

# PROGRAM-QUALIFIED ENERGY ADVISOR RESIDENTIAL RENOVATION



## BEST PRACTICES GUIDE VERSION 4.1 – October 2022

This 'Best Practices Guide' has been **updated to for the October 01 2022 Program Updates** for the CleanBC Better Homes and Home Renovation Rebate Programs. This guide complements the PQEA Training Manual. Contact [pgea.admin@betterhomesbc.ca](mailto:pgea.admin@betterhomesbc.ca) for information or questions about this manual.



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## PQEA – BEST PRACTICES

The Program-Qualified Energy Advisor (PQEA) best practices summarized below complement the standard delivery of the EnerGuide Rating System (ERS) Renovation Upgrade Service, without adding time or cost to the evaluation. The best practices help to ensure applicable programs are delivered in a timely and effective manner, benefiting the Energy Advisor (EA), homeowner, and the program sponsors.

Category	Best Practices	Learning Objectives	Study Resources
<b>Homeowner Interaction</b>	Determine home issues & homeowner motivations	Explain how to effectively collect homeowner motivations, home issues and concerns, renovation plans, and household operating conditions.	PQEA Best Practices Guide
	Engaging homeowners	Describe when an EA/SO should refer their clients to the CleanBC Energy Coach Service.	PQEA Training Manual CleanBC Better Homes website CleanBC Better Buildings website
	Inform about available rebate programs	How to engage homeowners about available rebate and financing programs they may be interested in.	PQEA Training Manual CleanBC Better Homes website CleanBC Better Buildings website
	Customer service delivery expectations	NRCan requirements and summary best practices.	PQEA Best Practices Guide
<b>Draftproofing</b>	Draftproofing prioritization	Understand how to prioritize draftproofing recommendations including the building science involved.	ERS Technical Procedures PQEA Best Practices Guide Best Practice Guide for Air Sealing and Insulation Retrofits
		Communicate the benefits of draftproofing.	PQEA Best Practices Guide
<b>EnerGuide Rating Reports</b>	Motivational & impactful recommendations	Explain how homeowner motivations, home issues and concern, renovation plans, and information gathered from the household operating conditions can be used to develop and prioritize upgrade recommendations.	PQEA Best Practices Guide HOT2000 User Guide
	ERS Rating & label	Explain the value and benefits of the ERS Rating label.	PQEA Best Practices Guide
<b>Wrap Up Activities</b>	PQEA responsibility	Identify the EA responsibility for level of homeowner communication are the energy evaluation.	ERS Technical Procedures
	Contractor selection	Advising homeowners on selecting the right contractor.	PQEA Training Manual CleanBC Better Homes website CleanBC Better Buildings website
	Program registered contractors (PRC) – residential insulation	Understand what this is and where the list is hosted. Identifying where consumers can be directed to find PRCs.	PQEA Training Manual CleanBC Better Homes website CleanBC Better Buildings website
	Home Performance Contractor Network (HPCN) – residential heat pumps	Understand what this is and where the list is hosted. Identifying where consumers can be directed to find HPCNs.	PQEA Training Manual CleanBC Better Homes website CleanBC Better Buildings website
	HOT2000 knowledge	Know how to use the HOT2000 Program Identifiers for BC programs.	PQEA Training Manual

## BEST PRACTICE: HOMEOWNER INTERACTION

### Context

Incorporating basic energy coaching principals into the ERS home evaluation will enhance the homeowner experience and potentially increase the uptake in rebate programs, energy savings and participant satisfaction.

Your role as a PQEA is to be a source of accurate information for the homeowner, who is looking for reliable information about energy-saving measures. **The goal of the Renovation Upgrade Service, and the PQEA initiative, is to educate and coach the homeowner while providing sufficient information so that the homeowner feels confident and knowledgeable when proceeding with the upgrade recommendations.**

PQEA best practices for engaging homeowners include:

- Determining Home Issues & Homeowner Motivations
- Engaging Homeowners
- Informing Homeowners About Available Incentive Programs

### Determining Home Issues & Homeowner Motivations

When considering the most appropriate home renovation upgrade recommendations, best practices suggest that Energy Advisors must fully consider the homeowners' questions, concerns, motivations and priorities regarding home energy upgrades. It is much more likely that a homeowner will decide to complete one or more energy upgrades if an energy advisor can help the homeowner solve energy efficiency-related issues they have with their home or provide upgrade recommendations that fit with specific and relatable personal motivations or priorities.

#### Examples: Common Home Issues and Concerns

Homeowners may have one or more of the following common home issues and concerns:

1. **My energy bills are too high**
2. **Parts of my home are too warm** in the summer (e.g. top floor bedrooms too warm to comfortably sleep in)
3. **Some areas of my home are too cold or drafty** (e.g. cold floors, cold room above garage, drafts near windows, fireplaces, or other locations)
4. **Parts of my home have issues with condensation, mold, or musty odors** (e.g. mildew on clothes in closets, foggy windows, mold around window frame, condensation during colder months, etc.)
5. **Outside noise is an issue inside** (e.g. noise from streets or neighbours is clearly heard indoors)
6. **Older mechanical systems** (e.g. furnace or boiler is old and may be unreliable or there is concern about it being near end of life)

## Examples: Homeowner Motivations, Goals, and Priorities

Homeowners may have one or more of the following common homeowner motivations, goals, or priorities:

1. **Improve indoor air quality** (moving from stuffy, dusty, overly moist or dry conditions to fresher and cleaner indoor air, including for those with allergies or breathing conditions)
2. **Access retrofit rebates/incentives** (to save money on energy upgrades)
3. **Improve home resale value**
4. **Keep my upgrade budget small** (upgrade insulation, air sealing)
5. **Tackle energy upgrades that I can do on my own** (Do-It-Yourself)
6. **Make best investments for long-term savings** (realize best return on investment for dollars spent)
7. **Reduce greenhouse gas emission as much as possible** (e.g. strive for Net Zero Carbon, Passive House standards, or electrify space and water heating)
8. **Preserve heritage features** while saving energy (restoring wood doors, windows, carefully air sealing while adding ventilation, etc.)
9. **General maintenance for home integrity** (basic home energy improvements to keep my building envelope in good shape, e.g. air sealing: stopping moist air from getting into a cold attic and creating issues with mold; keeping moisture out of my walls)
10. **Planned renovation or home improvement project:** many renovation projects can either impact home energy use or introduce opportunities to improve the energy efficiency of the home (for example: adding space to your home, moving or eliminating walls, installing new windows, new roof, upgrading drainage tile, renovating your kitchen or bathroom, renovating your basement, etc.)

## Engaging Homeowners in the Home Energy Evaluation

There are a variety of ways to engage homeowners in an energy evaluation and to determine home issues and concerns and/or homeowner motivations and priorities. A questionnaire or survey can be used, or individual Energy Advisors can apply energy coaching techniques to engage homeowners directly in a conversation about their home.

Techniques for engaging homeowners include:

**Your Experience:** use your building science knowledge and field experience about common issues and concerns people have with their home to ask probing questions. Some examples are provided below. Please note that these example questions and recommendations are general in nature and would need modification to fit the specific house conditions of any given home.

- When seeing a bedroom in a mostly unfinished basement with an uninsulated foundation and basement walls, ask: *“Is it cold for sleeping in this area in the winter?”*
  - If they say yes, an example response may be: *“Draftproofing and insulating your foundation and basement walls would make this area much more comfortable in the winter.”*
- When seeing a 1940’s two story home with a poorly insulated attic, ask: *“Does it get too hot for sleeping in the summer in the upstairs bedrooms?”*

- If they say yes, an example response may be: *“Insulating your attic, draftproofing the ceiling and around the upstairs windows, and adding a ventilation fan to the upstairs bathroom will help keep your upstairs bedrooms from overheating in the summer. When replacing your heating system, consider switching to an air source heat pump for heating and air conditioning in one system.”*
- When seeing rooms over a garage in an older home, ask: *“Does it get cold in this area in the winter?”* or, *“are the floors in this room really cold in the winter?”*
  - If they say yes, an example response may be: *“Properly draftproofing and insulating the floor above the garage will make the room much more comfortable and make the floors much warmer.”*
- When seeing single-glazed windows or windows with aluminum frames, ask: *“Is there condensation on the glazing/frames in the fall and winter?”*
  - If they say yes, an example response may be: *“Replacing the windows with high efficiency double or triple pane windows will reduce the likelihood of condensation greatly and will improve the comfort for the rooms they are installed in.”*
- When seeing a busy road, school or playground in front of the house, ask: *“Can sound from the road be heard inside?”*
  - If they say yes, an example response may be: *“Draftproofing, insulating uninsulated walls, and upgrading your single-glazed windows will greatly improve the soundproofing of your home.”*
- When seeing a home with a growing family of young kids sharing bedrooms and there is an unfinished or partially finished uninsulated basement, ask: *“Are you planning on renovating this basement space to create more living space?”*
  - If they say yes, an example response may be: *“Basement renovations are often excellent opportunities for energy efficiency upgrades. When getting quotes from contactors ask for them to provide quotes for draftproofing and insulating the foundation and basement walls. Adding a ductless heat pump will provide zonal heating and cooling with independent system controls”*
- When seeing signs of condensation on the windows, ask: *“How often do you use bathroom and kitchen fans?”*
  - If they say not often, an example response may be: *“Control the humidity level in your house by using the bathroom and kitchen fans regularly. Installing a humidistat is often a good idea, as then the bathroom fan will come on automatically when the humidity is too high”*
- When seeing a likely oversized furnace, ask: *“Do you feel hot when the furnace comes on and cold after it turns off?”*
  - If they say yes, an example response may be: *“The variable temperatures you are experiencing may be due to an oversized furnace, and it does not have variable speed capabilities. Upgrading to an appropriately-sized, and high efficiency heat pump will greatly increase your home comfort and provide you with much more consistent and even heat. Before upgrading to a heat pump it would be best to complete the insulation and air sealing upgrades I am recommending in your EnerGuide report.”*
- When assessing an older house with uninsulated walls, ask: *“Do you feel cold when you’re sitting close to the exterior walls?”*

- If they say yes, an example response may be: *“Insulating your walls will increase the inner surface temperature of your wall and significantly improve the comfort of this room.”*
- When assessing a newly insulated attic and seeing mold on the underside of the roof sheathing, ask: *“Did the insulation contractor perform air sealing prior to installing the insulation?”*
  - If they say no, an example response may be: *“You may want to address the air leakages into your attic because escaping moist air from the house is now more likely to condensate in your attic than before.”*
- When seeing a large number of indoor plants, indoor laundry drying racks, or aquariums, ask: *“Do you experience any condensation problems in the shoulder seasons (spring and fall)?”*
  - If they say yes, an example response may be: *“Indoor plants, indoor laundry drying, and aquariums generate a lot of humidity, which will likely condensate on windows (even if there are new), behind furniture in front of exterior walls and in corners. To minimize condensation and potential issues with excessive indoor moisture, try to stop, or minimize, drying clothes indoors and consider upgrading your bathroom and range hood ventilation fans to energy efficient and quiet models.”*
- When seeing a large number of lights in areas of the house that don’t benefit from natural light, ask: *“Are these areas getting uncomfortably warm when the lights are on?”*
  - If they say yes, an example response may be: *“Incandescent light bulbs generate a lot of heat. You may want to think of ways of getting natural light into this area or may want to replace the bulbs with LED light bulbs.”*

**Active Listening:** be an active listener whenever the homeowner is speaking. Hear what they say and use it to inform your dialogue and guide the questions you ask. Active listening tips include:

- **Listen more and speak less:** Don’t get so busy with talking and with thinking about what you want to say that you don’t have any time to listen. Generally, people like it when the individual they are speaking to is genuinely interested in what they have to say.
- **Pay attention:** Give the speaker your undivided attention and acknowledge the message, look at the speaker directly, don’t interrupt and watch the speaker’s body language.
- **Show that you are listening:** Use your own body language and gestures to convey your attention by nodding occasionally, smiling and using other facial expressions, maintaining an open and inviting posture. Provide small verbal comments such as “yes” and “uh huh.”
- **Be a solutions-oriented listener:** Hear what they are saying and use this information to advance your dialogue about recommendations.
- **Provide feedback:** As a listener, your role is to understand what is being said. This may require you to reflect what is being said and ask questions or if useful, to summarize the speaker’s comments.
  - Reflect what has been said by paraphrasing. *“For my own understanding, what I’m hearing is,”* and *“Sounds like you are saying,”* are great ways to reflect back.
  - Ask questions to clarify certain points. *“What do you mean when you say...?”* or *“Is this what you mean...?”*

**Dialogue:** use what you see in the home, what you hear from the homeowner and your observations about the homeowners to ask prompting questions (as above). Tips for a productive dialogue include:

- **Avoid using acronyms and technical or building science jargon** that may confuse the homeowner. Instead, explain things in a relatable manner.
- **Use stories of successful home energy improvements** of your past clients that will be relevant and informative. For example, *“My clients often tell me that one of the most pleasant and unexpected benefit of installing new windows was how much quieter their home became after the upgrade. They didn’t realize how much an impact new windows would have and how much they would enjoy a quieter home.”*

**Involve the Homeowner(s) and Decision Makers:** Involving the homeowners and decision makers is a productive way to maintain the homeowner’s emotional connection to the process (you are advising them on how to make their home more enjoyable to them, not just more energy efficient). Options for maintaining the homeowner’s emotional connection in the process include:

- **Involving the Homeowner:** include the homeowner in parts of the evaluation when appropriate:
  - During the blower door test have the homeowner walk around the home with you and feel the air leakage. You may say, for example, *“The draft you feel when you are sitting at the kitchen table is likely from this spot here...”*
  - Explain what you are observing. For example, when looking in the attic you may say: *“I see that you only have R12 insulation in the attic. You were telling me that it gets hotter in the summer and colder in the winter than you would like. Increasing your attic insulation to R40 or R50 would certainly keep your home at a more consistent and pleasant temperature year round.”*
- **Involve All Homeowners:** when possible, aim to get input from all decision makers (for instance, both partners) on home issues and motivations. The two homeowners/decision makers may have different priorities and/or concerns/issues with the home so only talking to, or hearing from, one of the homeowners may not provide the intended results.

**Rank and Prioritize:** Directly ask the homeowners/decision makers to help you prioritize and rank home issues and concerns or personal motivations and priorities. For example:

- *“It sounds like there are multiple opportunities to improve the energy efficiency of your home, which of these opportunities is most important for you to address first?”*
- *“If you could fix one home energy related issue, which would be most important to fix first?”*
- *“You’ve told me your top two priorities are keeping your energy bills low and shrinking your environmental footprint. Out of the two priorities – which is most important?”*



## Available Rebate and Financing Programs

Informing homeowners about all rebate and financing programs they may be eligible for ensures homeowners have the information they need to make energy retrofit decisions that will maximize energy savings within their budgets. The [BetterHomesBC.ca](https://betterhomesbc.ca) website includes a Rebate Search Tool (<https://betterhomesbc.ca/rebate-search-tool/>) that lists available rebate programs by location, product and home heating fuel type. Be sure to inform homeowners of this resource so that they can do their own investigation and research the rebate programs available to them.

### Current Program Information

It is very important to program qualified energy advisors to stay informed of current program requirements as requirements, rebate amounts, and rebate availability change regularly. The links below provide the current program information.

Program	Summary
<a href="#">CleanBC Better Homes and Home Renovation Rebate Programs</a>	The CleanBC Better Homes and Home Renovation Rebate Programs, administered by <a href="#">BC Hydro</a> , <a href="#">FortisBC</a> and the Province of BC, provides rebates for improving your home's energy efficiency through select upgrades including heat pumps, insulation, electrical service upgrades, windows and doors, and more.
<a href="#">CleanBC Income Qualified Program</a>	The CleanBC Better Homes Low-Interest Financing Program provides loans with a promotional interest rate of 0% for switching from fossil fuel (oil, propane or natural gas) heating system to a heat pump.
<a href="#">CleanBC Low-Interest Financing Program</a>	Based on the occupant's household income, the CleanBC Income Qualified Program offers enhanced rebates to make energy-saving home upgrades more affordable.

### Program Resources and References

- The CleanBC Better Homes and Home Renovation Rebate Programs are updated on a semi-annual basis on October 01 and April 01. For historical program information, see the [What Rebates are Available FAQ](#) on BetterHomesBC.ca
- The [What do the CleanBC Better Homes and Home Renovation Rebate Programs define as my Primary Heating System FAQ](#) provides guides guidance in determining home eligibility.
  - Homes that rely on natural gas furnaces for space heating and do not meet the Minimum Electrical Consumption threshold for BC Hydro rebates can request an exemption from [betterhomesbc@gov.bc.ca](mailto:betterhomesbc@gov.bc.ca) to participate in the program.
- Select rebates require working with a registered contractor.
  - **CleanBC Better Homes and Home Renovation Rebate Programs**
    - As of April 01 2021 homeowners are required to work with a Program Registered Contractor to access insulation rebates.
    - As of July 01 2022 homeowners are required to work with a Home Performance Contractor Network member to access heat pump rebates.
    - Contractors can be found at <https://betterhomesbc.ca/find-a-contractor/>
  - **CleanBC Income Qualified Program**
    - Participants must work with an Income Qualified Program Contractor
    - Contractors can be found at <https://betterhomesbc.ca/iqp-registered-contractors/>

- **CleanBC Low-Interest Financing Program**
  - Participants must work with a Finance Registered Contractor
  - Contractors can be found at <https://betterhomesbc.ca/frc/>
- Commercial programs for multi-unit residential buildings can be found at [BetterBuildingsBC.ca](https://BetterBuildingsBC.ca).

## Customer Service Delivery Expectations

As described in the Natural Resource Canada (NRCan) ERS Administrative Procedures: The Energy Advisor must inform the homeowner that they will receive the EnerGuide label and relevant reports within 14 calendar days of the on-site home energy evaluation.

## BEST PRACTICE: DRAFTPROOFING

### Air Sealing (Draftproofing) Upgrade Considerations

List the more significant air leakage locations identified during the blower door test and include them in the Renovation Upgrade Report in the “Your energy advisor’s comments” box so that the homeowner has a better understanding of the areas that would benefit from air sealing.

The equivalent leakage area (ELA) indicates how tight a house is. A leaky house will have a large ELA (for example, possibly higher than 3000 cm<sup>2</sup> or 465 sq. in.), and a tight house might have a small ELA (possibly as low as 100 cm<sup>2</sup> or 15.5 sq. in.). If the house has a low ELA, the incremental benefit of air sealing could be quite low; however, a larger ELA indicates that the incremental benefit of air sealing could be significant. Keep in mind that houses with a low ELA have less natural ventilation, which would otherwise be provided by a leaky building envelope. This can cause potential indoor air quality and combustion spillage concerns if the house does not have sufficient mechanical ventilation. These concerns may be further exacerbated by air sealing if adequate mechanical ventilation is not provided.

Another factor to consider when determining the potential for air sealing is the house type. For example, a two-story house with the same ELA as a one-story house will likely have greater energy loss because of the stack effect during the cold months of the year. The stack effect increases the air pressure in the upper story of the house, thereby increasing the pressure difference across the holes in the building envelope.

There are benefits to air sealing beyond energy savings even when the ELA is low. For example, air leakage may be the cause of a cold corner in a room or of cold floors. In either case, air sealing should be considered to improve comfort. Another reason to consider air sealing is to preserve the building envelope by preventing moist air from entering wall and ceiling structures, or to improve indoor air quality and health by preventing particulates such as dust, pollens, insects, and vermin from entering the house.

## Context: Prioritizing Draftproofing Recommendations

Analysis of air leakage reductions in homes that have participated in BC rebate programs show that homeowners are typically missing out on significant draftproofing opportunities. Increasing energy savings from better recommendations, and draftproofing upgrades, can increase the energy savings achieved – allowing homeowners to reduce energy costs, reduce environmental impacts and improve home comfort and durability.

Natural Resources Canada recommends that energy advisors “**List the more significant air leakage locations identified during the blower door test** and include them in the report in the ‘Your energy advisor’s comments’ box so that the homeowner has a better understanding of the areas that would benefit from air sealing” (ERS Technical Procedures).

To maximize the benefits of air leakage reduction in every home, PQEAs are encouraged to prioritize draftproofing recommendations.

## General Guidelines for Prioritizing Draftproofing Recommendations

While the type of home and house-specific issues may result in adjustments to the list below, generally the priority areas for draftproofing are:

1. **In areas to be insulated, before insulating.**
2. **Large holes, regardless of location** (e.g. plumbing or electrical penetrations, ductwork through unconditioned spaces, large gaps under doors, masonry chimney chase ways, etc.).
3. **Smaller holes on top floor ceiling/attic** (e.g. pot lights, ceiling penetrations around fixtures, attic hatch, attic knee walls, service shafts, etc.).
4. **Smaller holes on the bottom floor** (e.g. hose bib penetrations, cracks on exterior and foundation walls, basement doors, electrical boxes, gas lines or oil fill pipes that go through exterior walls, etc.).
5. **Smaller holes at main floors** (e.g. windows, doors, top and bottom of baseboards, fireplace dampers, electrical outlets, switches, etc.).

When outlining draftproofing priorities in the “Your energy advisor’s comments” box, PQEAs are encouraged to prioritize the opportunities in a way that clearly outlines a sequence of work. Recommend that your clients first tackle as many of the “very high” and “high” priority locations as they can, and then address the medium and low priority locations as time allows.

## Basis for Draftproofing Priorities

1. **Why in areas to be insulated, prior to insulating?** Before any insulation is added to a wall, ceiling or floor, air sealing should be performed within the insulated area. Failure to do so may result in reduced insulation effectiveness as well as moisture accumulation and subsequent health and durability issues. As a result, air sealing before insulating is always the highest priority.

2. **Why in large holes regardless of location?** Large holes are a significant air leakage pathway. Large holes are easier to identify and fix, and often more cost-effective than other air leakage areas. Large holes present quick draftproofing wins for the homeowner.
3. **Why on the top floor?** Although you might feel drafts and see air leakage areas around windows and doors on the main floor, in most homes the most significant air leaks are frequently found in the attic/top floor and basement/lowest floor. This is due to the stack effect: in a heated home, less dense warm air rises and expands, creating a higher-pressure area near the top of the house pushing warm moist air out through air leakage points. Draftproofing at the top of the home eliminates, or at least reduces, the ability of moist warm air being pushed through your ceilings and roof, thereby minimizing the stack effect which also pulls cold air into the lower levels.
4. **Why on the bottom floor/basement?** Draftproofing efforts on the bottom floor further reduce the ability of the stack effect to pull cold air into the lower portions of the home.
5. **Why is it not recommended to only complete draftproofing on the main floor?** While draftproofing on the main floor can reduce air leakage and assist in improving comfort on windy days, if draftproofing is undertaken on the main floor without addressing air leakage issues on the top and bottom floors, the work on the main floor will not reduce air leakage caused by the stack effect. Instead, the main floor air leakage may result in a home that is a better funnel for air leakage from bottom to top, caused by the stack effect.

## Example of a Prioritized Draftproofing Recommendation

Providing clear guidance on priorities for draftproofing makes it very clear where the Energy Advisor recommends starting. Including a bit more detail within the Renovation Upgrade Report (RUR) can greatly assist the homeowner in their efforts. Also provide a link to resources like the ‘Best Practice Guide Air Sealing & Insulation Retrofits’ mentioned below.

Sample Draftproofing Recommendations in RUR	
Not Prioritized, Fewer Details	Prioritized, More Detailed
<p>Draftproofing recommendations for your home:</p> <ul style="list-style-type: none"> <li>• Replace weather stripping on door leading to back deck</li> <li>• Install weather stripping on large gap under basement door</li> <li>• Fix cracks in ceiling</li> <li>• Fix/seal duct work through unconditioned crawlspace</li> <li>• Seal masonry chimney chases</li> <li>• Seal around plumbing penetrations</li> <li>• Address leakage at pot lights</li> <li>• Seal rim joist</li> </ul>	<p>Draftproofing recommendations for your home: Tackle as many of the “very high” and “high” priority locations at your earliest opportunity. Then address the medium and lower priority recommendations as time allows.</p> <ol style="list-style-type: none"> <li><b>1. Very High Priority - Large holes regardless of location</b> <ul style="list-style-type: none"> <li>• Fix/seal duct work through unconditioned crawlspace (leaky, torn, and disconnected ducts)</li> <li>• Seal around plumbing penetrations (specifically at large plumbing vent opening into attic)</li> <li>• Seal masonry chimney chases (seal gaps between masonry chimney and dry wall)</li> </ul> </li> <li><b>2. High Priority - Smaller holes on top floor</b> <ul style="list-style-type: none"> <li>• Address leakage at top floor pot lights (replace with sealed models or install drywall boxes)</li> </ul> </li> <li><b>3. Medium Priority - Smaller holes on bottom floor</b> <ul style="list-style-type: none"> <li>• Install weather stripping on large gap under basement door (east side of home)</li> <li>• Seal rim joist (header, area where floor intersects with basement wall)</li> </ul> </li> <li><b>4. Lower Priority - Smaller holes on main floor</b> <ul style="list-style-type: none"> <li>• Replace weather stripping on door leading to back deck</li> </ul> </li> </ol>

## Communicating the Benefits of Draftproofing

Effectively communicating the benefits of draftproofing to homeowners verbally and in their Renovation Upgrade Report (RUR) can help to motivate homeowners to undertake this upgrade.

### The Benefits of Draftproofing Example Language

“Reducing air leakage can be the most cost-effective energy-saving measure a homeowner can undertake; the leakier the home, the greater the savings. In addition to reducing heat loss and energy bills in the winter, draftproofing keeps your home cooler in the summer, improves comfort and health, protects the building structure and other materials from moisture damage, and helps prevent dust, noise, and insects from entering from outdoors. Draftproofing can also shrink the environmental footprint of your home by reducing the greenhouse gas emissions produced by using energy to heat and cool your home.”

## Best Practice Guide Air Sealing and Insulation Retrofits

The CleanBC Better Homes and Home Renovation Rebate Program Requirements and Terms and Conditions reference the **Best Practice Guide Air Sealing and Insulation Retrofits** (for Single Family Homes). This is published by the Homeowner Protection Office (HPO), a branch of BC Housing and consolidates best practices for air sealing and insulation retrofits (i.e. building enclosure weatherization) for British Columbia homes. It does not cover mechanical systems, appliances, lighting, or diagnostic testing. The guide is intended to be a valuable reference tool for construction industry professionals and can help train contractors to perform weatherization work. It is similar in content to contractor-focused weatherization program training guides, but with specific regard to British Columbia’s unique climate, construction practices, and building code requirements. It can be downloaded from the following link: <https://www.bchousing.org/research-centre/library/residential-design-construction/best-practices-air-sealing-insulation-retrofits>

# BEST PRACTICE: ERS RENOVATION UPGRADE REPORTS

## ERS Report Upgrade Recommendations

The following summary is taken from the NRCan ERS Technical Procedures: Developing Upgrade Recommendations. As all experienced Energy Advisors know, there are no standard or set recommendations that will automatically apply to each house, nor is there any single approach to developing home energy improvement solutions to problems. Each house is unique and upgrade recommendations should be based on the following:

- Collected data
- Energy savings potential
- Homeowner renovation plans, repairs, concerns, and priorities
- The [technical and economic] feasibility of implementing each upgrade
- Building science principles and the house-as-a-system concept

NRCan recommends multiple energy-related upgrade categories to be developed for each EnerGuide Rating System Renovation Upgrade Service. For homes with very poor energy efficiency performance, many upgrade categories may be appropriate.

Upgrades Recommendations may, and usually should, include “stretch” recommendations or upgrades that are meant to be pursued at a future date when and if the homeowner has the inclination and the means to undertake those upgrades. Those upgrades should be last on the Energy Efficiency Action Roadmap.

Note that multiple recommendations can be made under any upgrade category in any type of home. For example, several different RSI/R-values of wall insulation may be recommended for different wall sections of a house under the Insulate Main Walls category. However, this is still only one upgrade category, and the Renovation Upgrade Service requires at least one other different category to be presented on the homeowner’s “Energy Efficiency Action Roadmap”.

### PQEA Tips and recommendations for making the best Upgrade Recommendations

- **Existing problems:** Ask the homeowner about existing problems or concerns regarding the state of the house. This will serve as a guide to potential problems during the on-site evaluation and will inform which relevant publications should be recommended to the homeowner. For example, ask the homeowner about any signs of condensation during the colder months. Condensation due to high humidity levels can lead to rotting of wooden parts of windows, corrosion of metal components, mold, and deterioration of drywall, painted surfaces, and structural components (such as studs, beams, and joists).
- **Renovation plans:** Ask the homeowner about planned renovations. Review the plans to determine whether there are energy efficiency upgrades that can be merged with these plans. Some renovation work may have the potential to solve some or all of the problems identified by the homeowner. Try to determine the homeowner’s priorities. When developing the Renovation

Upgrade Report, it is important to balance homeowner priorities with prudent building science recommendations.

- Consider the technical and economic feasibility of the recommendations and balance the homeowner’s priorities with building science, energy savings, occupant health and safety, and cost considerations. Remember, a homeowner’s energy efficiency upgrade priorities are not always related to comfort or cost savings.
- If the homeowner has expressed a strong desire to implement a certain upgrade before all others, that upgrade should appear as number one on the “Energy Efficiency Action Roadmap” unless it is not advisable for health, safety or technical reasons. For example, a note could also be included to explain why another sequence would be preferable but that this sequence was used to accommodate homeowner’s specific plans and priorities.
- Consider items that must be repaired or otherwise dealt with prior to any upgrade work being performed. For example, if there is or has been history of a leak in the roof, recommend that this be repaired before attic insulation is added.
- Consider items that are not presently causing problems, but that may cause problems as a result of implementing the upgrade recommendations (e.g. upgrade ventilation system before air sealing).
- Check the *Full House Report* in HOT2000 to determine which house components have the highest estimated heat loss. For example, if the basement is the component with the greatest heat loss, upgrade recommendations for this area of the house could be the first priority (especially if the homeowner is primarily interested in energy savings). Note that the *Full House Report* is to be generated with Standard Operating Conditions (SOC) and should not be provided to the homeowner.
- If you discover rats or mice (rodents) in the insulation it is important to eliminate the problem before adding more insulation. Rodents can be identified visually (evidence of tunneling in insulation or rodent droppings) or by hearing rodents moving around within walls or attics. Rodent tunneling creates holes in the insulation, impacting the effectiveness of the insulation. Rats and mice have babies often, so it is important to find and get rid of them quickly to reduce the potential for damage to your home or creating a health issue. Before the home is insulated, tell the clients to undertake the following steps:
  - Get rid of the rodents in your home
  - Take preventative measures: eliminate food and water sources, eliminate hiding and living places, seal all possible entry points and repair any cracks or gaps in doors, roofing, or the foundation.
  - Repair any damage caused to the existing insulation.
  - For more information about the harm rodents can cause and information on prevention see the FAQ on betterhomesbc.ca – [How to upgrade your insulation if Rats or Mice are Present.](#)
- Use simple HTML tags to format the “Your energy advisor’s comments” section of the RUR in order to make them clearer and more impactful for homeowners. A list of HTML TAGs is provided in the HOT2000 User Guide and a revised version is provided below for reference.



Format	HTML tags
<b>Bold</b>	<b> text </b>
<b>Underline</b>	<u> text </u>
<b>Italicize</b>	<i> text </i>
<b>Bing font</b>	<big> text </big>
<b>Small Font</b>	<small> text </small>
<b>Specify font type and colour</b>	<font face="verdana" color="green"> text </font>
<b>Specify font size and colour</b>	<font size="3" color="red"> text </font>

The following example illustrates the use of some of these tags to describe a window upgrade:

```

<font color="darkgreen">
Overall your windows are in really good shape. I noticed that one window in the
basement has black spots (likely mold) around the frame (I believe there was a
dehumidifier in there). To reduce the amount of moisture in your home, try not to
dry laundry inside and always use your range fan and bathroom fans when cooking
and showering, respectively.

You have indicated that there you have no immediate plans to upgrade your windows.
I have included a window upgrade option in your report to show you the potential
energy savings.

<u>Rebates:</u>

There is currently a rebate of $50 per window/door that you replace (up to $1000).
By replacing at least 5 windows/doors, this upgrade can count as one upgrade
towards the CleanBC Better Homes and Home Renovation Rebate Program's Two Upgrade
Bonus or Home Energy Improvement Bonus. New windows/doors must be ENERGY STAR
certified (ensure you keep the ENERGY STAR labels for each window/door). Receipt
documentation is required, see sample <a href="
https://betterhomesbc.ca/faqs/better-homes-documentation/">here</a>.


</font>

```

## Explaining the ERS Rating and Label

Natural Resources Canada produces a Guide to the EnerGuide Label for Homes (see below). It is recommended that Energy Advisors provide homeowners with a hard copy or link to this document. Energy Advisors should also consider verbally explaining the meaning of the EnerGuide rating and label.

# The New EnerGuide Label



**Natural Resources Canada has updated\* the EnerGuide label to provide you with more information about your home's energy performance:**

**LEARN ABOUT YOUR HOME'S ENERGY rating**

You will receive a rating of the home's energy consumption in gigajoules

**AIM TOWARDS zero**

The lower the number on the new EnerGuide scale, the better the energy performance of your home

**UNDERSTAND HOW YOU USE energy**

The label breaks down energy consumed by source

18 St-Hubert  
Ottawa, ON, N2H 3J3

## ENERGUIDE

Data Collected: March 11, 2018  
File Number: 1234567890  
Home evaluated by: M32 Energy Solutions

170

GJ/year

\*This house's energy performance is better than 10% of new homes

One gigajoule (GJ) equals the energy from two 902 propane tanks

Total Annual Energy Consumption		Breakdown of Total Annual Energy Consumption	
Unit	Value	Category	Percentage
Electricity	33	A. Space heating	50%
Natural gas	24	B. Space cooling	2%
		C. Water heating	14%
		D. Refrigeration	0%
		E. Lights & electronics	1%
		F. Other electrical	2%

\*Electricity  
\*Space water heating

\*This house has significant energy uses not included in the rating. See "Energy Details" on your Homeowner Information Sheet for details.  
The energy consumption indicated on your utility bills may be higher or lower than your EnerGuide rating.

Visit [nrcan.gc.ca/myenerguide](http://nrcan.gc.ca/myenerguide)

Natural Resources Canada    Environment Canada    **Canada**

**COMPARE YOUR HOME'S performance**

The label shows how your home's performance compares to a benchmark home

**FIND OUT WHERE MOST ENERGY IS consumed**

The label shows proportion of energy consumed by heating, cooling, ventilation, etc.

**SEE YOUR IMPACT ON THE environment**

The label shows your home's Greenhouse Gas Emissions

\*During the period of transition, some provinces and territories will continue to use the 0-100 scale until they are ready to fully adopt the new scale.

Learn how EnerGuide can help make homes more efficient, more valuable, and more comfortable at [nrcan.gc.ca/homes](http://nrcan.gc.ca/homes)

## ENERGUIDE

## WRAP UP ACTIVITIES

### PQEA Responsibility

As per the ERS Technical Procedures: Homeowner Interaction: “While EAs are not expected to act as a long-term renovation consultant under the agreement to perform the Renovation Upgrade Service, the homeowner should know that you are available to explain and clarify the recommendations following the delivery of the Renovation Upgrade Report.”

Following up with the homeowner after the energy evaluation is also a key role. **Provide the homeowner with your contact information so that email or telephone communication and clarification can take place.** While you are not expected to act as a long-term renovation consultant under the agreement to perform the Renovation Upgrade Service, **the homeowner should know that you are available to explain and clarify the recommendations following the delivery of the *Renovation Upgrade Report*.** Energy advisors should also know that they can direct homeowners to the [CleanBC Energy Coach Service](#) for questions on rebates and basic questions about energy efficiency products and upgrades.

### Advising Homeowners on Selecting the Right Contractor

Natural Resources Canada maintains that Energy Advisors should not endorse specific contractors, products, or equipment. Additionally, it is important to note and that the homeowner accepts full responsibility for the renovation work performed, including the choice of materials, equipment, and contractors.

Inform the homeowner about the following resources for further information:

- Better Homes BC – [Information about Working with Contractors](#)

PQEAs are also encouraged to briefly, verbally summarize how homeowners can best find a suitable contractor. Think about the summarized recommendations provided below when speaking about contractors with your clients.

### Summarized Tips

The following tips can help you advise your clients on selecting the right contractor:

1. **Ask for recommendations and references.** Ask acquaintances for recommendations on good contractors.
  - a. **Check references:** Have contractors supply you with customer references.
    - i. Can they confirm that they hired the contractor in question?
    - ii. Were they happy with the contractor's work?
    - iii. Did the contractor finish the project on time and on budget?

- iv. Would they have any hesitation recommending this contractor to someone else?
    - b. **Check Better Business Bureau (BBB) Rating:** Accredited BBB businesses in good standing are more likely to be committed to good customer service standards. The BBB can also facilitate dispute resolution, should it be required.
    - c. **Check contractor accreditation:** For some upgrades it is advisable to hire a contractor with the right accreditation. See: [What accreditations do I look for when hiring contractors/installers?](#)
2. **Ask for full costs and requirements:** Good contractors will be upfront about the right type of energy retrofits for your home and all the costs and requirements, including: permits, utility connection costs, bylaws, building codes, asbestos or mold remediation, and ensuring the product recommended is the right product for your home.
3. **Get estimates from at least 3 different contractors:** When evaluating estimates, consider reasons for higher or lower costs, annual maintenance costs, customer service, qualifications and experience, warranty coverage and costs, technical support, and product availability.
4. **Get It In Writing**
  - a. Make sure both you and the contractor sign a written contract before work begins and keep a copy for your records. Make sure changes to the contract are made in writing.
  - b. The quote and contract should be itemized with all materials, products, labour and taxes, and should explain the timeline and costs associated with each item, as well as a payment schedule and warranty information.
  - c. Make sure your contractor supplies you with dated, itemized receipts for all your upgrades with their respective model numbers and product identifiers. Receipts are required criteria for the CleanBC Better Homes and Home Renovation Rebate Program.
  - d. An honest and professional contractor will never ask you to pay cash.
5. **Make sure the contractor installs the right products**
  - a. Is the product eligible for the CleanBC Better Homes and Home Renovation Rebate Program? Note that not all energy upgrades are eligible for rebates and the right product for your home may not meet the rebate program eligibility requirements.
  - b. Keep your documentation requirements handy to confirm eligibility for rebates.