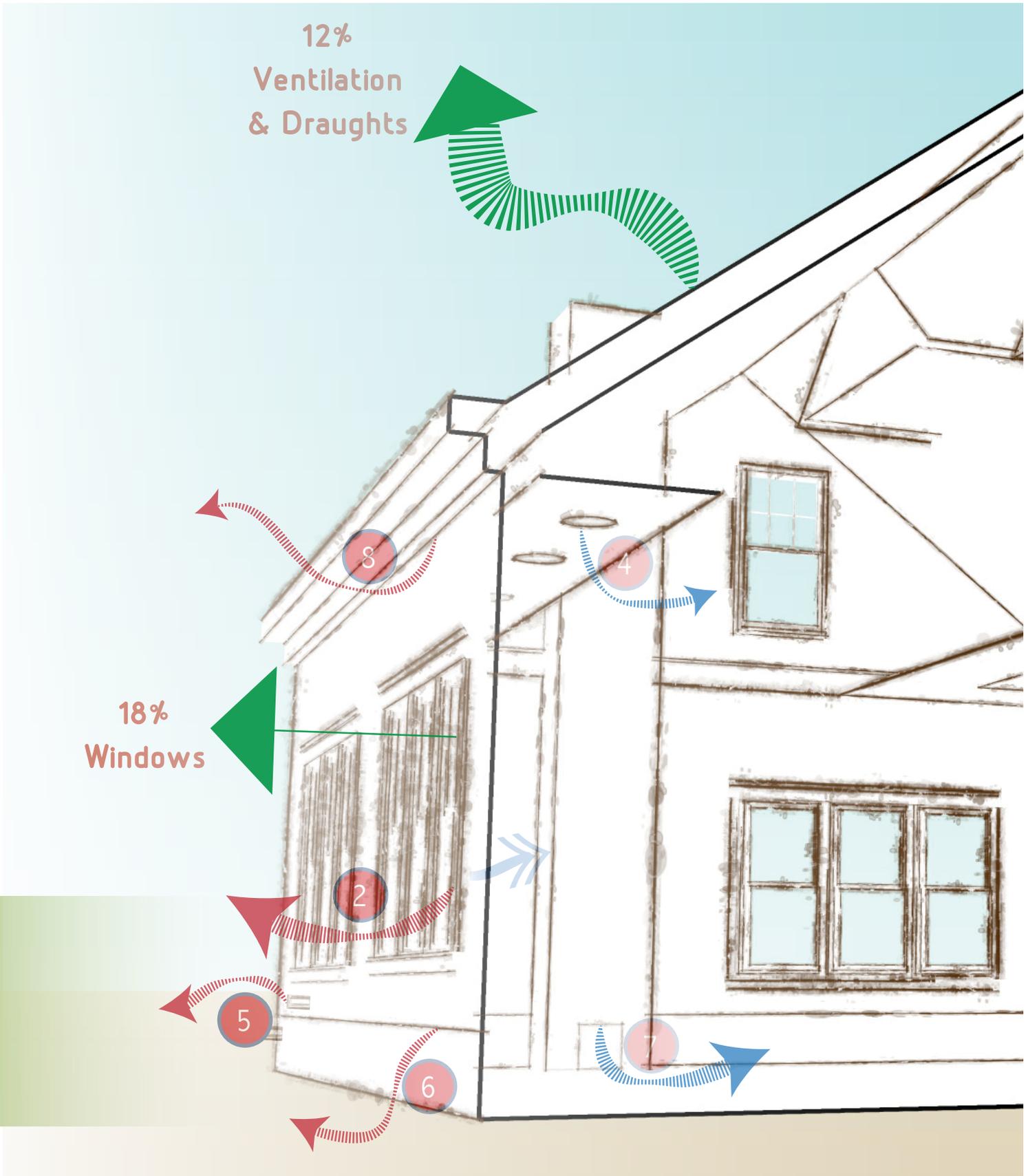




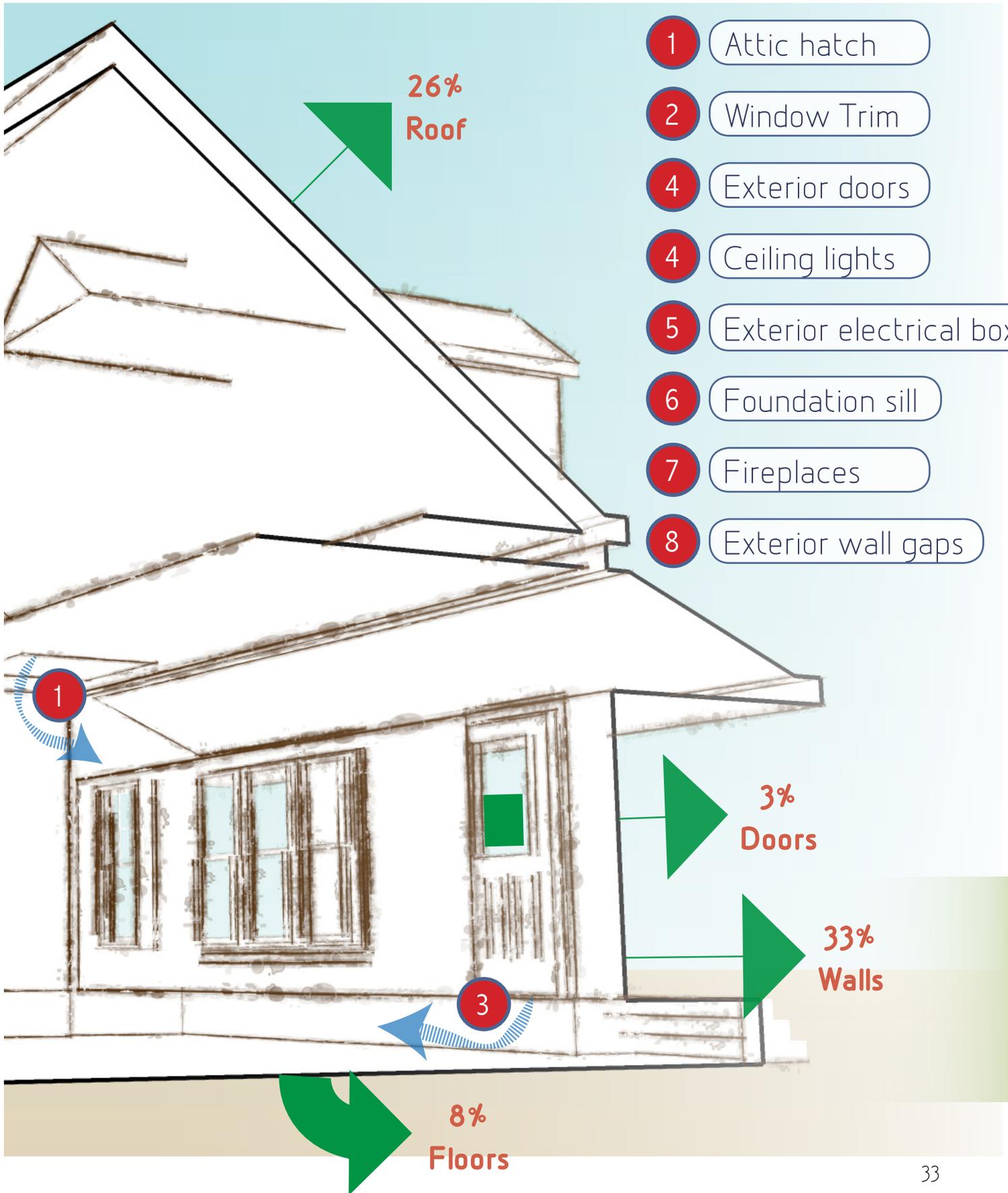
Opportunities for Renters

The Guide

Air Leakage in Buildings



Air Leakage in Buildings



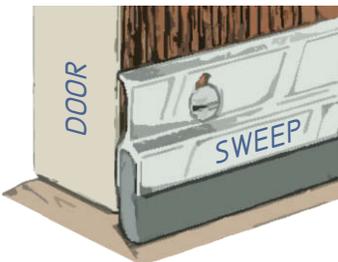
Air Leakage Improvements



Window pelmets



An A/C unit jacket will prevent drafts in winter



Door Sweep



Rim joists are a source of air leakage



This icon indicates that renters must consult their landlords or property manager beforehand

Doors

- » Install a door sweep to seal the gap between the bottom of your door and the threshold
- » Apply caulking around door frames and weather-stripping around sliding doors

Window pelmets

- » Install pelmets or covers atop your curtains to prevent convection currents and heat loss
- » Ask your landlord to install permanent pelmets or use a towel, blanket or thick cardboard for temporary insulation - make sure not to affect exterior view of the window.

Window curtains

- » Heavy, lined curtains insulate over the winter and prevent window heat gain over the summer
- » Make sure they are close fitting, hang to the floor, and overlap window edges.
- » To optimise daylight:
 - > In winter, only open curtains on sun-facing windows during sunny days
 - > In summer, only open curtains on windows not receiving direct sunlight

Window A/C units

- » Be sure the window unit fits tightly in the window
- » Insulate room air conditioners from the outside over winter
- » Use tight-fitting unit covers available at home improvement centres

DIY: http://www.ehow.com/how_6085077_winterize-window-air-conditioners.html

Fireplace damper

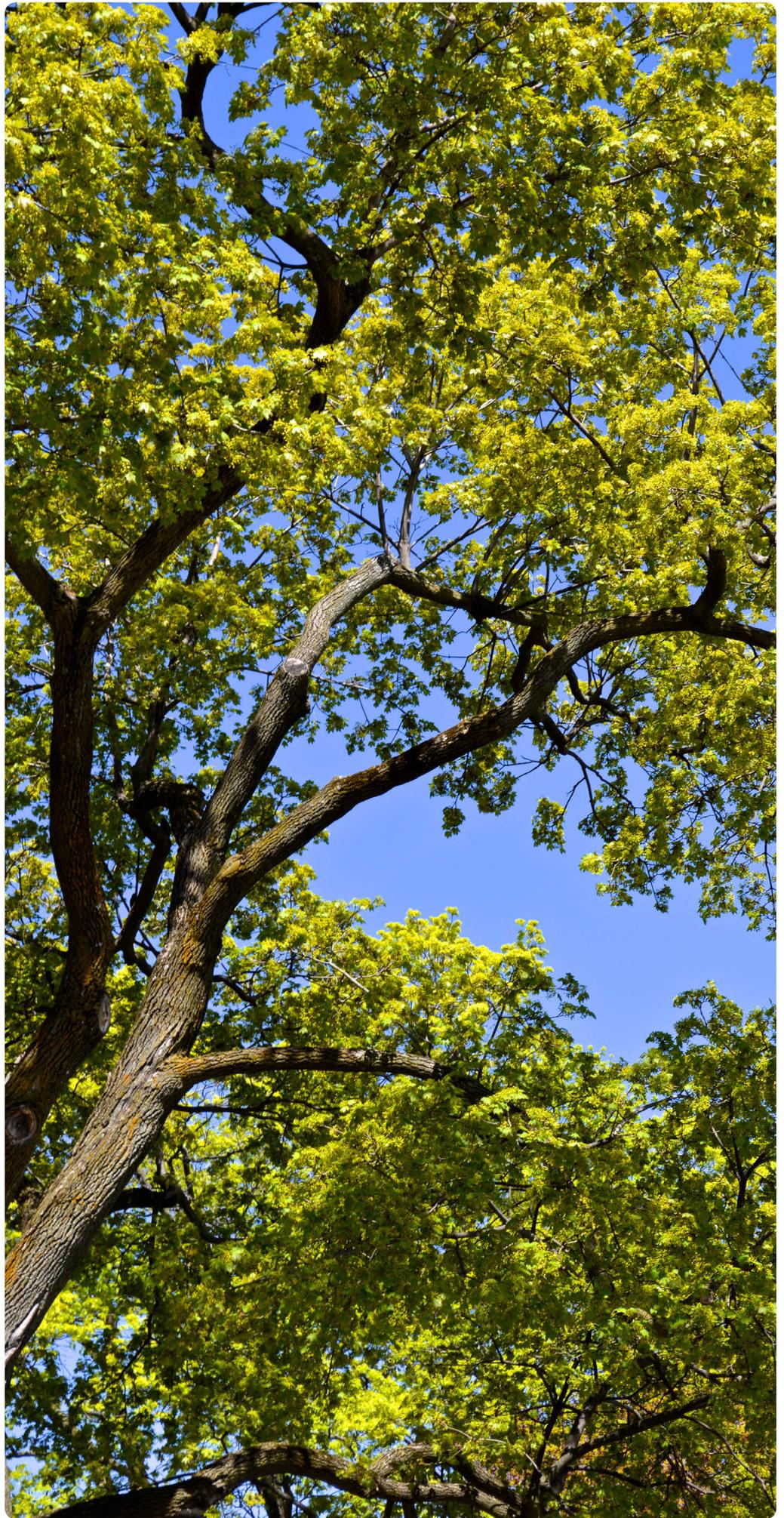
- » A chimney is designed to create a suction draft to remove smoke. Close the flue to avoid drafty apartments and warm/cool air loss.
- » Remember, you shouldn't close up ventilation outlets in a house with un-flued gas heaters.

Basements and renters on ground units

- » The rim joist is where basement wall cement or stone contacts the wooded house frame
- » Where accessible, seal the perimeter with expanding foam or caulk.
- » Seal any wall penetrations, such as piping and wiring between the basement and main floor.

Envelope penetrations

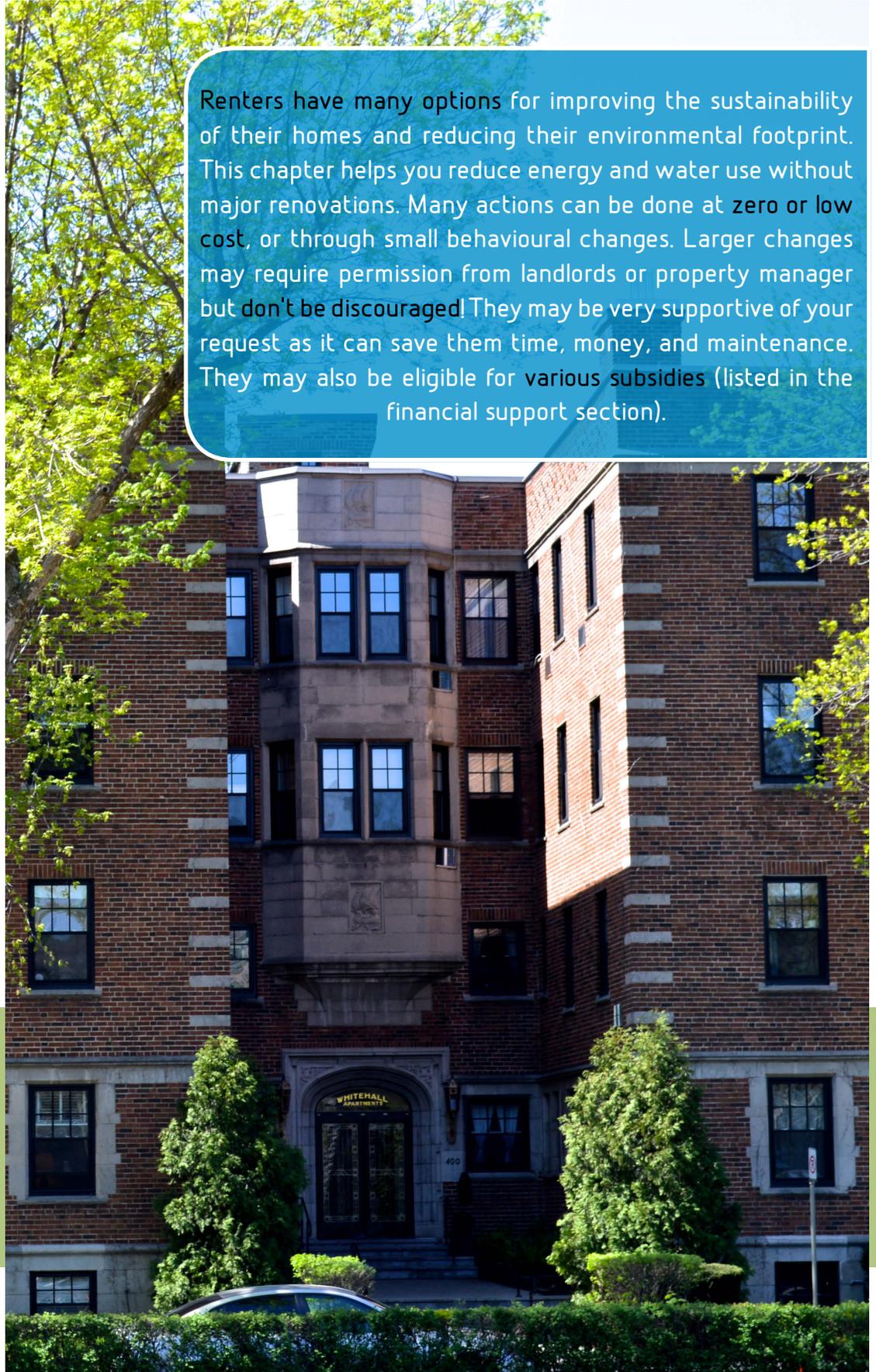
- » Vents, ducts, or electrical wires often have holes or gaps around them that leak indoor air
- » Seal gaps with caulk and holes up to 3 inches in diameter with spray foam.
- » Cover spaces larger than 3 inches with a piece of foam board and seal with spray foam.
- » To save energy and reduce drafts, use spray foam or caulk to seal holes around penetrations, such as pipes, wiring, vents or recessed lights, that go through the home to the outside, attic, crawlspace, or an unfinished basement.



Tips for Renters

Renters

Renters have many options for improving the sustainability of their homes and reducing their environmental footprint. This chapter helps you reduce energy and water use without major renovations. Many actions can be done at zero or low cost, or through small behavioural changes. Larger changes may require permission from landlords or property manager but don't be discouraged! They may be very supportive of your request as it can save them time, money, and maintenance. They may also be eligible for various subsidies (listed in the financial support section).



Tips for Renters

Lighting



Switch to Compact Fluorescent or LED Lights

- » Compact fluorescent lights (CFLs) give high-quality light with 75% less energy.
- » Incandescent bulbs are only about 10-15% efficient, the rest 85-90% is emitted as heat.
- » Incandescent bulbs can pose safety risks: paper will burn if in contact with a 60W bulb for 20min
- » CFLs & LEDs can limit blue light emission to reduce eyestrain and fatigue (especially at night).
- » Replace halogen downlights with quality LED bulbs to save on energy use

Turn off your lights when leaving a room

- » Turning lights on and off reduces their life-span and increases replacement costs:
 - > **Incandescent** - highly inefficient - Energy savings from turning lights off is much greater than the cost of replacement, so always turn off your incandescent lights
 - > **Fluorescent** - efficient - These are more expensive and more sensitive to on/off switching. A general rule of thumb: turn off fluorescents if leaving a room for >15min
 - > **LEDs** - highly efficient - LED light sources are "switch" friendly. Turning them on and off actually extends their lifespan

Optimise natural light

- » Open blinds and curtains to use sunlight instead of electric lights. Sunlight also reduces indoor pathogens

Thermostats



Replace mechanical thermostats with electric models

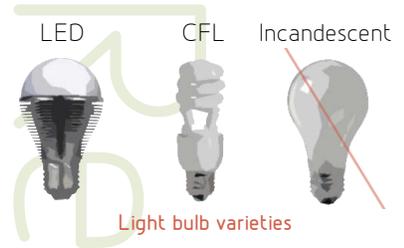
- » Because they are less sensitive to room temperature, old mechanical thermostats fluctuate by 2-5°C from your desired temperature
- » Electronic thermostats provide a more constant temperature, greater comfort, and can save you up to 10% in heating costs.
- » Buy thermostats according to your lifestyle: 5-2 thermostat models divide the week into weekdays and weekends, while 5-1-1 models separate Saturdays and Sundays programming

Lower your preset temperature

- » Your body feels cold very strongly through your feet - wear thick socks and slippers in winter
- » Lowering nighttime temperature settings by 3°C can save up to 6% in heating costs
- » Programmable thermostats make presetting temperatures easy

Heat and cool only what you need

- » Only heat or cool rooms you are using, and keep doors closed to save on heat/cold loss



Cost Comparison: Incandescent, CFL, & LED Bulbs

	60W Incandescent	15W CFL	12W LED
Energy Saved (%)	-	75%	75-80%
Annual Energy Cost (\$)	\$4.80	\$1.20	\$1.00
Bulb Life (hours)	1000	10,000	25,000

*Based on 2 hrs/day of usage, and electricity rate of 11 cents per kilowatt-hour



Tips for Renters

Measure the flow rate of your shower head:

Turn on the shower to its "normal rate" and capture 30 seconds of water flow into a bucket.

Measure how many litres of water are in the bucket and double that figure. inefficient showerheads can use more than 15 litres per minute

Water Conservation



Efficient shower heads

- » Using a low-flow shower head (about 2.5 gallons/minute) and showering for 10min will save you five gallons of water over a typical bath.
- » New showerheads also save energy by reducing water heating needs

Laundry

- » Wash your laundry with cold water - only very oily stains need hot water
 - > Hot water washing accounts for ~90% of laundry machine energy use
- » Washing full loads can save more than 12,800L of water each year
- » Air dry your clothes on an outdoor clothes line or hang on a clothes rack indoors.
 - > In winter indoor air drying can also help with dry, uncomfortable air in your home.

Dishwashing

- » Save water by scraping dishes instead of rinsing them before loading in the dishwasher.
- » Run your dishwasher with a full load and use the air-dry option if available
- » Save rinsing water by using after-wash to water plants or to refill toilet tanks

Faucet taps

- » Dripping taps waste a lot of water - install new washers to fix your leaks
- » Aerators reduce water flow while maintaining pressure

Subsidies are available for aerators - see the financial support section

Toilets

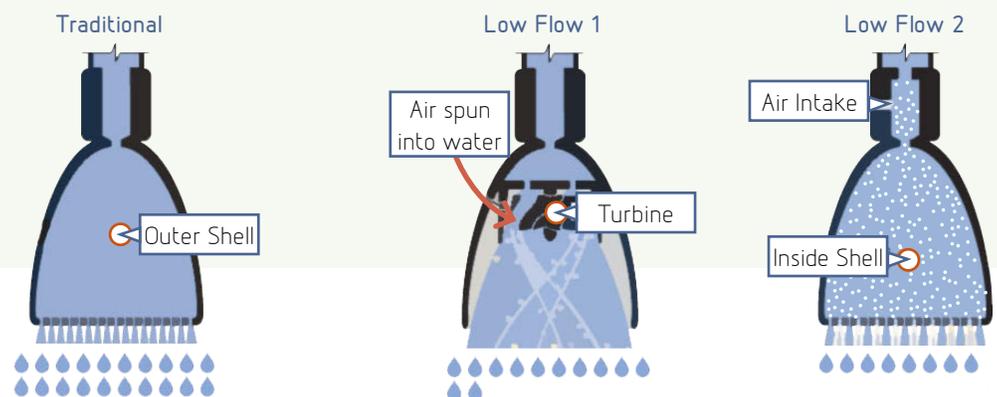
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8-minute shower

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RENTERS

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- » Insulate your hot water piping to keep it warm on its way to the tap
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Window air conditioners

- » ENERGY STAR qualified models use AT LEAST 10% less energy

More information: www.mge.com/images/PDF/Brochures/Residential/AirConditioners.pdf

Tips for Renters

RENTERS

Talking to your landlord

When writing to your landlord, point out the benefits of the repairs and any available rebates they can receive to make sustainable changes to the property. If you are offering to make some minor changes yourself, such as installing a water efficient shower head, outline what you would like to do and how much it would cost so that you can be reimbursed.

If you receive no reply after a few weeks, send a follow up note, asking if they have received your letter and if they have had time to consider your request.

Even with the landlord's approval, once your lease expires certain measures may require you to restore the property back to the condition it was in when you moved in. You need to check your lease document or clarify this with the landlord.

Sample letter

[Your name and address]
[Date]

[Landlord or agent name and address]
Re: Repairs to [your address]

Dear _____

We would like to undertake the following alterations to the premises to improve the water and energy efficiency of the home:
[detail your improvements]

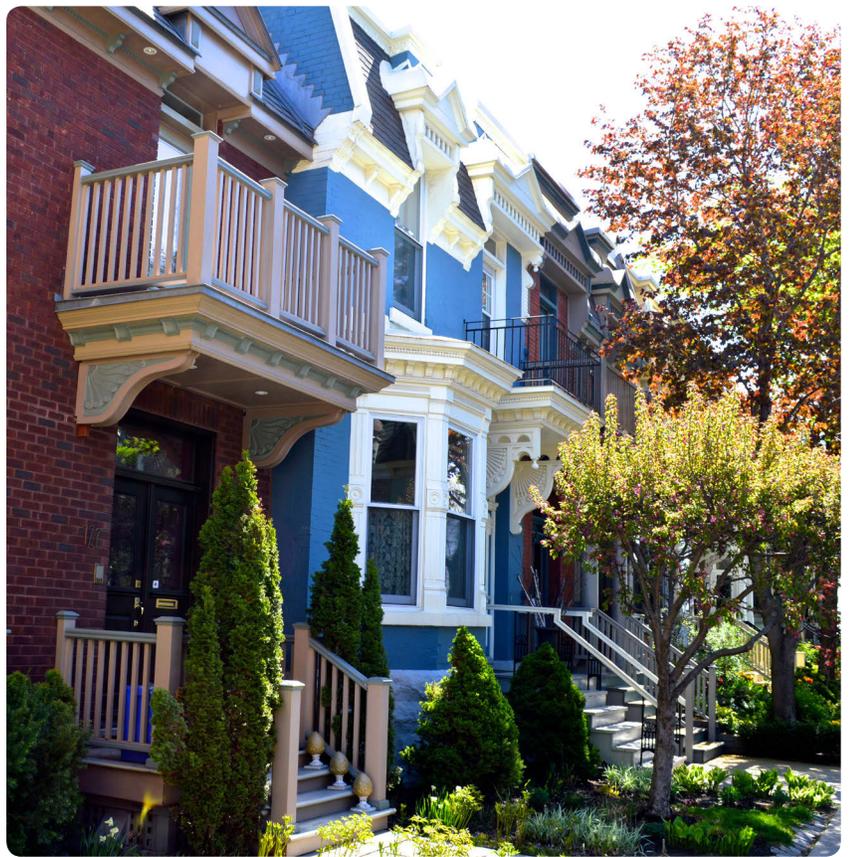
We are willing to conduct the repairs personally and request your permission to do so.
We would appreciate reimbursement for the cost of the following:
[Item 1] - Cost \$
[Item 2] - Cost \$
[Item 3] - Cost \$

We need assistance with the following repairs:
[Item 1] - Cost \$
[Item 1] - Cost \$
[Item 1] - Cost \$

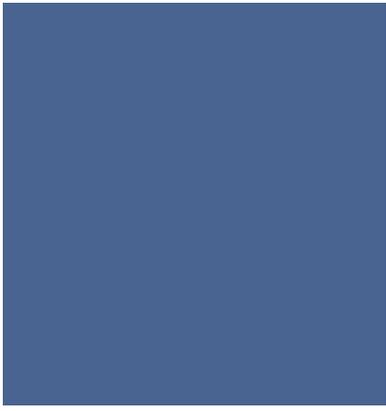
These subsidies and financial supports are available to you for the improvements listed above. Refer to these resources for information on financial assistance [see the financial support chapter for details]:
[Resource 1] - web link
[Resource 2] - web link

I look forward to hearing from you. I can be contacted at [phone] during [your available hours].

Sincerely,
[Your name]

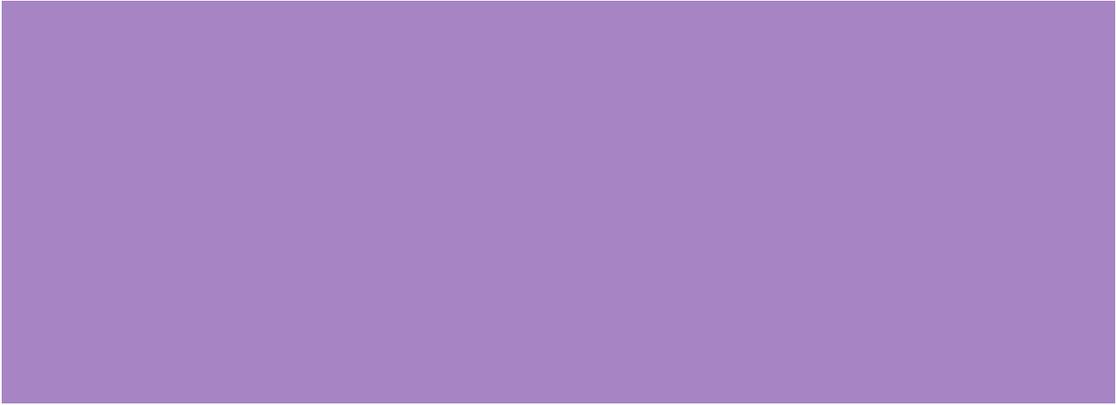






Support and Incentives

Financing



What is out there?

There are many programs available through various partners that can help Westmounters pay for sustainability improvements to their homes and lifestyles. Key support resources come from:

- City of Westmount
- City of Montréal
- Province of Québec
- Utilities: HydroWestmount, Hydro Québec, Gaz Metro
- Private sector

Forms of Support

Helping you finance your upgrades is not the only form of support that is available, although it is primary. Initiatives exist to provide guidance, advice, assessments, or direct improvements either free of charge or at a reduced rate. These incentives and programs help make it easy to take sustainable steps.

Resources for whom?

Support is available for homeowners, renters, and landowners. The following sections describe the resources that are available to each type of Westmount resident



Energy-saving
renovations can
increase the resale
value of your home

Resources for All Residents

[1] Hydro Québec / Hydro Westmount

Receive a cash rebate to get rid of your inefficient refrigerators and freezers.

Type of support: Monetary - Rebate cheque sent by mail within 3 weeks
Value of support: \$60

Conditions:

- Appliance must be working (cooling at the time of pickup)
- Appliance must be over 10 years old
- Appliance volume must be a minimum 10-25 ft³

For more information:

1 877 493-7446 (FRIGO) or www.recyc-frigo.com

www.westmount.org/page.cfm?Section_ID=5&Menu_Item_ID=425&Menu_Item_Sub=426

[/www.hydroQuebec.com/residential/save-energy/understanding-and-taking-action/tips-on-saving/](http://www.hydroQuebec.com/residential/save-energy/understanding-and-taking-action/tips-on-saving/)





Resources for Renters

RENTERS

[1] Éconologis - Québec Ministry of Natural Resources Energy efficiency program for low-income households

Type of support: Advice on energy saving
Free equipment and installation

Value of support: Caulking and weatherstripping windows
Weatherstripping doors
Insulating electrical outlets on external walls
Installing low-flow showerheads
Installing faucet aerators
Installing compact fluorescent light bulbs

Conditions:
Must pay a heating bill
Proof of low-income status
This program is offered from September to March only

For more information:
www.efficaciteenergetique.mrnf.gouv.qc.ca/en/my-home/econologis/

[2] GazMétro Energy Star Windows Program Financial assistance for the purchase of an efficient Energy Star-certified window or door product. Funds cover the cost difference between this efficient product and standard products.

Type of support: Monetary

Value of support: Climate Zone B: \$6/ft² Maximum \$600
Climate Zone C: \$10/ft² Maximum \$1,000

Conditions:
Must complete a Notice of Intent before work, and Request for Payment of Financial Assistance once the work is finished.
Must own or rent a single-family home, duplex, triplex, or condo
Principal heating must be natural gas
Excluded: Homes with dual-energy heating systems or heat pumps
New construction homes



Gaz Métro Climate Zones

For more information:
www.gazmetro.com/residentielactuel/efficaciteenergetique/en/HTML/170_en.aspx?culture=en-ca

Resources for Homeowners

EnerGuide Rating	Home Characteristics
0 - 50	Older unrenovated home
51 - 65	Older renovated home
66 - 74	Home with energy retrofit, or new home
75 - 79	New energy efficient home
80 - 90	New, high energy performance home
90 - 100	Home requiring little or no energy purchases

Number of units	Rénoclimat Subsidy Multiplier
2 - 3	2.0
4 - 6	2.5
7 - 9	3.0
10 - 12	3.5
13 - 16	4.0
17 - 20	5.0

Participants of the Rénoclimat program save 25%, on average, off their annual heating costs

[1] Éconologis - Québec Ministry of Natural Resources Energy efficiency program for low-income households

Type of support:	Advice on energy saving In-kind: free equipment and installation
Value of support:	Caulking and weather-stripping windows Weather-stripping doors Insulating electrical outlets on external walls Installing low-flow showerheads Installing faucet aerators Installing compact fluorescent light bulbs

Conditions:
Must pay a heating bill and provide proof of low-income status
This program is offered from September to March only

For more information:
www.efficaciteenergetique.mrnf.gouv.qc.ca/en/my-home/econologis/

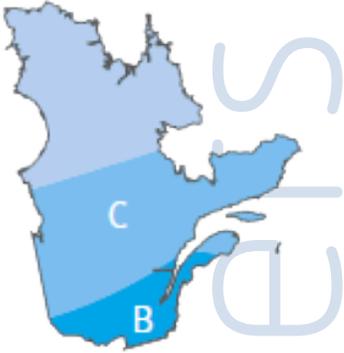
[2] Rénoclimat - Agence de l'Éfficacité Énergétique A subsidy that provides support for energy retrofitting following improvement in "EnerGuide" ratings before and after the project

Type of support:	Advice on energy efficiency improvement Monetary - based on EnerGuide rating improvement
Value of support:	\$35-\$5,365 - Varies by type & quality of home improvement Multi-unit homes receive a subsidy multiplier For a 2-3 unit home, subsidies are doubled 50% off your home energy evaluation (value of \$75-\$450)

Conditions:
Must complete an home energy evaluation before and after renovations
Evaluations must be done by a Ministry-approved Energy Efficiency Advisor
EnerGuide rating must increase by 1+ point(s) after the renovation project
Owners can register more than once for the same home
Home expansions do not qualify
Subsidy can be combined with subsidies from energy providers
Subsidy cannot be combined with other financial assistance from the Ministry

For more information:
www.efficaciteenergetique.mrnf.gouv.qc.ca/mon-habitation/conseils-pratiques/
Association d'Éfficacité Énergétique: 1-866-266-0008

Resources for Homeowners



Gaz Métro Climate Zones

[3] GazMétro - Energy Star Windows Program

Financial assistance for the purchase of an efficient Energy Star-certified window or door product. Funds cover the cost difference between this efficient product and standard products.

Type of support:	Monetary		
Value of support:	Climate Zone B:	\$6/ft ²	Maximum \$600
	Climate Zone C:	\$10/ft ²	Maximum \$1,000

Conditions:

Must complete a Notice of Intent before work, and Request for Payment of Financial Assistance once the work is finished.

Must own or rent a single-family home, duplex, triplex, or condo

Principal heating must be natural gas

Excluded: Homes with dual-energy heating systems or heat pumps

New construction homes

For more information:

www.gazmetro.com/residentielactuel/efficaciteenergetique/en/HTML/170_en.aspx?culture=en-ca

[4] GazMétro - Combo (Water Heater) System

Financial assistance to purchase a Combination Hot Water Space-Heating system. The Combo System provides space heat and hot water by connecting a fan coil for air heating to your water heater.

Type of support:	Monetary	
Value of Support:	Standard tankless water heater:	\$250
	Condensing water heater:	\$550

Conditions:

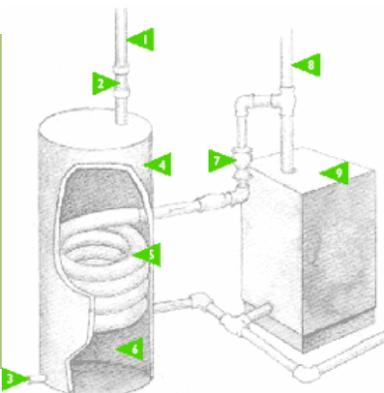
Water heaters capacity must be 150,000-175,000 Btu/h

Must be a GazMétro residential client

Program is best suited for condos and row houses of <1,500 ft²

For more information:

www.gazmetro.com/residentielactuel/efficaciteenergetique/en/HTML/2879411_en.aspx?culture=en-ca



Resources for Homeowners

OWNERS

[5] GazMétro - Superior Efficiency Water Boiler

A financial incentive to facilitate access to Energy Star-certified boilers by paying the cost difference between these high-performance units and standard models.

Type of support: Monetary and in-kind
Value of support: \$700, plus a free evaluation

Conditions:

Boilers must be under 300,000 Btu/h

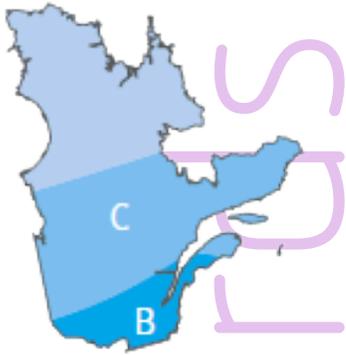
A service contract must be signed with Gaz Métro or an Certified Partner before the installation of the appliance.

For more information:

www.gazmetro.com/residentielactuel/efficaciteenergetique/en/HTML/168_en.aspx?Culture=en-CA

20-year-old central heaters are only about 70% efficient. High-efficiency appliances offer up to 95% efficiency

Resources for Landlords



Gaz Métro Climate Zones

[1] GazMétro - Energy Star Windows Program

Financial assistance for the purchase of an efficient Energy Star-certified window or door product. Funds cover the cost difference between this efficient product and standard products.

Type of support:	Monetary		
Value of support:	Climate Zone B:	\$6/ft ²	Maximum \$600
	Climate Zone C:	\$10/ft ²	Maximum \$1,000

Conditions:

Must complete a Notice of Intent before work, and Request for Payment of Financial Assistance once the work is finished.

Must own or rent a single-family home, duplex, triplex, or condo

Principal heating must be natural gas

Excluded: Homes with dual-energy heating systems or heat pumps

New construction homes

For more information:

www.gazmetro.com/residentielactuel/efficaciteenergetique/en/HTML/170_en.aspx?culture=en-ca

[2] GazMétro - Condensing Water Heater Installation

A financial incentive to facilitate your access to a condensing water heater and reduce the cost difference between a high performing unit and the basic model.

Type of support:	Monetary		
Value of support:	Standard tankless water heater:		\$250
	Condensing water heater:		\$550

Conditions:

Condensing water heater must have a combustion efficiency >90%

Must be a Gaz Métro residential client

Program is best suited for condos and row houses of <1,500 ft²

For more information:

www.gazmetro.com/affaireactuel/efficaciteenergetique/en/HTML/207_en.aspx?Culture=en-CA

Condensing water heater energy savings:

>10% compared to models with an efficiency of 80%

>12% compared to models with an efficiency of 78%

Resources for Landlords

Landlords

[3] GazMétro - Energy Efficient Renovations Program

Financial assistance to encourage renovations that will improve the thermal envelope of buildings to make them more energy efficient.

Type of support: Monetary
Value of support: Max: \$40,000 (annual gas consumption <150,000 m³)
Max: \$100,000 (annual gas consumption >150,000 m³)

Natural Gas Saved	Cash Back
5% or less	\$0.50/m ³
5.1% - 7.5%	\$0.60/m ³
7.6% - 10%	\$0.70/m ³
10.1% - 15%	\$0.80/m ³
15.1% or more	\$0.90/m ³

Conditions:

The renovation work must exceed the Model National Energy Code for Buildings 1997 (MNECB)

Eligible work includes: replacing the windows, insulating the walls, insulating the roof, sealing the building, installing thermal screens for greenhouses.

Intended for current or about-to-be Gaz Métro clients

Work that involves eliminating air leakage must be for the whole building

Assistance may not be >50% of the investment costs

Requests <\$500 are not eligible

The building must be supplied with natural gas

For more information:

www.grandesentreprises.gazmetro.com/grandeentreprise/efficaciteenergetique/en/html/3270375_en.aspx?culture=en-ca

Resources for Landlords

Landlords

[4] GazMétro - Solar Heating Program

A financial incentive for the acquisition and installation of a solar heating system for space and/or water heating. The Program is intended for owners or renters of buildings with four or more units.

Type of support: Monetary
Value of support: \$3/m³ of natural gas saved
Max: \$300,000, up to a limit of 75% of the project cost

Conditions:

The customer must use natural gas for space and/or water heating.

The customer must use the RETScreen simulation tool.

The equipment installed must be certified to CAN/CSA-F378/CAN/CSA F-378.

For more information:

www.gazmetro.com/affaireactuel/efficaciteenergetique/en/HTML/3270374_en.aspx?culture=en-ca

[5] PAIESO - Québec Ministry of Natural Resources

The programme d'aide à l'installation d'équipements solaires opérationnels (PAIESO) is an incentive for the installation of solar systems in municipal, institutional, commercial, industrial and agricultural buildings.

Type of support: Monetary
Value of support: The lesser of:
\$ 300,000

50% of the total project cost for solar thermal equipment

75% of the total project cost for solar photovoltaic equipment

Amount needed to reduce the investment payback to 3 years

Initial amount requested at the project proposal preparation stage
Maximum based on sensor area: ranging from \$6/watt to \$275/watt

Conditions:

Preheating domestic hot water is excluded from the program

Project must be completed within two years of application with the Ministry

Project must reduce consumption of heating oil, natural gas, diesel, gas, propane or butane

For more information:

www.efficaciteenergetique.mrnf.gouv.qc.ca/?id=566

Resources for Landlords

Landlords

[6] PAIMEB - Québec Ministry of Natural Resources

The Programme d'Aide à l'Implantation de Mesures Efficaces dans les Bâtiments offers financial incentives to reduce your consumption of heating oil or propane.

Type of support: Monetary
Value of support: Phase 1 Feasibility - 50% of costs up to \$ 7,500
Phase 2 Implementation - \$10/GJ* saved up to 75% of costs
* \$10/GJ is roughly equal to \$0.39/L oil or \$0.26/L propane

Conditions:

- Existing buildings must be 4 or more storeys
- The building must have used light oil or propane for at least 1 year
- Minimum savings of 50 GJ or 25,000 kWh per year is needed
- The project must involve capital investment not simply maintenance or behaviour modification

For more information:

www.efficaciteenergetique.mrnf.gouv.qc.ca/en/business-clientele/institutions/programme-daide-a-limplantation-de-mesures-efficaces-dans-les-batiments/

