

The "Future-Proofed" Home: Energy Efficiency For the Aging Demographic



Which is More Efficient?



???



???

Which is More Efficient?



9.05L/100km



11.76L/100km

Which is More Efficient?



???



???

Which is More Efficient?



A



B

Outline

1. City Green Introduction
2. BC Retirement Housing Market Trends
3. Energy Efficient Home Designs and Features Benefit an Aging Demographic
4. Energy Labelling and Rebate Programs
5. What about your current home?

City Green Solutions

Non-profit organization with a mission to excite, inspire, and lead British Columbians in taking both simple and extraordinary actions to reduce energy use in homes and buildings.

What We Do

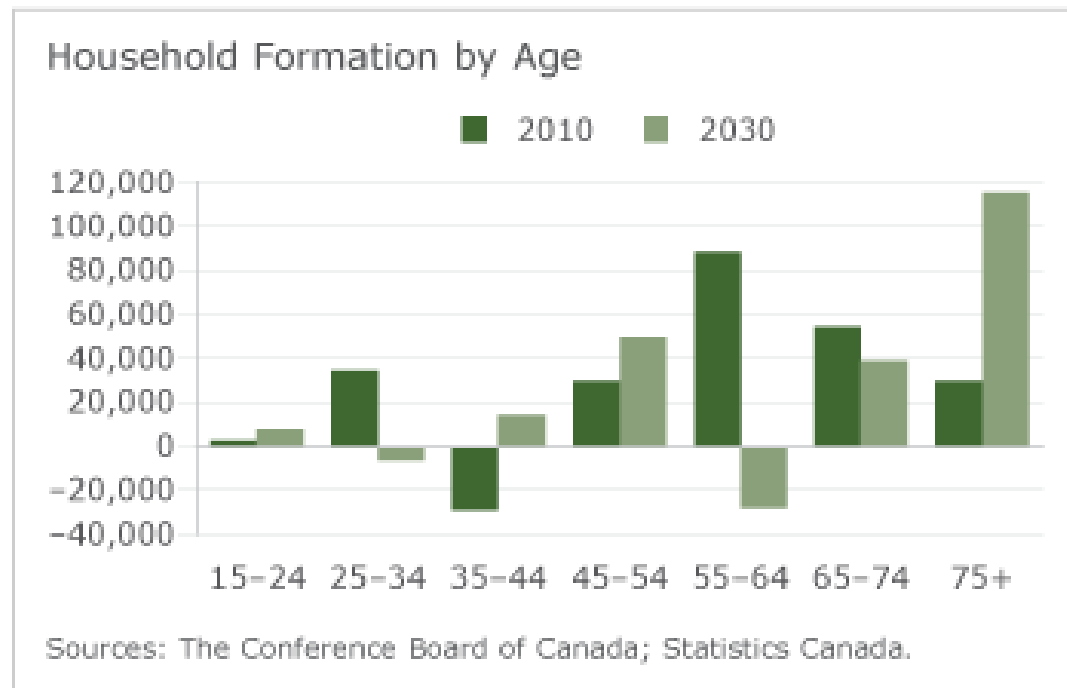
- Energy modelling for new and existing homes
- Energy assessments for commercial and institutional buildings
- Thermal imaging services
- Sustainability assessments for businesses
- Energy management services
- Customized energy efficiency outreach programs
- Research and evaluation services
- Education and training



What is “Future Proofing”

Demographic Trends: The Silver Tsunami is on the Horizon

- By 2030, four out of every five new households will be formed by people in their golden years (65 and over).



BC Retirement Housing Market Trends

- Aging in place
- Metro Vancouver Municipalities, exploring:
 - seniors residences
 - laneway housing
 - secondary suites
- New rancher style townhouses, age in place on one level

Prime Considerations

- Location
 - Place
 - Amenities
- Comfort
 - Indoor Air Quality
 - Reduced drafts
- Affordability
- Accessibility

Focus on the Smaller Home

- Laneway Housing in Vancouver: From 146/year in 2011 to 350/ year in 2012



Pictures Courtesy of Smallworks
Laneway Housing Inc.

Energy Efficient Home Designs Features for an Aging Demographic

- Smaller homes
- Single floor, open concept plans
- High efficiency heating systems
- Well air sealed
- Appropriate ventilation
- Built to maximize accessibility
- Location:
 - Close to family
 - Close to amenities
 - Close to public transportation options



Benefits: Energy Efficient Home

- **Comfort** (consistent temperature throughout home)
- **Affordable energy bills**
- **Good indoor air quality** (healthy, fresh, clean air)
- **Reduced moisture issues** (no mold, leaks, condensation)
- **Soundproof** (well insulated and quiet)

Smaller Home – Laneway Housing

- Potential to utilize existing residential lot (owned by individual or family). Lower costs and rental revenue potential



Smaller Home – Laneway Housing

- Multigenerational living – independent space and close to family



Picture Courtesy of Smallworks
Laneway Housing Inc.

Example: Smaller Home: One Level Rancher

- One level rancher



- Open concept homes with wider (34") doorways and hallways – enhance accessibility
- Conducive to mini ductless air source heat pumps





Mini Split Ductless ASHP



GO DUCTLESS AND GO TO YOUR
COMFY PLACE.

Upgrade to a ductless heating and cooling system and you can enjoy more than year-round comfort in your home. You can feel good about saving 25-50% on your electric heating bill.



DUCTLESS
HEATING & COOLING SYSTEMS

CityGreen
Solutions

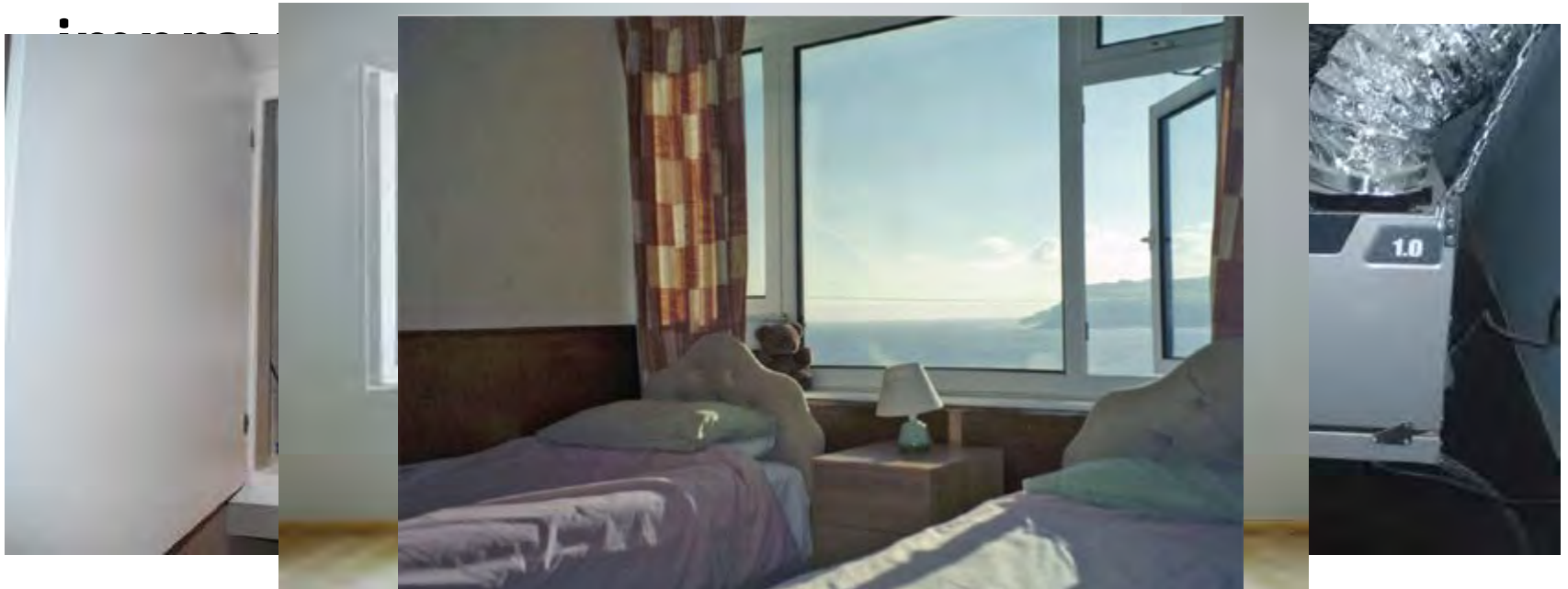
Example: Mini Split Ductless ASHP

- **Main benefit:** Reduction in heating load (3.5 times more efficient than base board heating)
- **Unique features:**
 - No ducting required
 - Highly marketable and desirable heating system
- Ultra quiet fans evenly circulate air throughout rooms, eliminating hot and cold spots.
- **Best application:** Open concept floor plans
- **Approx Cost:** \$ 1500-3000
- **EG Rating Increase Range:** ~5-9



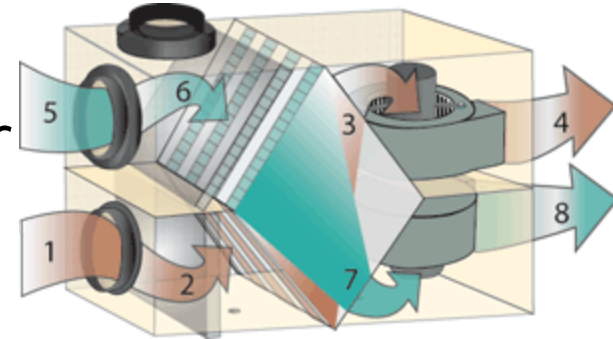
Example: HVR

- Heat Recovery Ventilators are about comfort, but also allow for energy savings and



HRV-For Comfort

- Main benefit: Continual Fresh Air
- Unique feature: Better IAQ
- Best application: Air Tight homes
- Approx. Cost: \$4500-6000
- EG Rating Increase Range: ~1*
- ROI Potential: Low*



Example: Front-Loading Washers and Dryers

- Good for ease of access
- High efficiency



Resources – Accessibility

- SAFERhome Standards
 - 19 point standards
 - Focuses on accessibility & aging in place
 - Endorsed by HPO, BC Housing, ASTT, TOL, Maple Ridge

\$19.95



SAFERhome Standards Manual

How to easily build to the 19-point Standards

Written for Designers, Builders & You!

"Cities cannot be sustainable unless the homes within them are."

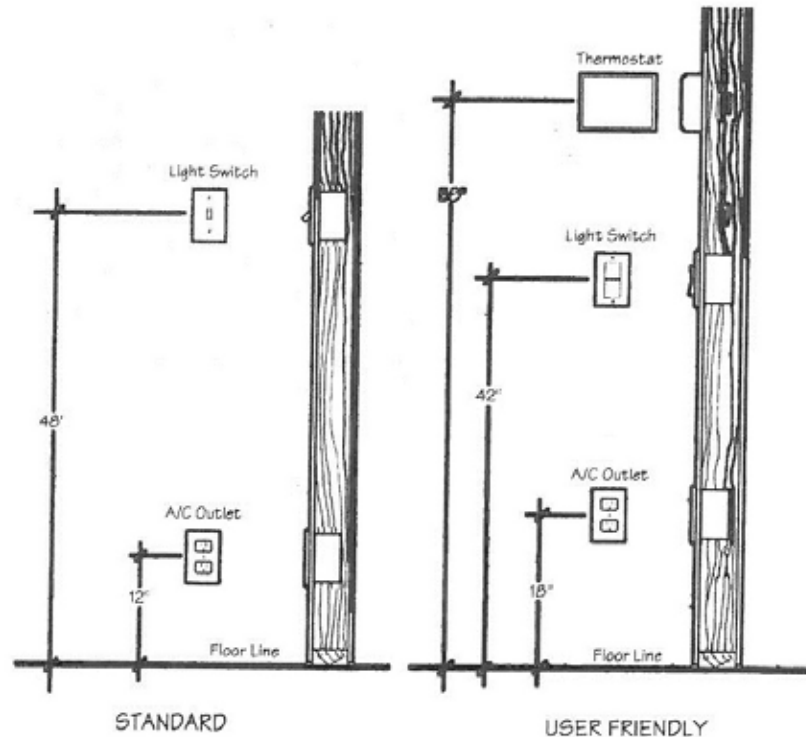


Patrick Condon
University of British Columbia
Faculty of Landscape Architecture



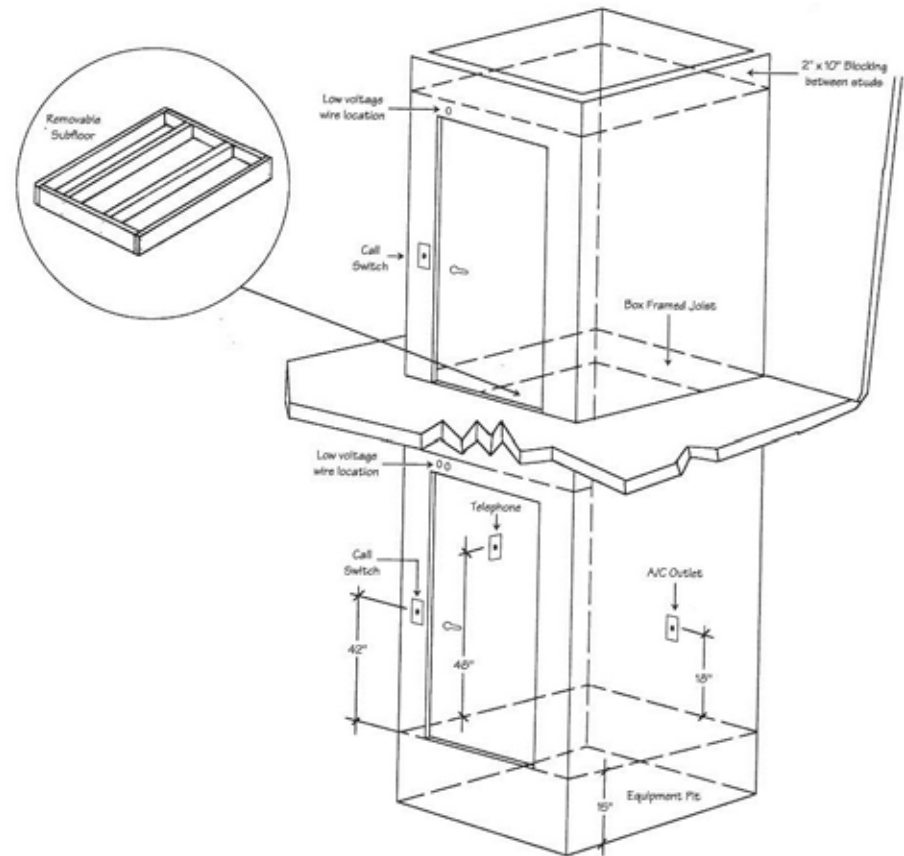
SAFERhome Examples

- Raising A/C Outlets from 12" – 18"



SAFERhome Examples

- Stacked closets for future elevator installation
 - “The cost of building in a future elevator shaft is only a few hundred dollars during new construction and about \$80,000 on average to retrofit or renovate”

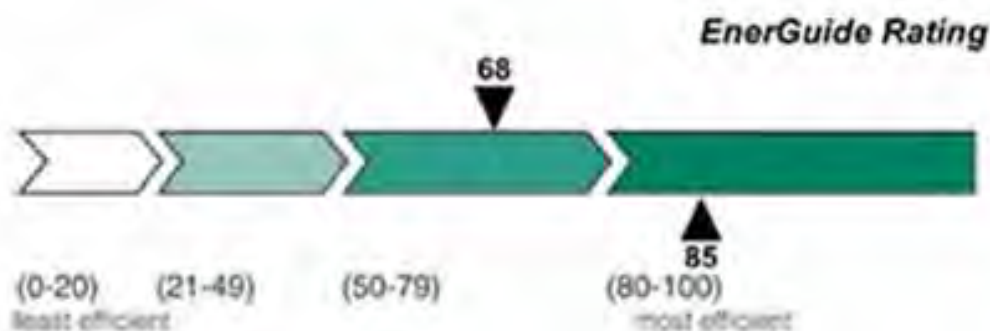


Energy Efficiency

- A universal design feature for retirement housing
 - Comfort
 - Affordability
 - Accountability

EnerGuide Rating System

- The EnerGuide Rating System (ERS) is Natural Resource Canada's system for the energy rating and labelling of products and homes.
- Can be used to compare energy performance across homes.
 - A rating of 0 represents a home with extremely high energy consumption.
 - A rating of 100 represents a house that requires no purchased energy on an annual basis (Net Zero).
- Next Generation: Flipped for 0 to represent 'Net Zero' and energy consumption figure to be more prominent.



EnerGuide Rating Service

- Delivered by **Certified Energy Advisors** working with Service Organizations licensed by the federal government.
- Provides building science-based, **prioritized and quantified energy saving options** to builders, developers, and architects.
- Provides **third-party verification of energy performance** which can be used by builders, planners, and homebuyers.
- Foundation of the ENERGY STAR for New Homes Initiative



Resources – Labeling Programs

- EnerGuide 80+
- ENERGY STAR for New Homes
- Marketing recognition



ENERGY STAR for New Homes Initiative

Labelling program to recognize and promote best-in-class energy efficient new home construction.

Eagle Pacific Developments, View Royal, BC



Resources: BC Hydro Power Smart Rebates for Builders

	Single Family Dwelling	Row House / Town House	Multi-Family Dwelling
EnerGuide 80+	\$2000	\$200	-
ENERGY STAR Package	Up to \$200	Up to \$200	Up to \$200
Per unit	Up to \$2200	Up to \$400	Up to \$200

Financial support for advertising and in-kind promotion from BC Hydro also available.

Contact City Green or another service organization to qualify.

Fortis BC Power Smart Rebates for Builders

- New Rebate program- Released July 2012
 - \$200 for a Gas Fired Storage tank with an EF of 0.67 or higher
 - \$400 for a Gas Fired Non-condensing Tankless system
 - \$500 for a Gas Fired Condensing Tankless system
 - \$1000 for a Gas Fired Condensing Storage tank
 - \$1000 for a Gas Fired Condensing boiler
- New Fireplace rebate for EnerChoice NG Fireplaces
 - \$300 for *each* EnerChoice qualified fireplace

But what about your home you live
in now?

Book a Home Energy Assessment to:

- Know which upgrades will reduce your energy use the most.
- Receive a customized Energy Efficiency Evaluation Report and [EnerGuide rating](#) for your home.
- Access financing and rebates, including [LiveSmart BC grants](#)
- Find solutions for high energy bills, drafts, molds, stuffiness, outside noise, and other home problems.

Home Energy Assessments

Assessments are performed by Certified Energy Advisors working with Service Organizations licensed by the federal government.

Advisors are educators - not salespeople.



Home Energy Assessment

In the first assessment, your Advisor will speak with you about **your priorities** and concerns, and **gather information** about your home's current energy efficiency in order to generate customized, prioritized energy savings recommendations for you.



Blower Door Test

Using a Blower Door, your advisor will measure the air exchange in your home to find out whether your home is too leaky or too tight.



Blower Door Test

While the fan is running, you can feel exactly where your home is leaking air.



Blower Door Test



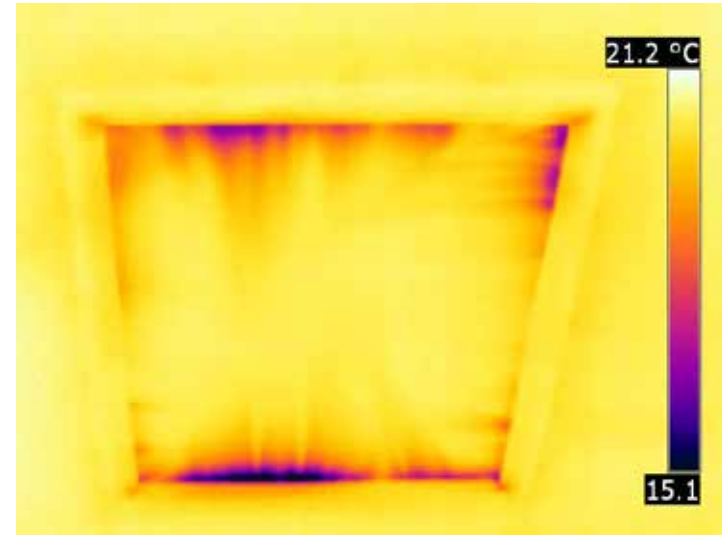
The average 20 year old home has leaks that would add up to a round hole 16 inches across. Left unsealed, these leaks are like leaving a small window open all year round, making the home drafty and more expensive to heat. Your advisor will provide recommendations for how to fix the leaks in your home.

Common Air Leakage Areas



Around windows

Common Air Leakage Areas



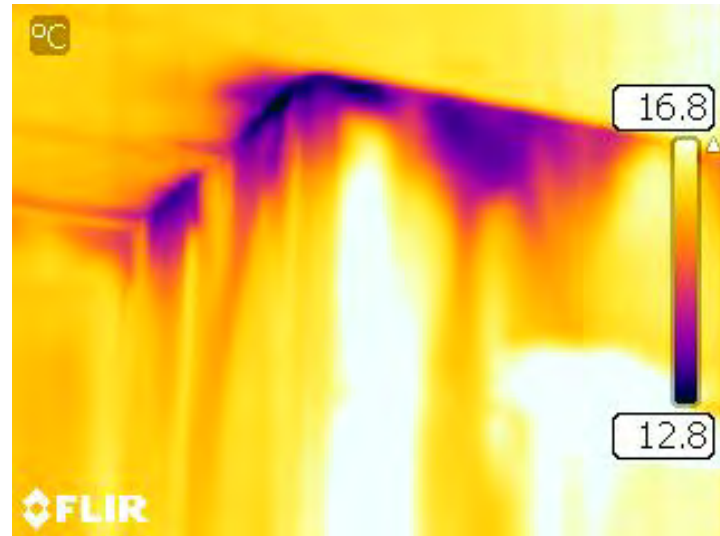
Attic Hatch

Common Air Leakage Areas



Chimney Masonry

Common Air Leakage Areas



Interior Partition Walls

Insulation Level Evaluation



Your advisor measures your insulation and uses data from building codes when your home was constructed to determine your home's insulation levels.



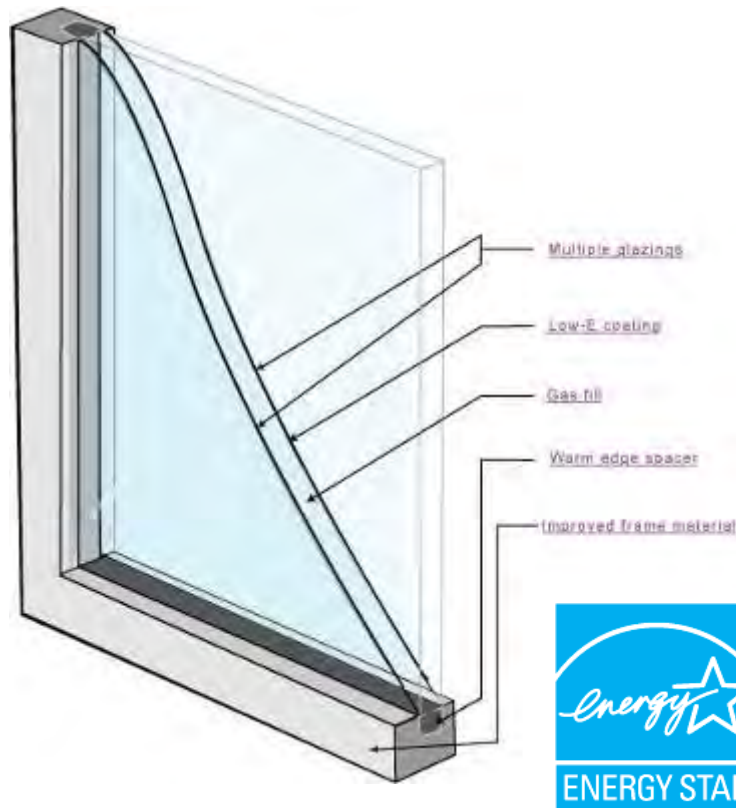
Insulation upgrades can make a big difference. For instance, you can save 20% or more of your home's energy use through upgrading an uninsulated concrete basement wall.

Window and Door Evaluation



Your advisor will check the efficiency of your current windows, exterior doors, and skylights.

Window Efficiency



Multiple panes, insulated spacers and frames, low-e coating, and proper air sealing to your building envelope all make a big difference to the comfort and energy performance of your windows. Look for ENERGY STAR® qualified windows.

Home Energy Assessment

Space and water heating system evaluation



Older heating systems may be wasting more than 30% of their fuel. Efficient systems convert up to 90% or more of their fuel source into heat. Your advisor will let you know how much energy you can save by upgrading.

After Your Assessment

Your Advisor prepares and issues a report with **prioritized, customized recommendations for improving your energy efficiency**, and lets you know which upgrades qualify for grants.





Examples of Selected Grants

Retrofit	LiveSmart BC
Air Sealing	\$400
Attic Insulation	\$600
Wall Insulation	\$1200
Basement Insulation	\$1000
Crawlspace Wall Insulation	\$800

Questions?

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