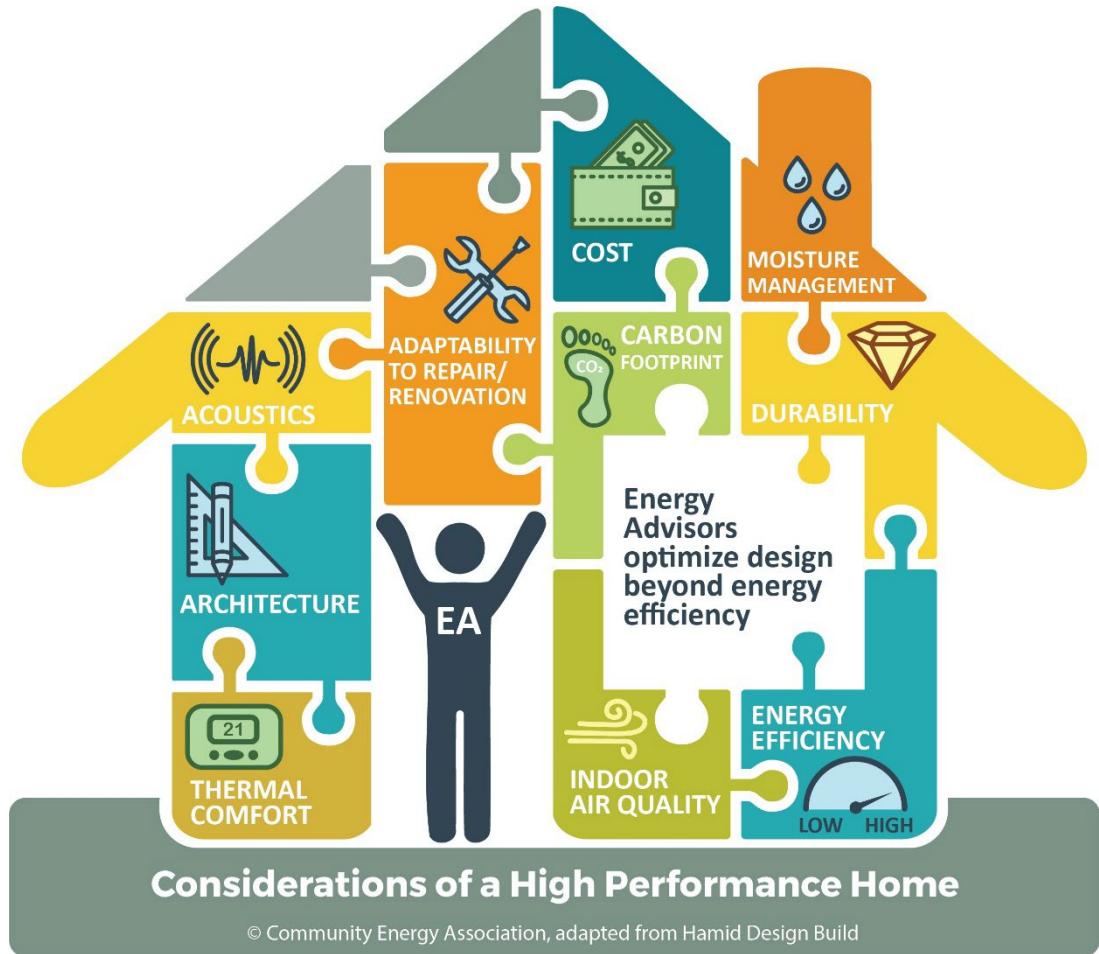


Working with an Energy Advisor

Your roadmap to a High-Performance Home



CACEA Canadian Association of
Consulting Energy Advisors

WORKING WITH AN ENERGY ADVISOR (EA)

YOUR NEW CONSTRUCTION ROADMAP

STEP 1: MODEL YOUR HOME: An EA models your home to show that it is compliant with the current metrics for your region and climate zone. You need to provide your permit plans including any mechanical systems, window and door packages, and building assemblies that will be used in building the home.

STEP 2: OPTIMIZATION: An EA views your home as a system as opposed to its individual parts and can compare and contrast how each upgrade will change the performance of your home. This information allows balancing options and designing to your context.

STEP 3: MID CONSTRUCTION VERIFICATION: A mid-construction air leakage test determines air tightness of a home while the air barrier is exposed. It highlights issues while still easily accessed and corrected. Ideally, the air barrier is complete and windows and doors installed at time of testing. Subtrades can be on-site working, inside or outside of the home, during the mid-construction air tightness test.

STEP 4: FINAL SITE INSPECTION: Completes a final site inspection including a final air leakage test. All windows, doors and mechanical systems must be installed for verification.

STEP 5: REPORTING AND REBATES: An EA provides final reporting and any required labeling in order to meet local requirements and apply for applicable rebates.

YOUR NEW CONSTRUCTION CHECKLIST - Modelling Information Requirements

PLANS MUST SHOW:

- Scale. Ideally the same scale on every page to avoid delay, extra expense, and errors.
- Window sizes and window operation.
- All vaults. Ideally with a cross-section for each vault.
- All building assemblies with the correct insulation values that you plan to actually build. Permit offices reject plans that don't match EA reports, e.g., "2.5 inch ridged" isn't sufficient. You must note the insulation's expected R-value.
- Direction the home faces.

VENTILATION:

- Type of system and location, e.g., HRV (bathroom fan) or forced air fan. *If unknown, EA can assign assumptions.*

WINDOWS:

- Type of windows, e.g., vinyl or wood frame casement, sliders.
- U-value and/or other performance ratings of the windows.
TIP: Window quotes typically show the performance data needed. *If unknown, EA can assign assumptions.*

HEATING AND COOLING:

- System type, e.g., heat pump, gas forced air, boiler.
- Performance data for those systems. **TIP:** Mechanical quotes typically show the performance data needed. *If unknown, EA can assign assumptions.*

Content adapted from and in partnership with:

WORKING WITH AN ENERGY ADVISOR (EA)

YOUR NEW CONSTRUCTION CHECKLIST - Air Leakage Testing

CONSTRUCTION PHASE:

- Building envelope is intact and air barrier fully completed.
- All windows and doors installed, or openings temporarily sealed.
- Close all dampers.
- Seal all intentional openings: chimneys, vents and drains.
- 120V 15A power is available near the test location.
- Provide clean and clear access to the test location.
- All workers on-site are prepared to stay in or out of the building during the test (min. 30 minutes).
- Provide heat to the building if a thermal camera is used for leak detection (min. 5° warmer / colder than outside temperature).

FINAL TESTING PHASE:

- Ensure all paint and finishes are dry and will not be damaged by blower install or leave residue on the blower equipment.
 - Provide clean and clear access to the test location.
 - Do not seal off vents or other openings normally left open or use tape or other sealants to block leaks.
 - Close all dampers.
 - Shut down all gas-fired appliances. *EA can assist.*
 - Shut off all ventilation and fans. *EA can assist.*
 - All openings are sealed, e.g., no open or broken window panes.
 - Fill all P traps with water.
 - On-site workers are prepared to stay in / out during test (min. 30 minutes)
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THE BENEFITS OF WORKING WITH AN ENERGY ADVISOR (EA)

EAs are knowledgeable efficiency and sustainability professionals – helping homeowners, renovators and builders make **GOOD** decisions – and where house components work together, and a home is safe, comfortable, efficient and durable. They are **YOUR** partner to successfully navigate a challenging and ever-changing landscape.

With an uncertain energy market, a growing sense of environmental responsibility and expanded government regulations, there is an increased focus to ensure homes are sustainable, comfortable, and efficient. **EAs are energy efficiency and building science professionals**, registered with, and licensed by Natural Resources Canada (NRCan) to deliver the EnerGuide Rating System (ERS) – a standardized system, using a recognized rating tool, that is frequently referenced as a requirement for programs. EAs provide impartial, third-party verification and rate single dwellings, townhomes and low rise, multi-unit buildings energy efficiency.

EAs view the ‘house as a system’ where every part of the home works together to achieve optimal result. They have a broad variety of knowledge and expertise: building / construction approaches, materials and technologies; energy consumption patterns; current, and pending, regulations and programs; etc.

EAs can provide “basic” services (EnerGuide label/code compliance requirements, reporting/RUR) – for new homes: average 6 hrs. total; for existing homes: average 7-12 hour) total. However, **it is ideal to leverage an EA’s expertise**. **FOR NEW HOMES OR EXTENSIVE RENOVATIONS**, engage an EA at the design stage (ideal) or during the build, to facilitate discussions with architects / designers, trades and contractors, and other building professionals to explore different opportunities and pathways. **FOR EXISTING HOMES** engage an EA to review your renovation upgrade report (RUR) and identify areas that require attention and explore additional opportunities to create a roadmap towards a healthier, more sustainable and efficient home.

Find an experienced EA at <https://cacea.ca/find-an-energy-advisor/>

WORKING WITH AN ENERGY ADVISOR (EA)

YOUR EXISTING HOME / RETROFIT ASSESSMENT ROADMAP

STEP 1: HOUSE EVALUATION/VERIFICATION: An EA will conduct a site visit to take measurements and photos, and perform an air leakage test. They need access to all rooms of the home. An evaluation of an existing home considers:

- dimensions and measurements of the building envelope
- wall construction (ability to keep the heat in)
- foundation type and insulation (ability to keep the heat in)
- window construction (heat lost through glazing)
- ceiling and attic insulation (ability to keep the heat in)
- mechanicals (heating, AC, ventilation, water heaters, etc.)
- air leakage rate (how many times you reheat your home's air / hr.)
- atypical loads (large appliances that consume a lot of power)

STEP 2: UPGRADE RECOMMENDATIONS: Modelling allows an EA to identify areas for improvement based on highest impact and related to a client's wants and needs. It can be hard to know which upgrade to begin first, especially when working within a budget. An EA can offer an invaluable renovation path that considers both the existing building and your upgrade goals. They may consider options that prioritize the most cost-effective route, best value added for resale, maximizing available rebates, or a combination of these considerations (*may not be a basic service*).

STEP 3: REBATES: An EA can assist with paperwork required for rebates, closing the loop on upgrades. An additional site visit (e.g., post retrofit audit: air tightness test and verification of upgrades) may be needed.

YOUR EXISTING HOME / RETROFIT CHECKLIST - Modelling Information Requirements

MEASUREMENTS:

- Scale and house size and shape.
- All vaults. Ideally with a cross section for each vault.
- All building assemblies with estimated insulation values.
- Direction the home faces.

VENTILATION:

- Type of system and location, e.g., HRV (bathroom fan); forced air fan.

WINDOWS:

- Window sizes and window operation.
- Type of windows, e.g., vinyl / wood frame casement; sliders.
- U-value and/or other performance ratings of the windows.
If unknown, EA can assign assumptions.

HEATING AND COOLING:

- System type, e.g., heat pump, gas forced air, boiler.

YOUR EXISTING HOME / RETROFIT CHECKLIST – Air Leakage Testing

- Don't light fireplaces. They must be cold and clean for testing.
- Clear access to the attic hatch so the EA can see the attic insulation.
- Clear access to crawl spaces so the EA can access them.
- Don't seal off vents or other openings normally left open.
- Close all dampers.
- Shut down all gas-fired appliances. *EA can assist.*
- Shut off all ventilation and fans. *EA can assist.*
- All openings are sealed, e.g., no open / broken windows.
- Don't turn up the furnace thermostat, take a bath / shower, run the dishwasher, or use washing machine and/or dryer.
- Occupants are prepared to stay in or out for min. 30 minutes.
- An adult with a knowledge of the home must be present.