



# Sunshine Coast Builder's Webinar

## Introduction to the BC Energy Step Code

December 8, 2020

[visit gibsons.ca](https://www.visitgibsons.ca)



# Sunshine Coast Builders Webinar

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## AGENDA

**8:30 am:** Introduction / Local Government approach

**8:40 am:** CleanBC Better Homes New Construction Program

**8:50 am:** FortisBC New Home Program

**9:00 am:** Step Code Introduction

**9:15 am:** Working with an Energy Advisor

**9:30 am:** Wrap up – Q&A



ENERGY  
**STEP**CODE  
BUILDING BEYOND THE STANDARD

JANUARY 1, 2021  
Step 1 (Part 3 and Part 9 buildings)

Organization	Name	Email
Town of Gibsons	Lesley-Anne Staats	<a href="mailto:lstaats@gibsons.ca">lstaats@gibsons.ca</a>
District of Sechelt	Andrew Allen	<a href="mailto:Andrew.Allen@sechelt.ca">Andrew.Allen@sechelt.ca</a>
Sunshine Coast Regional District	Allen Whittleton	<a href="mailto:Allen.Whittleton@scrd.ca">Allen.Whittleton@scrd.ca</a>
<i>Shishalh</i> Nation	Peter Jmaeff	<a href="mailto:SIGD@shishalh.com">SIGD@shishalh.com</a>
BC Ministry of Energy, Mines and Low Carbon Innovation	Laura De Carolis	<a href="mailto:Laura.DeCarolis@gov.bc.ca">Laura.DeCarolis@gov.bc.ca</a>
FortisBC	Greg Enns	<a href="mailto:Greg.enns@FortisBC.ca">Greg.enns@FortisBC.ca</a>
Community Energy Association	Patricia (Trish) Dehnel	<a href="mailto:pdehnel@communityenergy.bc.ca">pdehnel@communityenergy.bc.ca</a>
Elemental Energy Advisors Ltd.	Cristi May-Sacht	<a href="mailto:cristi@elementalenergyadvisors.ca">cristi@elementalenergyadvisors.ca</a>

## Contact Info



# CleanBC Better Homes New Construction Program

Information Session for the Sunshine Coast Builders –  
Step Code Introduction

December 8, 2020

# Agenda

- Program overview
- Eligibility criteria
- Available rebates
- How to apply
- Q&A

# Program overview

- The **CleanBC Better Homes New Construction Program** will provide financial incentives for the construction of new, high-performance residential homes
- Will advance CleanBC objectives and help achieve the building sector's 2030 emission reduction target by supporting Energy Step Code adoption and incentivizing builders to use electric space and water heating systems
- Developed and funded by the Province of BC, administered by BC Hydro

# Rebate Pathways

- Applicants may apply for one of two rebate pathways:
  - **Energy Step Code pathway:** build a new home that meets a minimum BC Energy Step code level and uses electric space and water heating systems.
  - or
  - **Heat pump pathway:** build a new home that uses an electric heat pump for space heating or water heating, regardless of Energy Step Code level.
- Add-on rebates
  - **All-Electric Bonus:** build a home with no fossil fuel connection whatsoever (e.g. natural gas, propane, oil) and receive an additional \$4,000 per home.
  - **Energy Advisor Support Rebate:** work with a Program Qualified Energy Advisor and receive an additional \$1,000 per home.



# Eligibility

- Homes may be constructed by a licensed residential builder or an owner builder authorized by BC Housing
- Homes must be constructed in compliance with Part 9 of the BC Building Code and, where applicable, the municipally-adopted minimum BC Energy Step Code requirement
- Homes must be built in BC Hydro (including New West Electric) service territory
- Eligible building types:
  - Single family detached
  - Laneway home
  - Duplex
  - Row or townhome

## Eligibility (continued)

- An applicant may include a licensed residential builder, owner builder, or Program Qualified Energy Advisor applying on a builder's behalf.
- Builders participating in the Energy Step Code pathway or applying for the Energy Advisor Support Rebate or All-Electric Bonus in the Heat Pump pathway must work with a [Program Qualified Energy Advisor](#)
- Building permits must be issued on or after April 1, 2020

# Heat pump pathway incentives

- Build a home that uses an electric heat pump for space heating or water heating

Heat pump type	Requirements	Rebate	Energy Advisor Support Rebate (optional)	All-Electric Bonus (optional)
Air source heat pump	<b>Variable speed mini-split, multi-split, or central ASHP (Tier 2 only)</b> HSPF ≥9.3, SEER ≥16 Must be on the <a href="#">QPL</a>	\$3,000	\$1,000 per individually modelled home or unit <ul style="list-style-type: none"><li>• \$800 to builder</li><li>• \$200 to EA</li></ul>	\$4,000 per home or unit
Air-to-water hydronic heat pump	Must be on the <a href="#">QPL</a>	\$3,000		
Combined space & water heat pump	Must be on the <a href="#">QPL</a>	\$4,000		
Heat pump water heater	Must be on the <a href="#">QPL</a>	\$1,000		

# Energy Step Code pathway incentives

- Build a home to Step 3 or higher using electric space and water heating systems

ESC Step	Rebate	Energy Advisor Support Rebate	All-Electric Bonus (optional)
<b>Step 3</b>	\$4,000	\$1,000 per individually modelled home or unit <ul style="list-style-type: none"><li>• \$800 to builder</li><li>• \$200 to EA</li></ul>	\$4,000 per home or unit
<b>Step 4</b>	\$6,000		
<b>Step 5</b> (or Passive House-certified)	\$10,000		

# How to apply

1. Carefully review the program website, including the [Rebate Eligibility Requirements](#) and [Terms and Conditions](#) to confirm your eligibility
2. Fill out and submit the pre-registration form
  - Within 30 days of submitting this form, BC Hydro will send you an email with the status of your submission
3. Complete your project within 12 months of the date of your pre-approval confirmation email
4. Submit the post-construction application and required supporting documentation
5. Application reviewed and if approved, rebates issued

**Questions?** BC Hydro's Project Manager, Residential New Construction Program and the CleanBC Energy Coaches are available to support applicants

# Questions?

- **Website:** [www.betterhomesbc.ca/cleanbc-new-construction](http://www.betterhomesbc.ca/cleanbc-new-construction)
- **General inquiries:**
  - [betterhomesbc@gov.bc.ca](mailto:betterhomesbc@gov.bc.ca)
- **1:1 Program support:**
  - Adrian Kanjer, Project Manager, Residential New Construction Program, BC Hydro  
[adrian.kanjer@bchydro.com](mailto:adrian.kanjer@bchydro.com)

# Supporting documentation

## Heat pump pathway

Document	Heat pump rebate	EA Support rebate	All-Electric Bonus
<b>Pre-registration</b> <ul style="list-style-type: none"><li>Energy Advisor Appointment Consent Form (if applicable)</li></ul>	✓	✓	✓
<b>Post-construction</b> <ul style="list-style-type: none"><li>Heat pump installation invoice</li><li>As-Built BC Energy Compliance Report</li><li>EnerGuide (N) Evaluation Homeowner Information Sheet</li></ul>	✓ x x	x ✓ ✓	x ✓ x

# Supporting documentation

## Energy Step Code pathway

Document	ESC rebate & EA Support rebate (Step 3-5)	ESC rebate & EA Support rebate (PH)	All-Electric Bonus
<b>Pre-registration</b> <ul style="list-style-type: none"><li>Energy Advisor Appointment Consent Form (if applicable)</li></ul>	✓	✓	✓
<b>Post-construction</b> <ul style="list-style-type: none"><li>As-Built BC Energy Compliance Report</li><li>EnerGuide (N) Evaluation Homeowner Information Sheet</li><li>Passive House Planning Package</li></ul>	✓ ✓ x	✓ x ✓	✓ x x





## New Home Program - Enhanced Incentives

Supporting Builders and Homeowners to get Back on Track



*Energy at work*  FORTIS BC™

# New Home Program – Enhanced Incentives

Option A		Option B		EA Support Incentive		Additional Rebates
<b>Home Performance (Step Code)</b> <div> Step 2 \$3,000  Step 3 \$4,000  Step 4 \$6,000  Step 5 <sup>(1)</sup> \$10,000 </div>	OR	<b>High-Efficiency Water Heaters</b> <div> Qualifying Storage Tank \$500  Condensing Storage Tank \$1,000  Condensing Tankless \$1,000  Combination Heating and Hot Water System \$1,200 </div>	PLUS (+)	<u>Energy Advisors</u> receive \$100  <u>Builders</u> receive \$400  <b>Total = \$500</b>	PLUS (+)	Gas Dryer \$100  Connected Thermostat <sup>(2)</sup> \$100  <div> Gas Fireplace \$500    DWHR <sup>(3)</sup> \$250 </div>
<p>(1) Pre-approved from FortisBC required.</p> <p>(2) Available only for homes with natural gas space heating.</p> <p>(3) Available only for homes with natural gas water heating.</p>						



# Design Offer

A new incentive offered to builders who are pursuing **Step 3, 4 or 5** to help encourage processes that will reduce builder time and risk, while still creating high-performing homes more effectively and efficiently.

Builders can choose to participate in one, two or all three elements of the offer and receive up to **\$7,000** to reimburse the cost of the consultants hired to complete the work. The incentive is available **per detached home or unique unit in a multi-family complex** (up to **\$50,000** in multi-family projects).

- (1) Integrated Design Process: **\$1,000** rebate <sup>(1)</sup>
- (2) Envelope Design and (3) Mechanical Design: up to **\$6,000** in rebates <sup>(2)</sup>

<sup>(1)</sup> Must use a pre-approved IDP facilitator

<sup>(2)</sup> Must use a building science consultant and/or mechanical design specialist.



# Design Offer - Eligibility

New construction projects must be located in the **FortisBC service territory** and **meet the following criteria:**

- Project is at the **early design stage** (prior to permit application);
- Design assistance is provided to **optimize** building envelope, mechanical systems and/or IDP;
- Building design can be modified to **enhance the effectiveness** of the mechanical system and/or the building envelope to improve the overall energy efficiency of the home,
- FortisBC energy source provides the **primary heat** for space and domestic water heating.

# Design Offer - Deliverables

## Envelope Design

- Envelope plans/assembly details
- Effective insulation (RSI) calculations for each assembly used in the home
- Details of areas with significant thermal bridges and how to address them
- Airtightness details demonstrating a continuous air barrier

## Mechanical Design

- Room-by-room heating and cooling load calculations compliant with CSA-F280
- Mechanical design plans including detailed equipment schedule
- Start-up report that includes manufacturer requirements and best practices from TECA or HRAI industry associations (provided by mechanical system designer)

## Integrated Design Process (IDP)

A report which summarizes the following:

- Project overview
- Attendees of visioning and charrette workshops
- Visioning session and charrette notes
- Observations of performance benchmarking activities
- Modelling and design optimization results
- Proposed solutions
- Lessons learned, key strategies and knowledge derived from the Design Offer
- If building to Step 3, a summary of the steps required to reach Step 4 or 5.



## 4 pillars of our Clean Growth Pathway to 2050



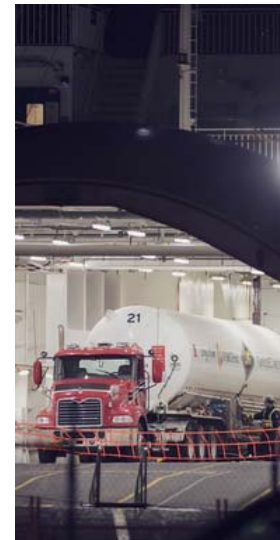
**Energy  
efficiency**



**Renewable  
gas**



**Zero and  
low carbon  
transportation**



**Global LNG**

# Thank you!



**For further information, please contact:**

- [Newhome@fortisbc.com](mailto:Newhome@fortisbc.com)



# Climate Action & BC Energy Step Code



**Sunshine Coast  
December 8, 2020**



**Community Energy  
Association**



# About Us



CEA is the only non-profit in BC focused exclusively on supporting local governments and indigenous communities on **CLIMATE** and **ENERGY** activities. Our expertise is helping communities with:



**LEADING  
COLLABORATION**  
between local governments



**DELIVERING**  
community projects



**DEPLOYING**  
infrastructure

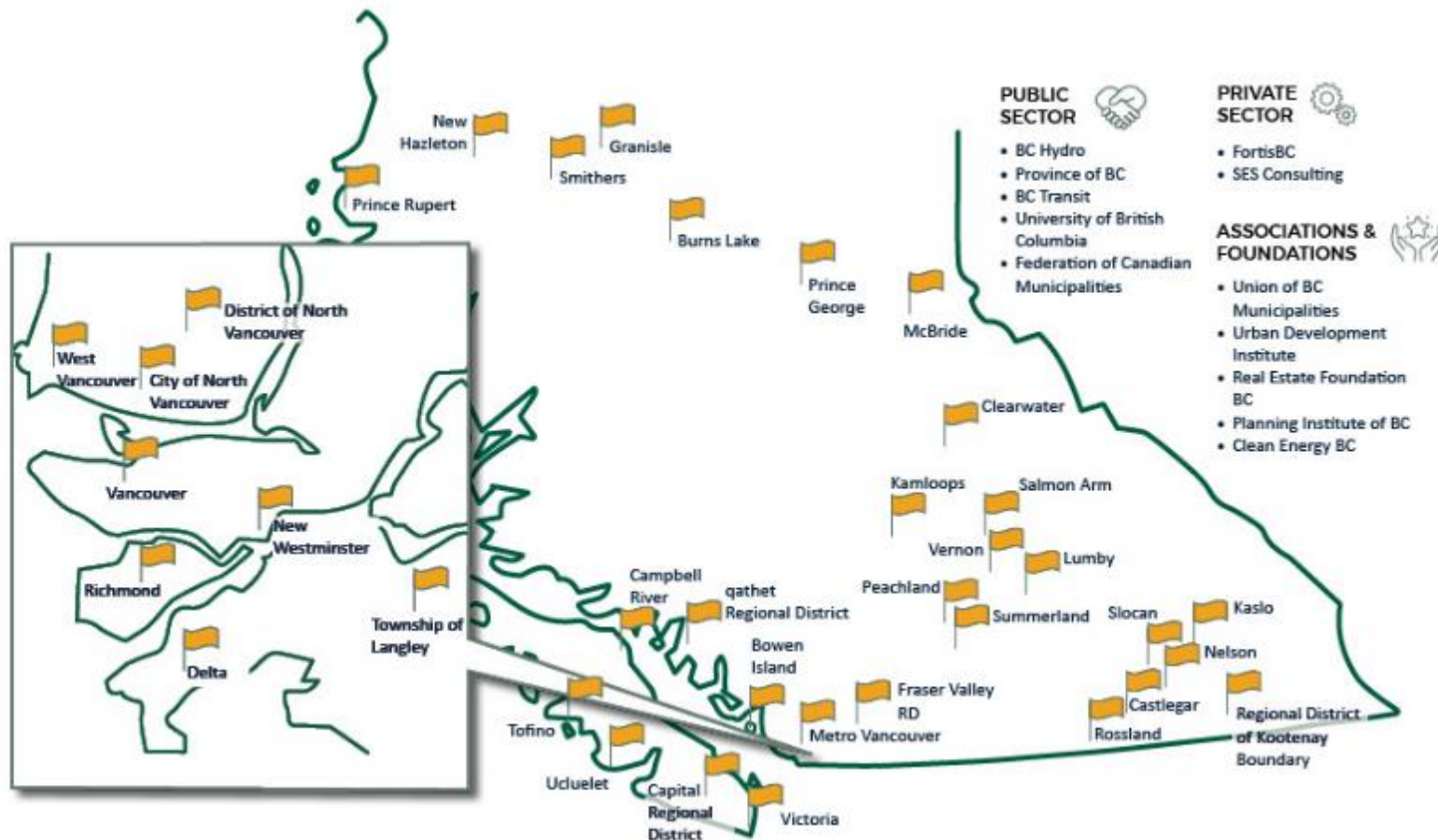


**BUILDING CAPACITY**

# Our Members



CEA Members are recognized as leaders in driving climate action in BC and are among the province's most driven advocates for inspiring climate solutions.



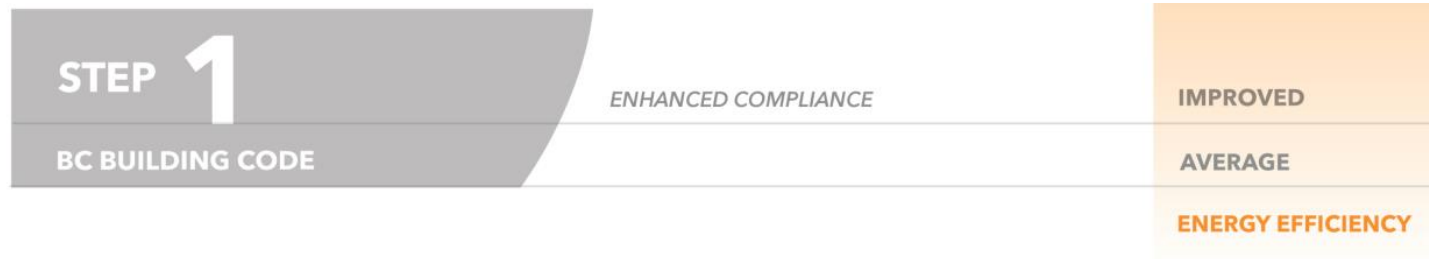


ENERGY  
**STEP**CODE  
BUILDING BEYOND THE STANDARD

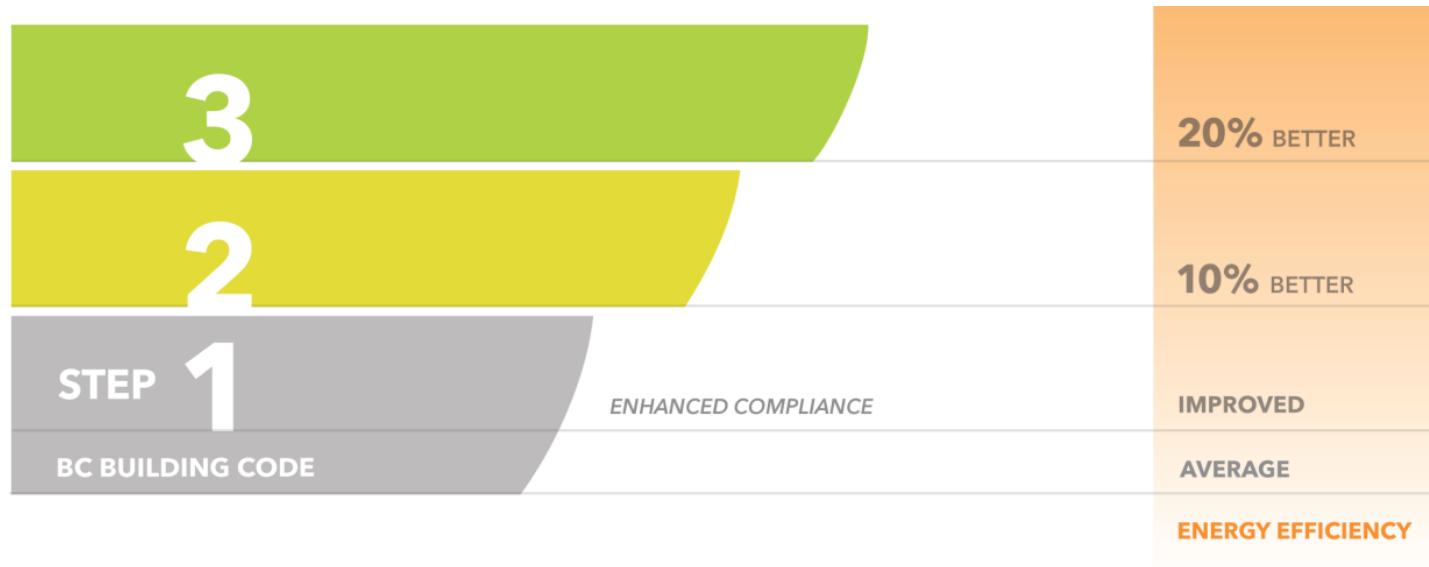
# How the BC Energy Step Code Works (Part 9)



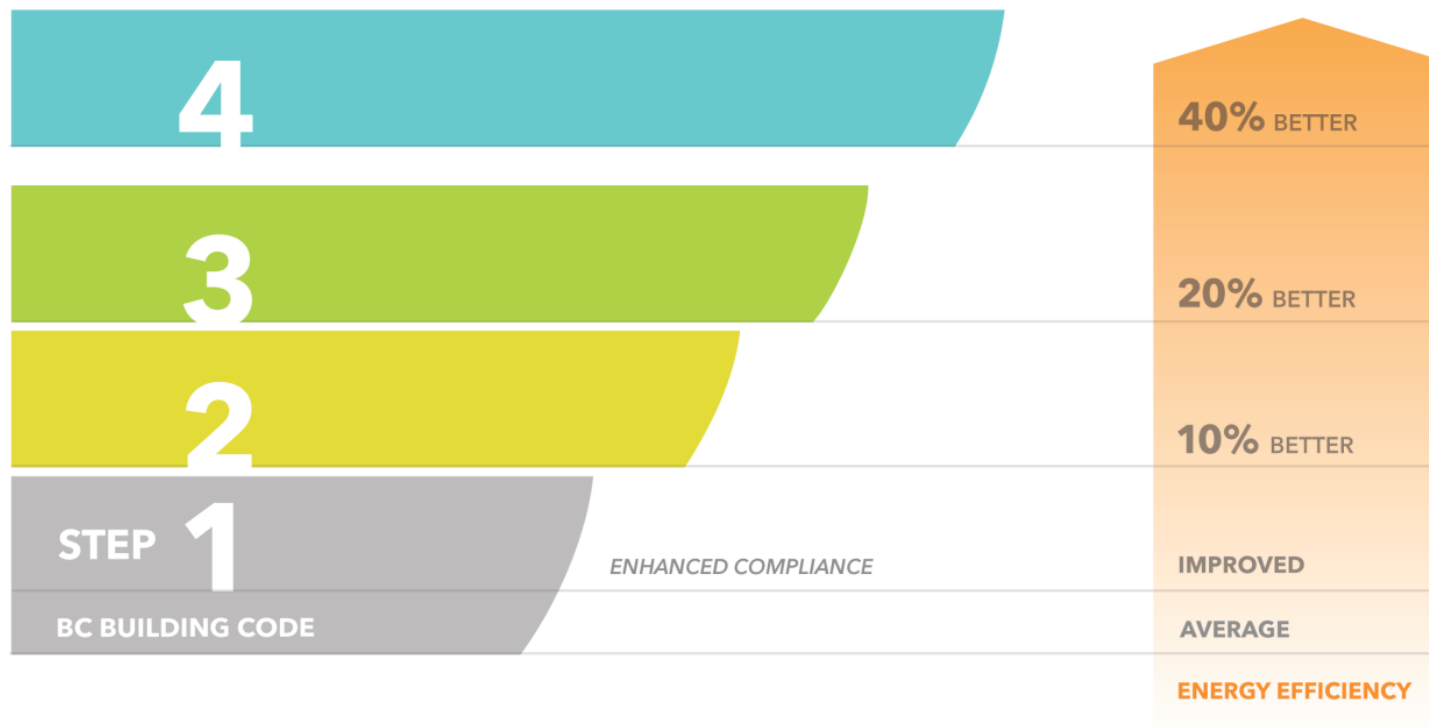
# How the BC Energy Step Code Works (Part 9)



# How the BC Energy Step Code Works (Part 9)



# How the BC Energy Step Code Works (Part 9)



# Roadmap to Net-Zero Energy-Ready Buildings

## Timeline for Energy Efficiency Regulatory Requirements in the BC Building Code

Here's what the province's CleanBC plan will mean for new-construction requirements.

2032

STEP 5

STEP 4

NET-ZERO ENERGY-READY

UP TO:

80%

2027\*

STEP 4

STEP 3

40%

2022\*

STEP 3

STEP 2

20%

\* NEW TARGET  
DEADLINES



PART 9  
BUILDINGS



PART 3  
BUILDINGS

Energy-efficiency improvement  
above 2018 BC Building Code  
requirements

ENERGY  
**STEP**CODE  
BUILDING BEYOND THE STANDARD





# Performance Compliance

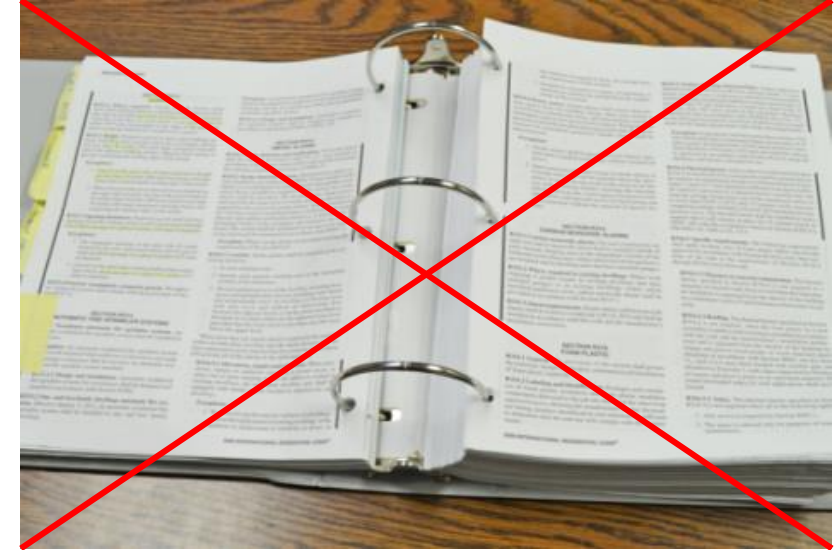


Energy Modeling by Natural Resources Canada Certified Energy Advisor



Air-Tightness Testing

- Achieve minimum performance levels

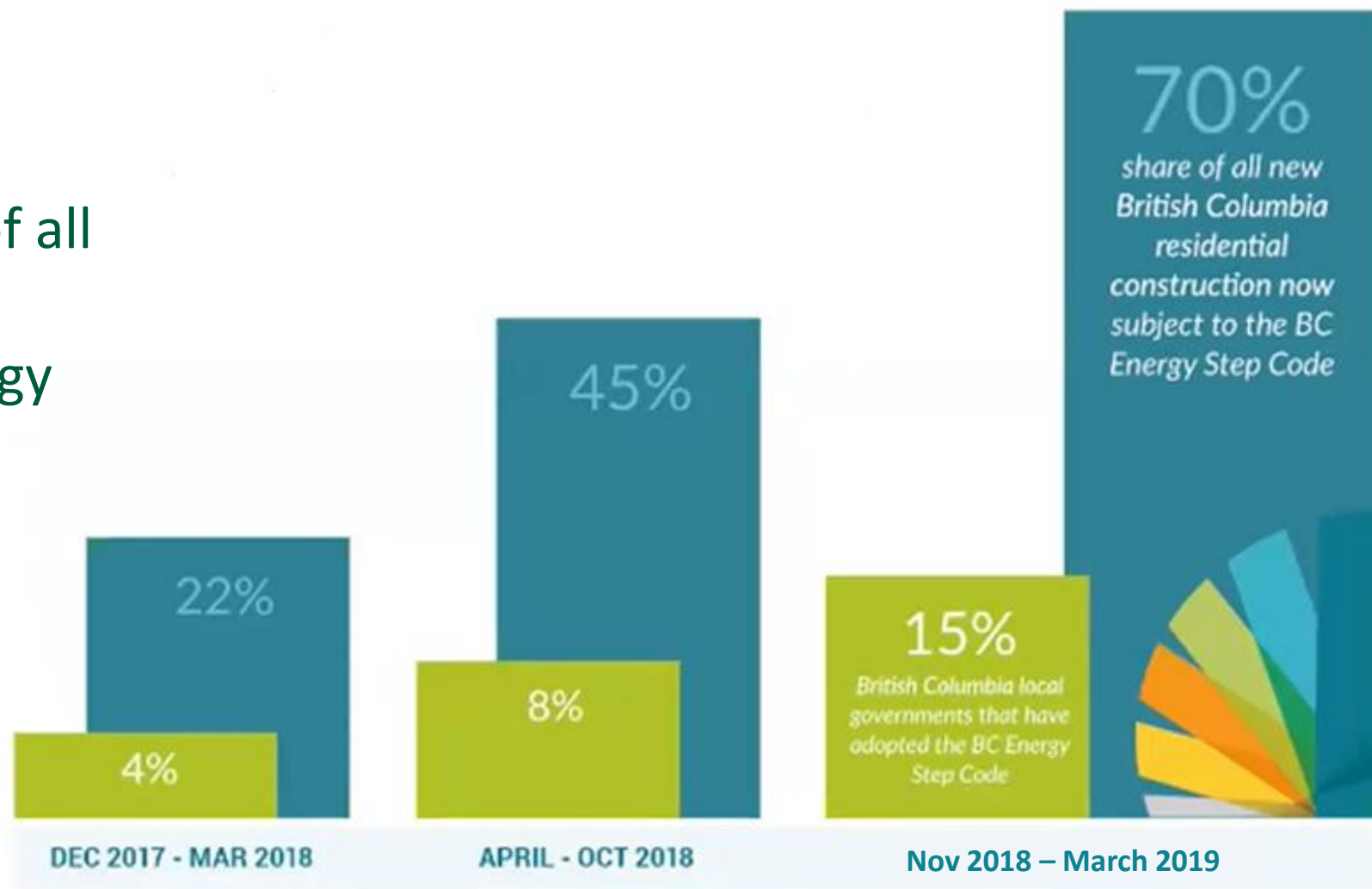


No Prescriptive Energy Requirements

# Step Code Status – LG Adoption in Bylaws

## Policy in Practice:

- Communities that collectively issue 70% of all building permits have referenced the BC Energy Step Code in bylaws.



# Consultation / Bylaw Adoption - Sunshine Coast

BC Energy Step Code in a policy, program or bylaw  
[https://energystepcode.ca/implementation\\_updates/](https://energystepcode.ca/implementation_updates/)

## **Consulting on the BC Energy Step Code**

62. Town of Gibsons – Feb. 20, 2020

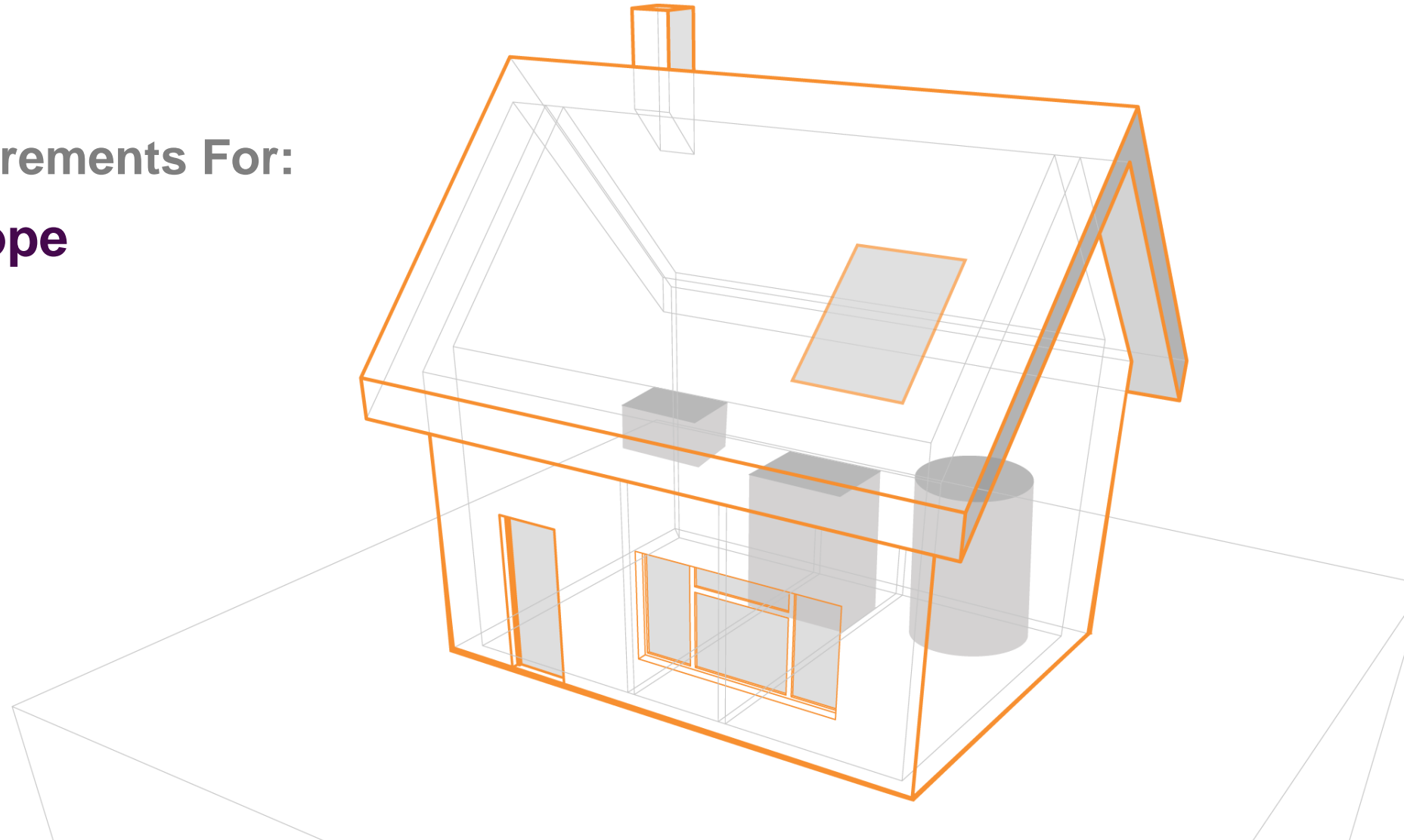
63. District of Sechelt – March 2, 2020

64. Sunshine Coast Regional District – March 6, 2020

# What Does the BC Energy Step Code Measure?

Performance Requirements For:

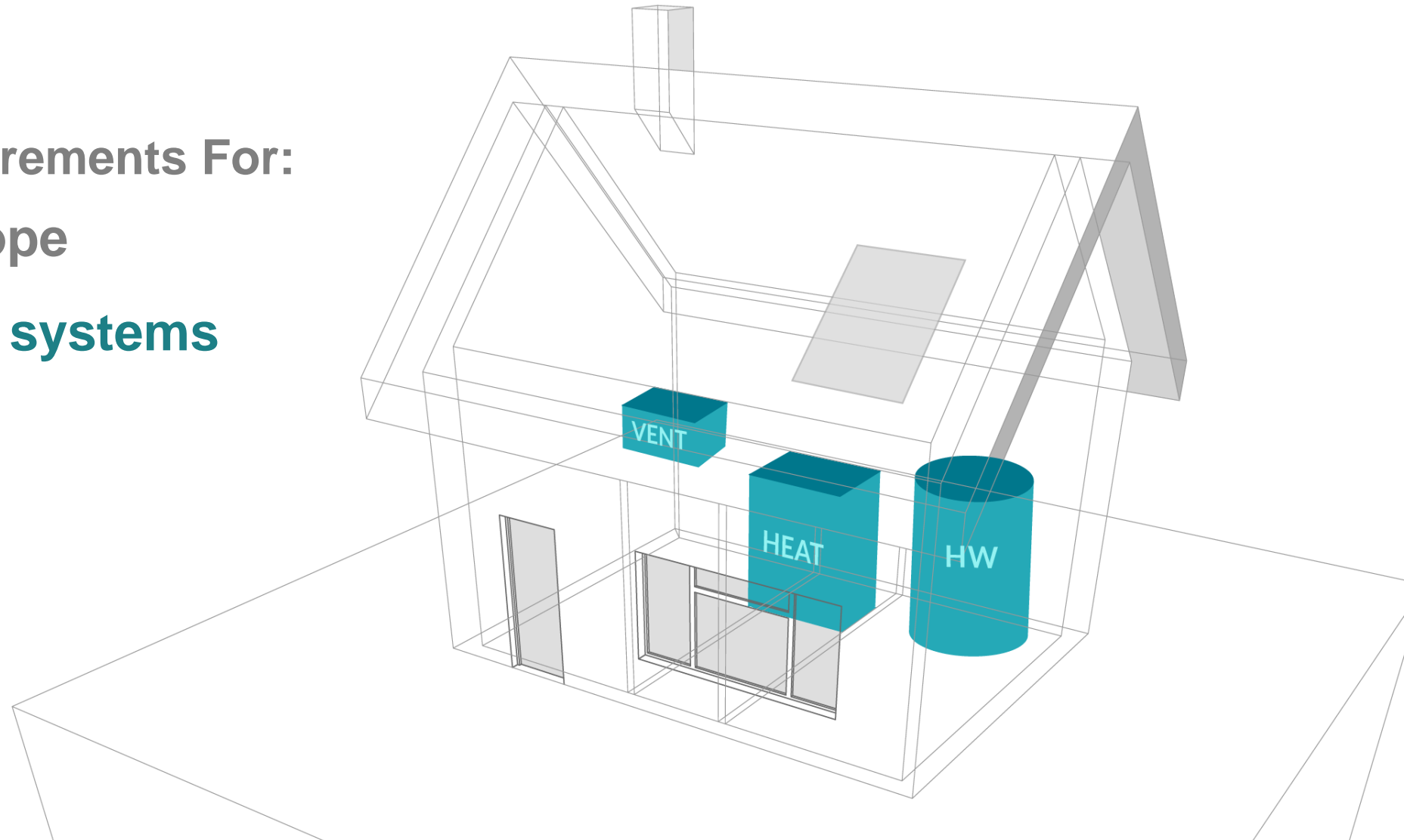
✓ **Building envelope**



# What Does the BC Energy Step Code Measure?

Performance Requirements For:

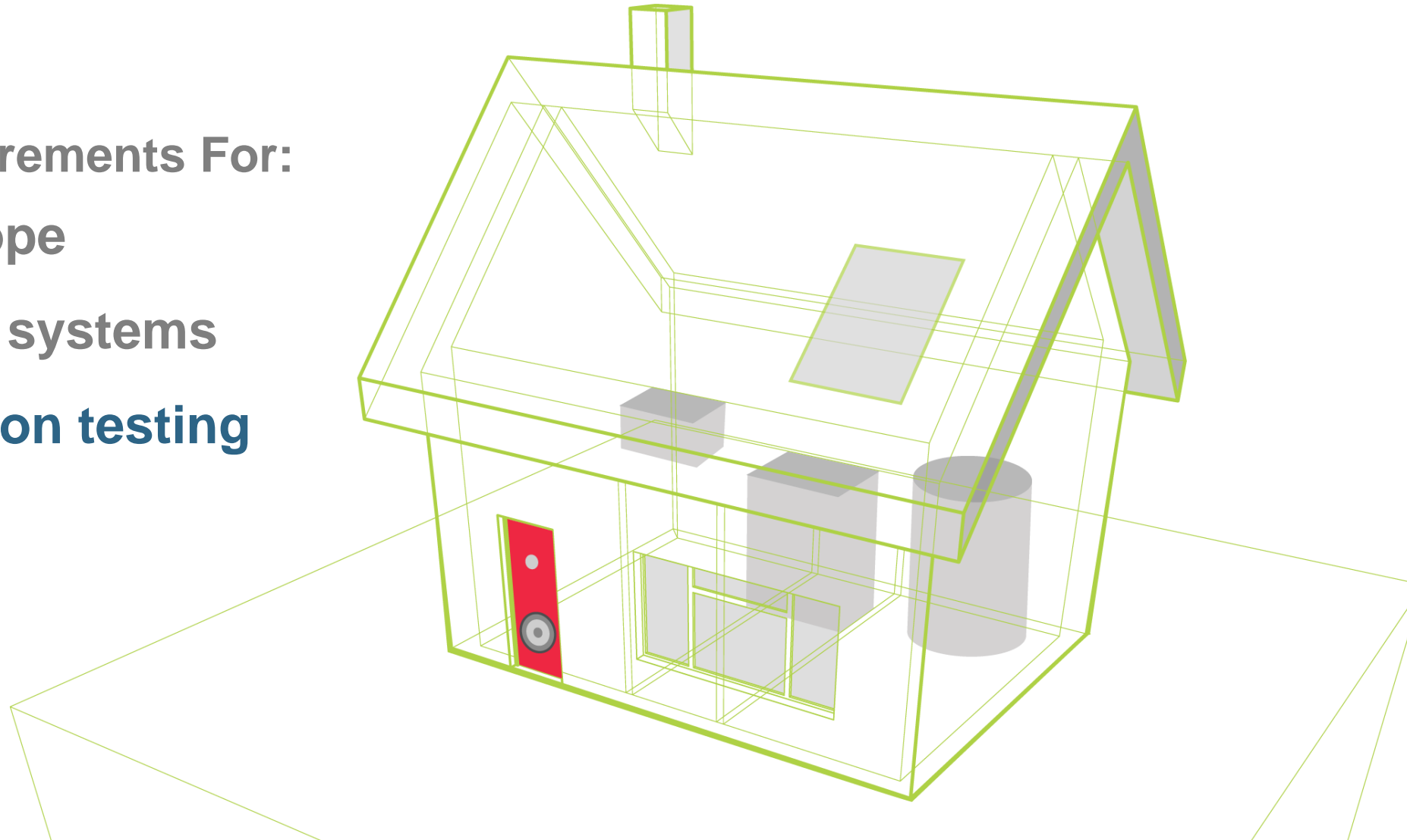
- ✓ Building envelope
- ✓ Equipment and systems



# What Does the BC Energy Step Code Measure?

Performance Requirements For:

- ✓ Building envelope
- ✓ Equipment and systems
- ✓ **Post-construction testing**
  - Airtightness



# Step 3, Hassle-Free:

British Columbia homes  
that cost-effectively meet  
the energy efficiency requirements  
of the BC Energy Step Code





# Five projects that point to the future of B.C. home performance

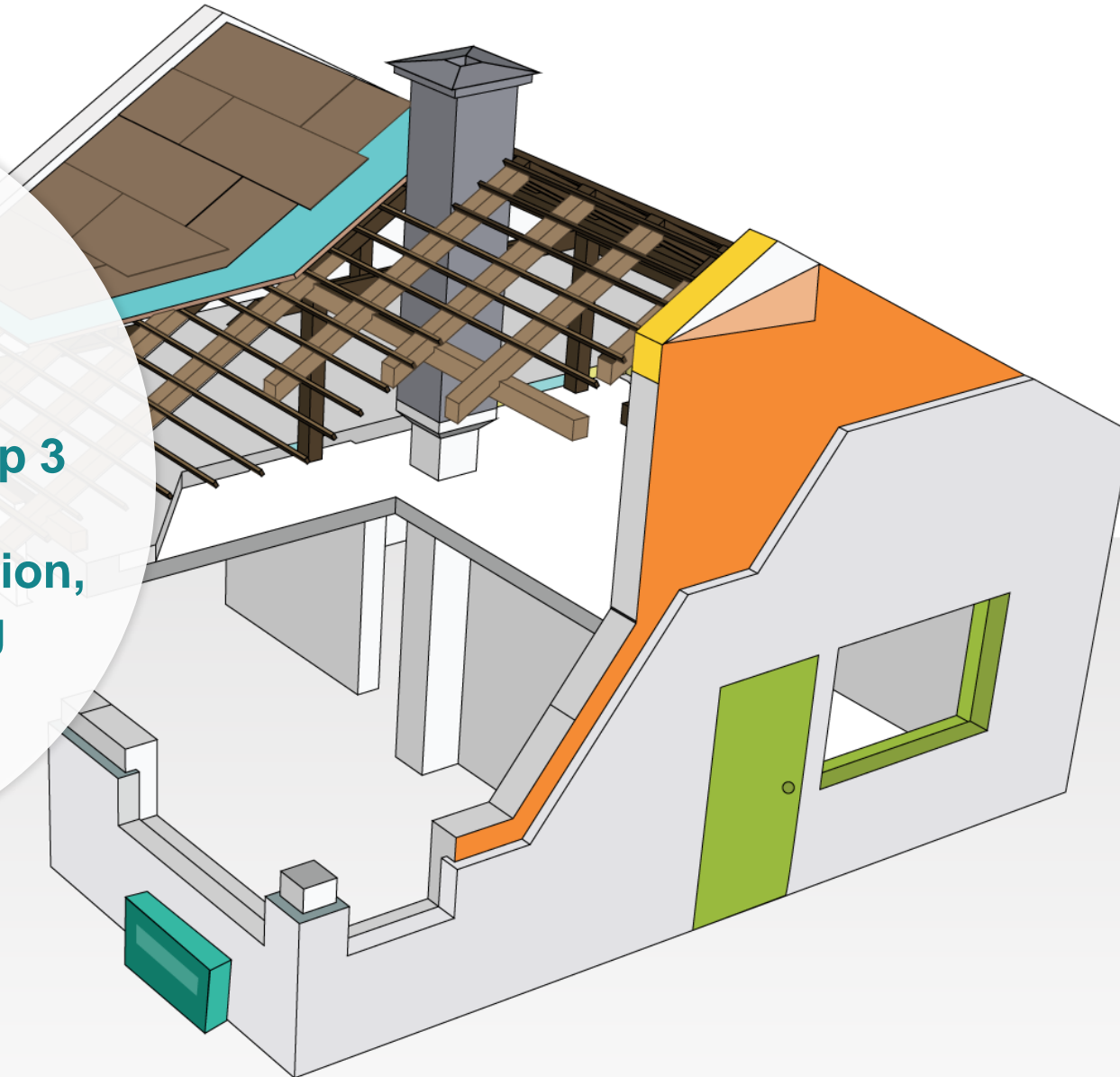




# A look inside a typical Step 3 Home

## Six Proven Strategies

Builders can meet Step 3 by paying attention to details, adding insulation, and carefully planning mechanical systems.



# The Six Strategies that cost-effectively boost performance

## 1. BOOST INSULATION

To reduce heat loss, increase insulation in walls, floors, roof, and foundation.



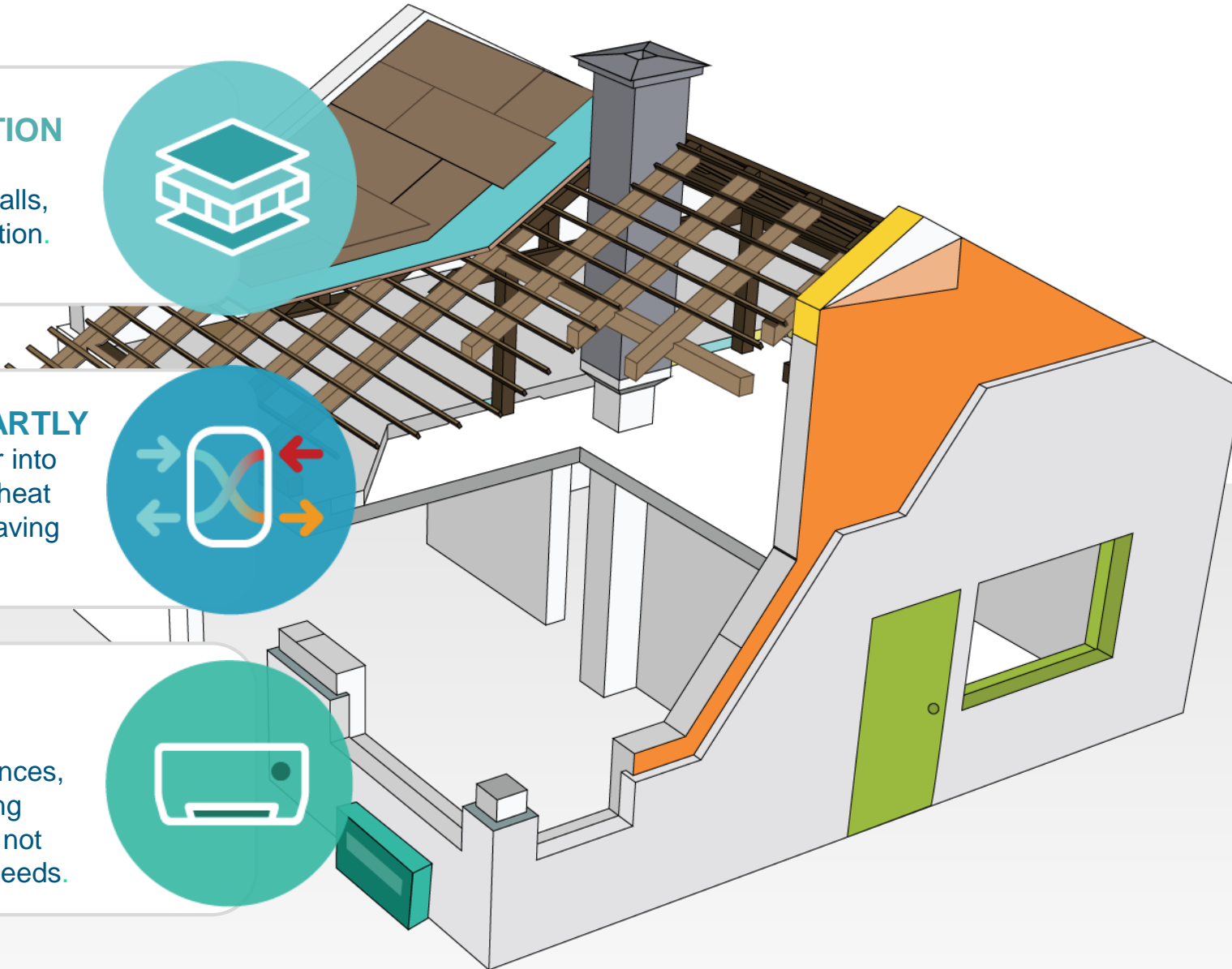
## 2. VENTILATE SMARTLY

Bring plenty of fresh air into the home and recover heat from the exhaust air leaving the building.

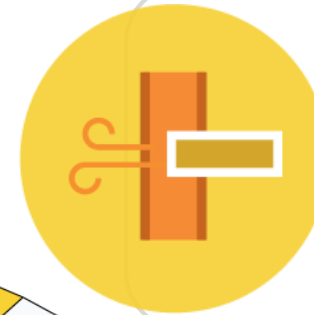
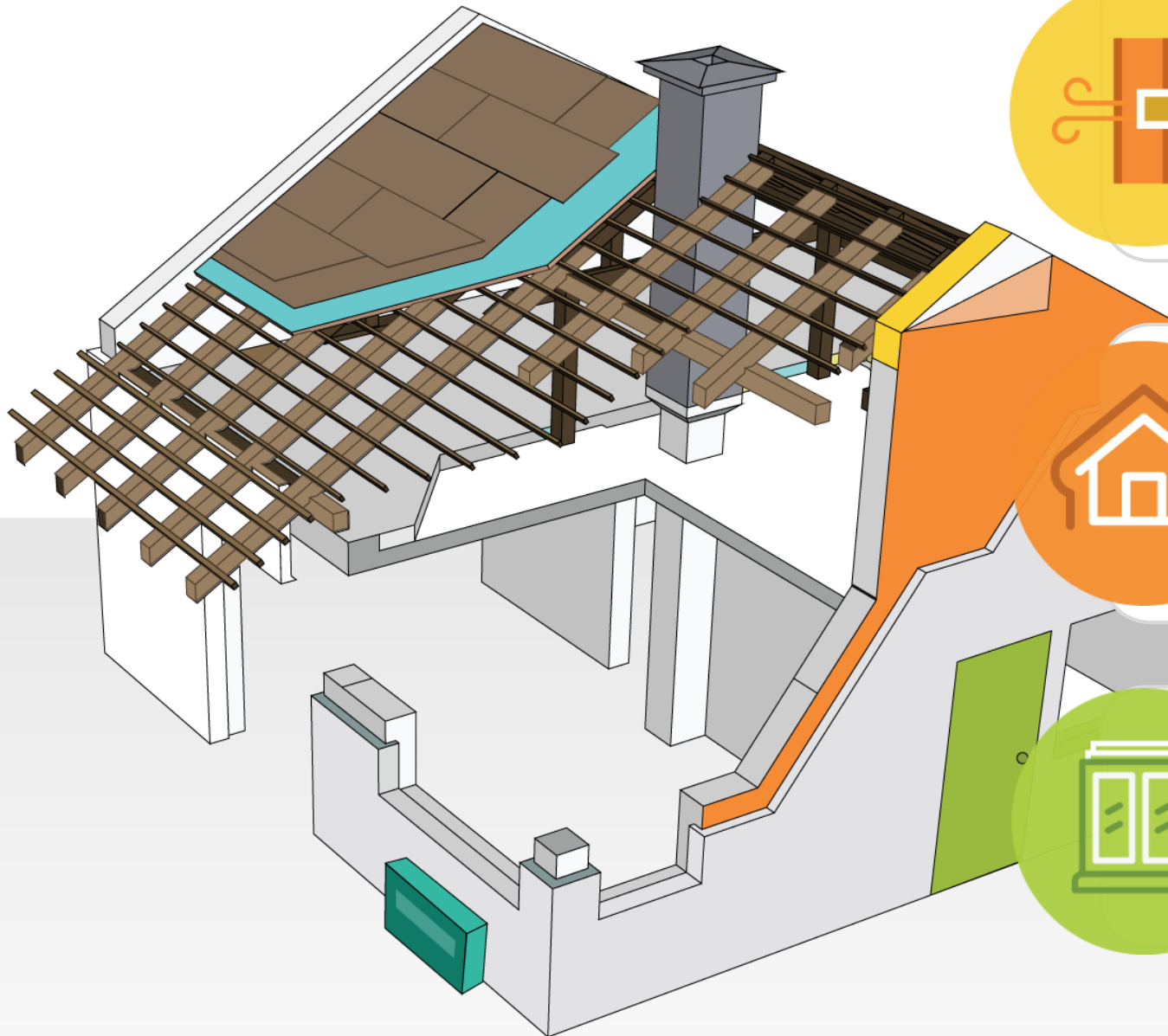


## 3. MIND YOUR MACHINES

Specify efficient appliances, and ensure your heating system will meet – but not exceed – the home's needs.



# The Six Strategies that cost-effectively boost performance



## 4. BAN BRIDGES

A break in your insulation acts like a bridge that carries heat straight out of the house. Take care with corners, junctions, gaps and studs!



## 5. SEAL IT UP

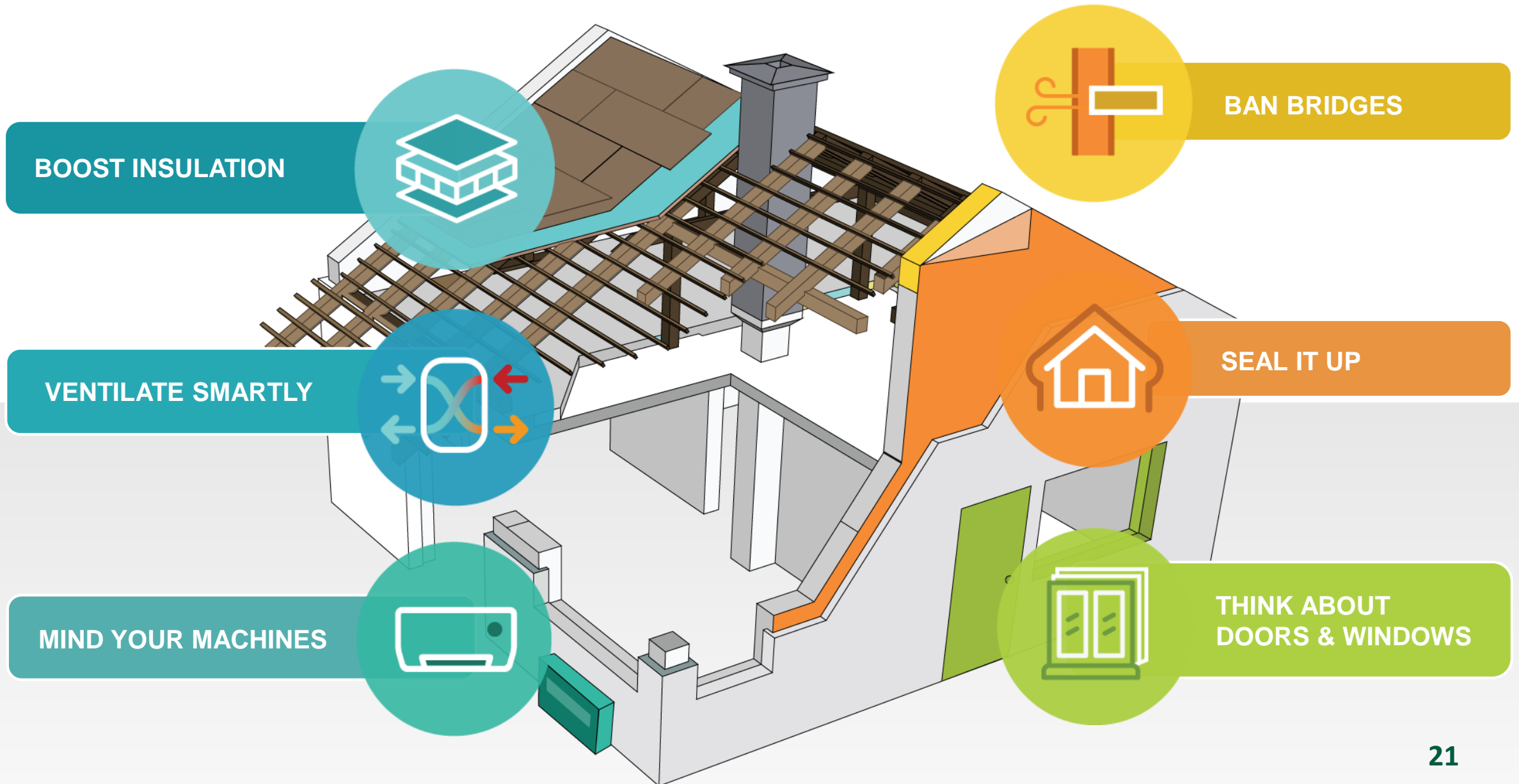
Air leaks are heat leaks. Wrap the home tightly, taking care to seal around ducts, pipes, fixtures, and wires that pass through walls, ceilings, and roof.



## 6. THINK ABOUT DOORS & WINDOWS

Carefully consider their energy performance, size, and location.

# The Six Strategies that cost-effectively boost performance





## CASE STUDY: Maryland Residence, Campbell River





## CASE STUDY: Maryland Residence, Campbell River

Climate zone: 5

Project size: 2,525 square feet

Build cost: \$381,564, or \$151/square foot

Step achieved: 3

**0% above**  
cost to build to the  
energy efficiency  
requirements of the  
BC Building Code

“A high efficiency heat pump keeps the occupants warm through the chilly and damp northern Vancouver Island winters—and cools the place in the summer when needed.”



## CASE STUDY: Maryland Residence, Campbell River



### SEAL IT UP

A squirt of **spray foam** targeted **air leaks** along the outside edges of the first and second floors.

### MIND YOUR MACHINES

A **tankless on-demand natural gas water heater** serves up abundant hot water, and allowed the builder to access an energy-efficiency incentive program.





# Energy Coach

Energy Coach: 1-844-881-9790

betterhomesbc.ca

 Incentive Search

[About Us](#)

[Contact Us](#)



## Energy Coach

The Energy Coach is a free coaching service for homeowners and commercial building owners and managers in British Columbia. Energy Coaches are trained energy efficiency specialists who provide building-science based information about the options and opportunities to improve the energy efficiency of your home or building. They are available to answer your questions at all stages of your energy improvement project. Energy Coach services are available for homeowners and commercial building owners or managers.

### Energy Coach services include:

- Access to Energy Coaches via a toll-free hotline and e-mail
- Information and advice about energy efficiency upgrades and incentives
- If needed, directing you to appropriate program representative



# Home Owner Benefits

- **Lower energy bills:** lower energy consumption reduces operation costs
- **Comfort:** minimizes warm and cold spots
- **Quiet:** increased insulation levels and better windows can reduce outside noise
- **Durable:** focus on envelope first, minimum requirements beyond building code
- **Peace of mind:** third part verified by trained energy advisor



Highly Encouraged: Mid Construction Blower Door Test  
Check: **betterhomesbc.ca** for utility incentives

# Research and Support Resources



| UTILITIES



- Resource hub: ***energystepcode.ca***
- Training and capacity assessment
- Costing study
- Local government readiness survey
- Peer network for local government staff
- Webinars and presentations
- Design Guide
- **Illustrated Builders Guide**

# Concluding Comments

- BC Energy Step Code was developed with input from the building industry, & is supported by many other partners
- The base BC Building Code is heading in this direction regardless, but communities can use the Step Code to help the building industry prepare
- High performance homes are already being built across BC

# Concluding Comments

- BC Energy Step Code is a useful tool to:
  - Help the building industry prepare for future code changes
  - Create healthier & better buildings
  - Help customers understand choices (like vehicle miles/gallon ratings)
  - Reduce GHG emissions / energy consumption

# Thank You

**Trish Dehnel**

Community Energy Association, Nelson  
250-505-3246

[pdehnel@communityenergy.bc.ca](mailto:pdehnel@communityenergy.bc.ca)



**Community Energy**  
Association

# A Unified and Transparent Focus on Performance



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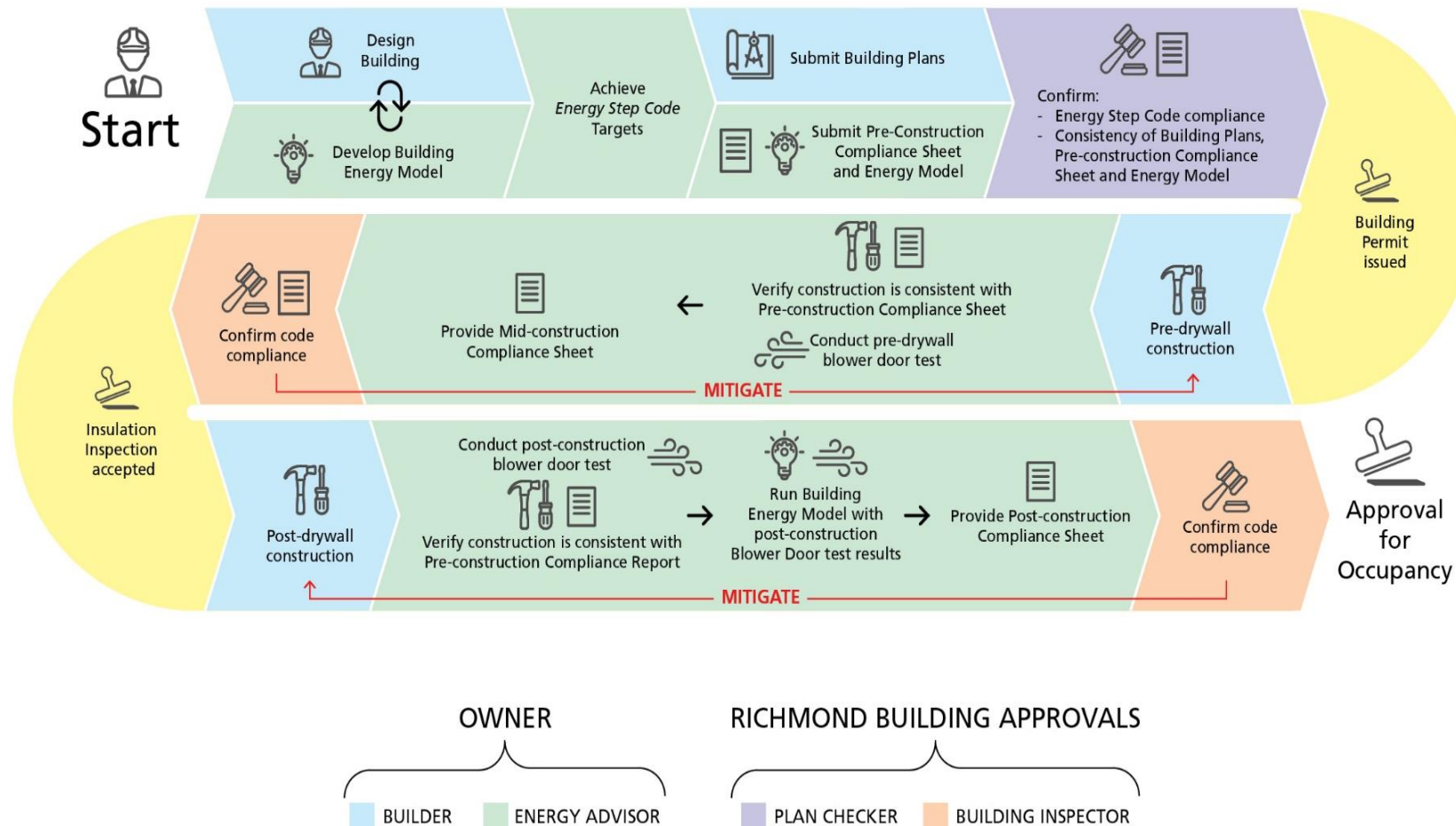
Information Session for the Sunshine Coast Builders- Step Code Intro

Presenter Cristi May Sacht- Energy Advisor, Building Science Instructor

# **Overview of Step Code Integrated Design Process (IDP)**

- Changes to the Design and Build Processes
- Working with Energy Advisor
- Key Principals of High Performance Buildings

# IDP Example Step Code Flow Chart

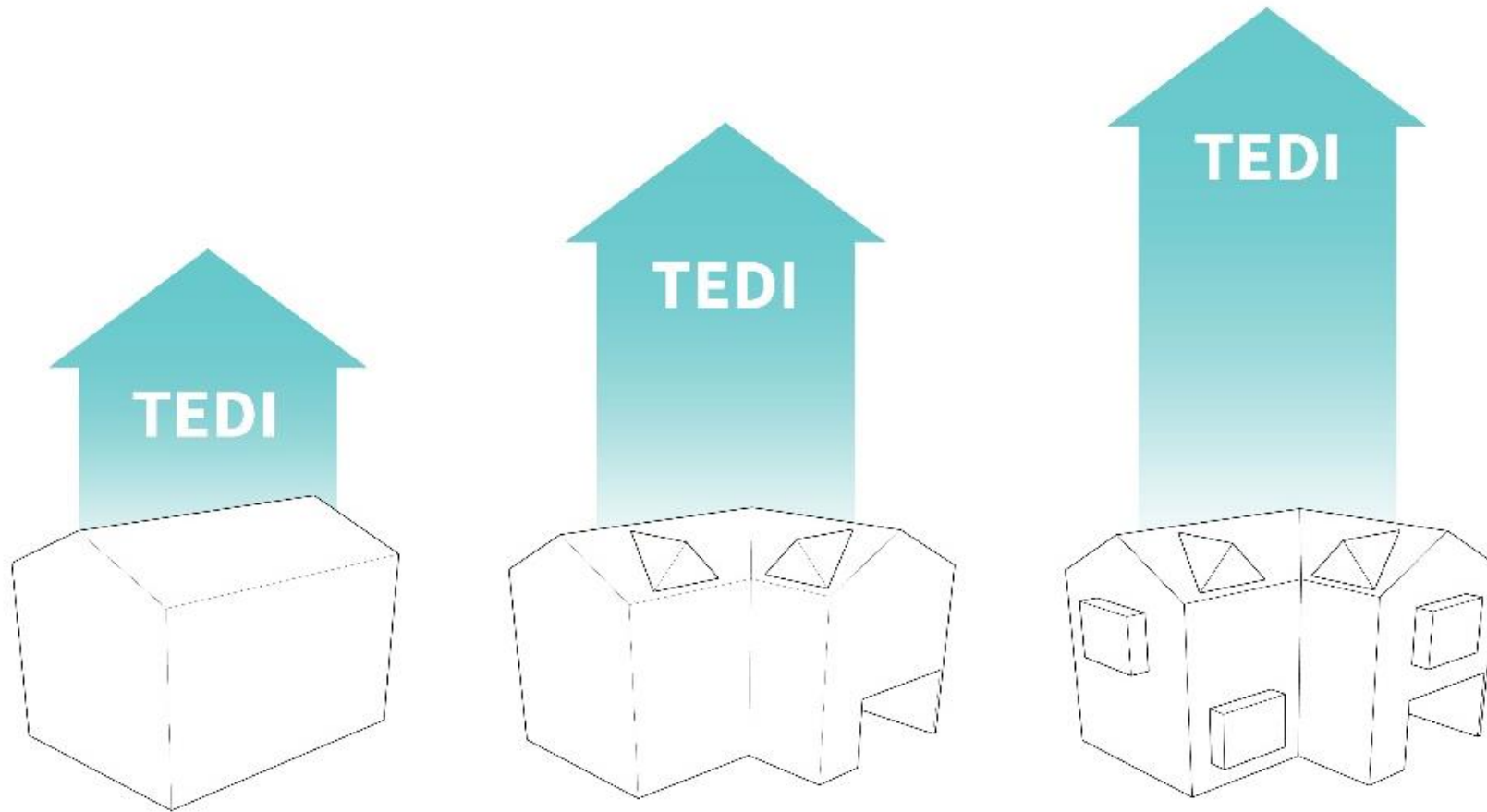


## IDP Framework:

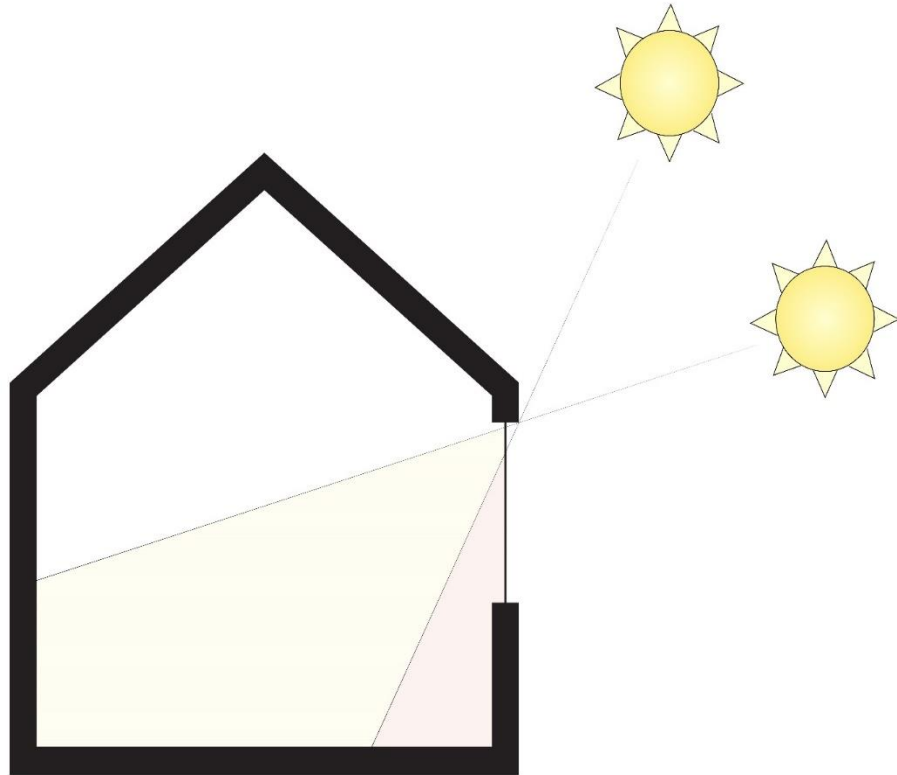
1. Design/Project Performance
2. Consult/confirm specifications
3. Apply for Build Permit & start build
4. Mid-construction evaluation
5. Seal up all leaks
6. Complete construction
7. Final air change & confirm build specs.
8. Occupancy permit
9. Apply for any available incentives



# Design Strategies – Building Form



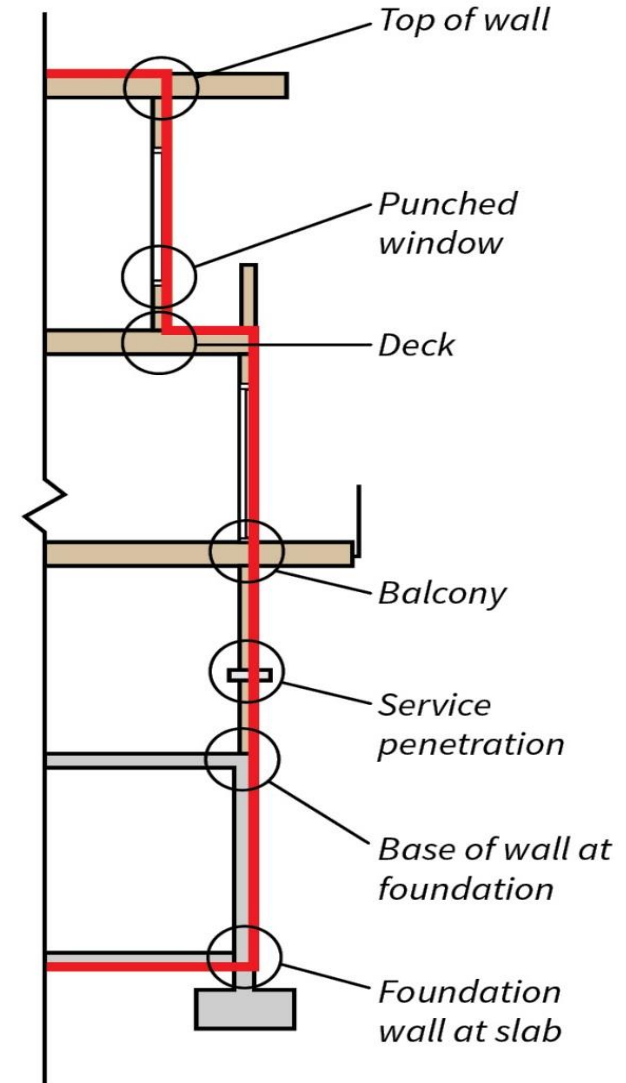
# Design Strategies – Solar Angles



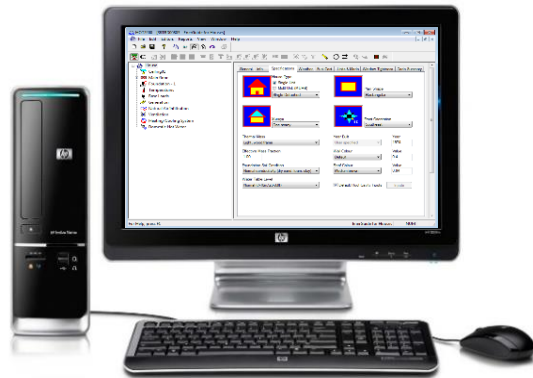
Notice the shade line from overhangs in July.



# Air Barrier Strategies – Detailing



# The BC Energy Step Code- Working with an Energy Advisor (EA)



+



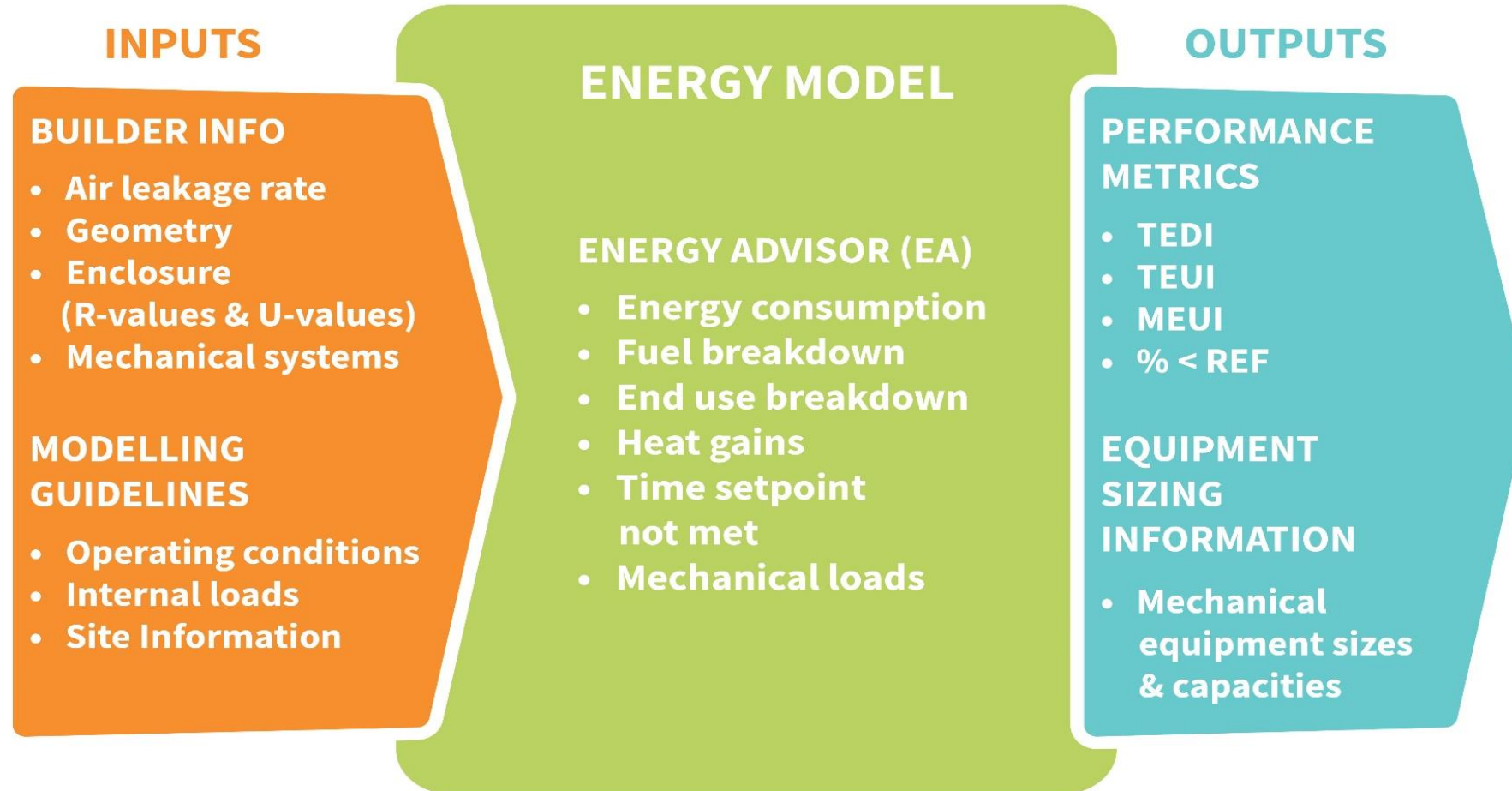
**Performance  
Approach =  
Energy Modeling**

**Air-Tightness  
Testing**



**No More  
Prescriptive  
Requirements**

# Working with Energy Advisor





# Part 9 Step Code Compliance Report

Available from [www.gov.bc.ca](http://www.gov.bc.ca)

## PRE-CONSTRUCTION

### BC ENERGY COMPLIANCE REPORT - PERFORMANCE PATHS FOR PART 9 BUILDINGS

For Buildings Complying with Subsection 9.36.5. or 9.36.6. of the 2012 BC Building Code (see BCBC Article 2.2.8.3. of Division C)

#### A: PROJECT INFORMATION

Building Permit #: \_\_\_\_\_ Building Type: **Please Select Building Type**  
Builder: \_\_\_\_\_ If Other, Please Specify: \_\_\_\_\_  
Project Address: \_\_\_\_\_ Number of Dwelling Units: \_\_\_\_\_  
Municipality / District: \_\_\_\_\_ Climate Zone: **Please Select Climate Zone**  
Postal Code: \_\_\_\_\_ PID or Legal Description: \_\_\_\_\_

#### BC Building Code Performance Compliance Path (select one):

☐ 9.36.5. → Complete Sections A, B, C, & E ☐ 9.36.6. → Complete Sections A, B, D, & E

Software Name: \_\_\_\_\_ Version: \_\_\_\_\_ Climatic Data (Location): \_\_\_\_\_

#### B: BUILDING CHARACTERISTICS SUMMARY (see BCBC Clause 2.2.8.3.(2)(b) of Division C)

	DETAILS (ASSEMBLY / SYSTEM TYPE / FUEL TYPE / ETC.)	EFFECTIVE RSI-VALUE / EFFICIENCY
EXTERIOR WALLS & FLOOR HEADERS		
ROOF / CEILINGS		
FOUNDATION WALLS, HEADERS, & SLABS	Slab Is: <input type="checkbox"/> Below OR <input type="checkbox"/> Above Frost Line AND <input type="checkbox"/> Heated OR <input type="checkbox"/> Unheated	
FLOORS OVER UNHEATED SPACES		
FENESTRATION & DOORS	FDWR: _____ %	
AIR BARRIER SYSTEM & LOCATION		
SPACE CONDITIONING (HEATING & COOLING)		
SERVICE WATER HEATING		
VENTILATION		
OTHER ENERGY IMPACTING FEATURES		

The above information is correct based on drawings prepared by \_\_\_\_\_, dated (dd/mm/yyyy) \_\_\_\_\_.

#### C: 9.36.5. ENERGY PERFORMANCE COMPLIANCE (see Clause 2.2.8.3.(2)(c) of Division C)

Complete this section only if using the Energy Performance Compliance Path in Subsection 9.36.5.

PROPOSED HOUSE RATED ENERGY CONSUMPTION (GJ/YEAR)		REFERENCE HOUSE RATED ENERGY TARGET (GJ/YEAR)	
HVAC		HVAC	
Hot Water Heating		Hot Water Heating	
SUM		SUM	

The airtightness value used in the energy model calculations for the Proposed House is:

☐ 4.5 ACH @ 50Pa ☐ 3.5 ACH @ 50Pa OR Tested At \_\_\_\_\_ ACH @ 50Pa

The above calculation was performed in compliance with Subsection 9.36.5. of Division B: ☐ Yes ☐ No

#### D: 9.36.6. ENERGY STEP CODE COMPLIANCE (see Sentence 2.2.8.3.(3) of Division C)

Complete this section only if using the Energy Step Code Compliance Path in Subsection 9.36.6.

Proposed House Rated Energy Consumption (GJ/year): \_\_\_\_\_ Reference House Rated Energy Target (GJ/year): \_\_\_\_\_

METRIC	UNITS	REQUIRED	PROPOSED
Step Code Level	Step 1, 2, 3, 4, or 5		
Mechanical Energy Use Intensity (MEUI)	kWh/(m <sup>2</sup> -year)	(max)	
ERS Rating % Lower Than EnerGuide Reference House, where applicable	%	(min)	
Thermal Energy Demand Intensity (TEDI)	kWh/(m <sup>2</sup> -year)	(max)	
Peak Thermal Load (PTL)	W/m <sup>2</sup>	(max)	
Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	(max)	
Step Code Design Requirements Met: <input type="checkbox"/>			

The above calculation was performed in compliance with (see Clause 2.2.8.3.(2)(e) of Division C)

Select One:

- ☐ Subsection 9.36.5.,  
☐ The Passive House Planning Package (PHPP), version 9 or newer, and the energy model was prepared by a Certified Passive House Designer or Certified Passive House Consultant,  
☐ The EnerGuide Rating System (ERS), version 15 or newer, or  
☐ The applicable requirements of NECB Part 8 and the City of Vancouver Energy Modelling Guidelines.

#### E: COMPLETED BY

Full Name (Print): \_\_\_\_\_ If applicable, enter ERS information:  
Company Name: \_\_\_\_\_ Advisor ID Number: \_\_\_\_\_  
Phone: \_\_\_\_\_ Service Organization: \_\_\_\_\_  
Address: \_\_\_\_\_ EnerGuide P #: \_\_\_\_\_  
Email: \_\_\_\_\_  
Date (dd/mm/yyyy): \_\_\_\_\_

# Part 9 Step Code Mid-Construction Report

## MID-CONSTRUCTION

### BC STANDARD VERIFICATION REPORT – PERFORMANCE PATHS FOR PART 9 BUILDINGS

For Buildings Complying with Subsection 9.36.5. or 9.36.6. of the 2018 BC Building Code (see BCBC Article 2.2.8.3. of Division C)

#### A: PROJECT INFORMATION

Building Permit #:	Building Type:	Step Required:
Project Address:	Building #:	ERS File: (if applicable)
Builder:	Company:	
Builder E-Mail:	Phone #:	

Energy Advisor (EA):	Company:
EA ID Number:	Service Organization:
EA E-Mail:	Phone #:

#### B: AIR TIGHTNESS

INTERIOR VOLUME OF BUILDING	REQUIRED ACH <sub>50</sub>	DESIGN HOUSE ACH <sub>50</sub>
<input type="checkbox"/> m <sup>3</sup>		
<input type="checkbox"/> ft <sup>3</sup>		

#### AIR BARRIER SYSTEM & LOCATION:

##### Above-grade Walls:

Interior:	<input type="checkbox"/> N/A	<input type="checkbox"/> Sealed polyethylene	<input type="checkbox"/> Airtight drywall	<input type="checkbox"/> Spray foam	<input type="checkbox"/> Other (describe below)
Exterior:	<input type="checkbox"/> N/A	<input type="checkbox"/> Sealed membrane	<input type="checkbox"/> Taped sheathing	<input type="checkbox"/> Sealed insulation	<input type="checkbox"/> Other (describe below)
Other:					

##### Attic:

Interior:	<input type="checkbox"/> N/A	<input type="checkbox"/> Sealed polyethylene	<input type="checkbox"/> Sealed interior sheathing	<input type="checkbox"/> Spray foam	<input type="checkbox"/> Other (describe below)
Exterior:	<input type="checkbox"/> N/A	<input type="checkbox"/> Sealed sheathing membrane	<input type="checkbox"/> Other (describe below)		
Other:					

Date of Test:	Measured Air Leakage	Method used to calculate ACH <sub>50</sub> score	ACH <sub>50</sub> Score
	<input type="checkbox"/> l/s _____ Pa (document maximum pressure differential) <input type="checkbox"/> Pressurized <input type="checkbox"/> Depressurized	<input type="checkbox"/> Measured Air Leakage data extrapolated by HOT2000. <input type="checkbox"/> ACH @ 50Pa (flow at 50Pa result from manometer) <input type="checkbox"/> Other (describe on attached sheet)	
			ACH <sub>50</sub> Score

#### C: BUILDING ENVELOPE CHARACTERISTICS SUMMARY

no changes from Pre-Construction Report

	DETAILS (ASSEMBLY / SYSTEM TYPE / FUEL TYPE / ETC.)	EFFECTIVE RSI-VALUE / EFFICIENCY	UPGRADE HAS BEEN INSTALLED	CANNOT VERIFY INSTALLATION OF UPGRADE
Include all energy upgrades relative to minimum BCBC 9.36.5. prescriptive pathway requirements. Include all items that would not achieve BCBC 9.36.5. prescriptive pathway requirements. Strike out <del>existing</del> upgrades and/or specifications that will not be installed. Underline <u>new</u> or new upgrades and/or specifications.				
EXTERIOR WALLS & FLOOR HEADERS			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
ROOF / CEILINGS			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
FOUNDATION WALLS, HEADERS & SLABS	Slab Is: <input type="checkbox"/> Below <input type="checkbox"/> Above First Line and: <input type="checkbox"/> Heated <input type="checkbox"/> Unheated		<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
FLOORS OVER UNHEATED SPACES			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
PENETRATION & DOORS			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *

\* describe on attached sheet

#### D: BUILDING EQUIPMENT CHARACTERISTICS SUMMARY

no changes from Pre-Construction Report

	DETAILS (ASSEMBLY / SYSTEM TYPE / FUEL TYPE / ETC.)	EFFECTIVE RSI-VALUE / EFFICIENCY	UPGRADE HAS BEEN INSTALLED	CANNOT VERIFY INSTALLATION OF UPGRADE
Include all energy upgrades relative to minimum BCBC 9.36.5. prescriptive pathway requirements. Include all items that would not achieve BCBC 9.36.5. prescriptive pathway requirements. Strike out <del>existing</del> upgrades and/or specifications that will not be installed. Underline <u>new</u> or new upgrades and/or specifications.				
SPACE CONDITIONING (HEATING & COOLING)			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
SERVICE WATER HEATING			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
VENTILATION			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *
OTHER ENERGY IMPACTING FEATURES			<input type="checkbox"/> As specified <input type="checkbox"/> Not as specified * _____ (dd/mm/yyyy)	<input type="checkbox"/> No upgrade <input type="checkbox"/> Not yet installed <input type="checkbox"/> Unable to verify * <input type="checkbox"/> Other *

\* describe on attached sheet

The building as built to date conforms to the energy model submitted for the Building Permit:

☐ Yes ☐ No

The building as built to date is likely on track to achieve the required Energy Step Code performance:

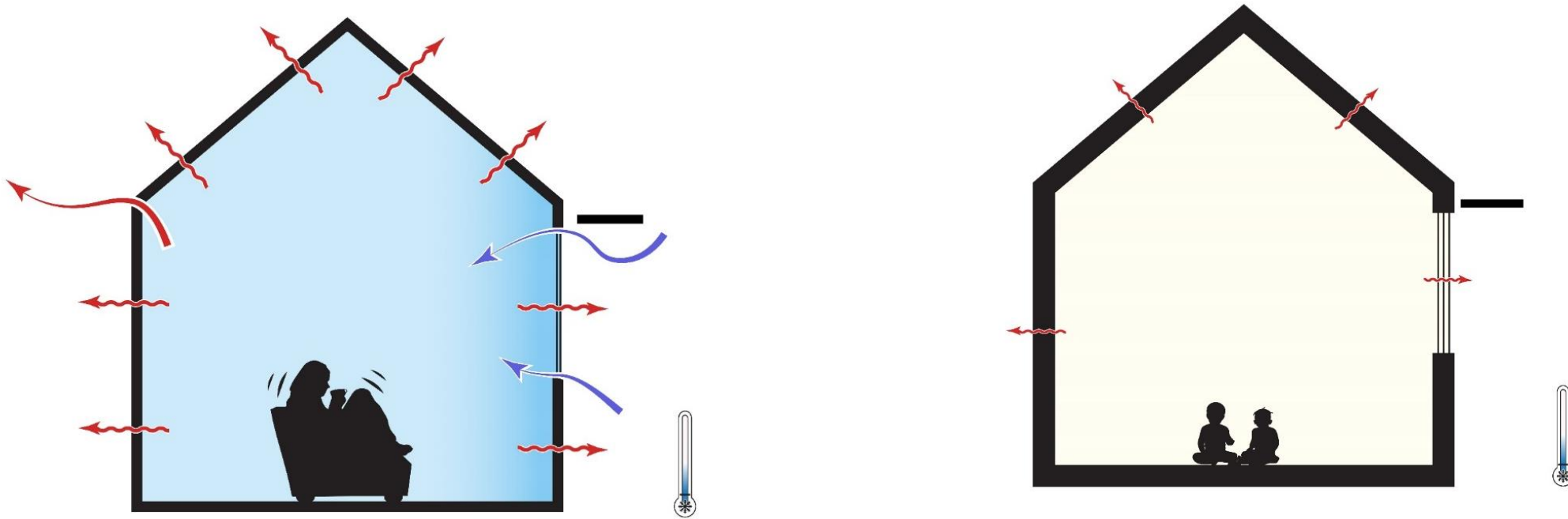
☐ Yes ☐ No

I hereby certify that:

- The measured air leakage result represents the actual result obtained during the test,
- The extrapolated ACH score was derived using the method (extrapolated, real test, or other) as noted above,
- I personally conducted an on-site check to verify correct installation of the upgrades outlined in the summaries C and D above.

Signed by Energy Advisor / energy modeller: \_\_\_\_\_ Full Name: \_\_\_\_\_ dated: \_\_\_\_\_  
(print) (dd/mm/yyyy)

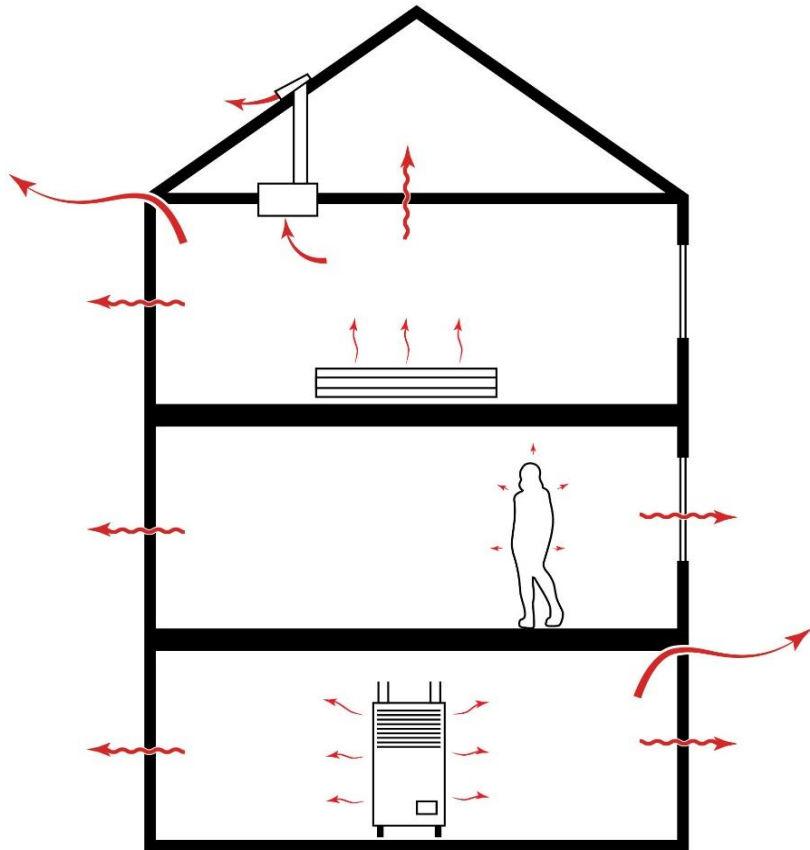
# Design Strategy: Enclosure First Approach



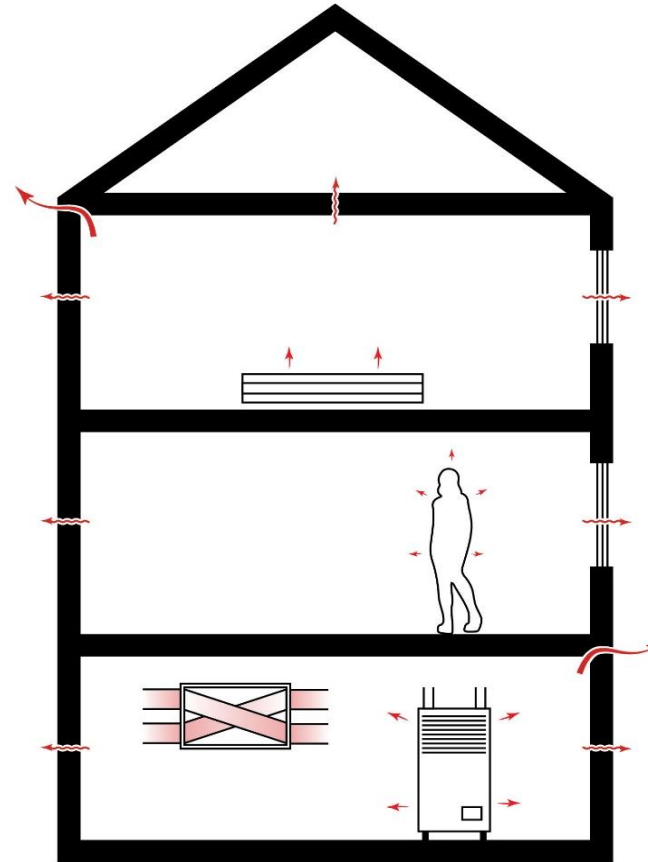
**High Performance = Address air-leakage, add insulation and improve windows all before selecting & sizing mechanicals**



# Upgraded Building Enclosure & HVAC Systems

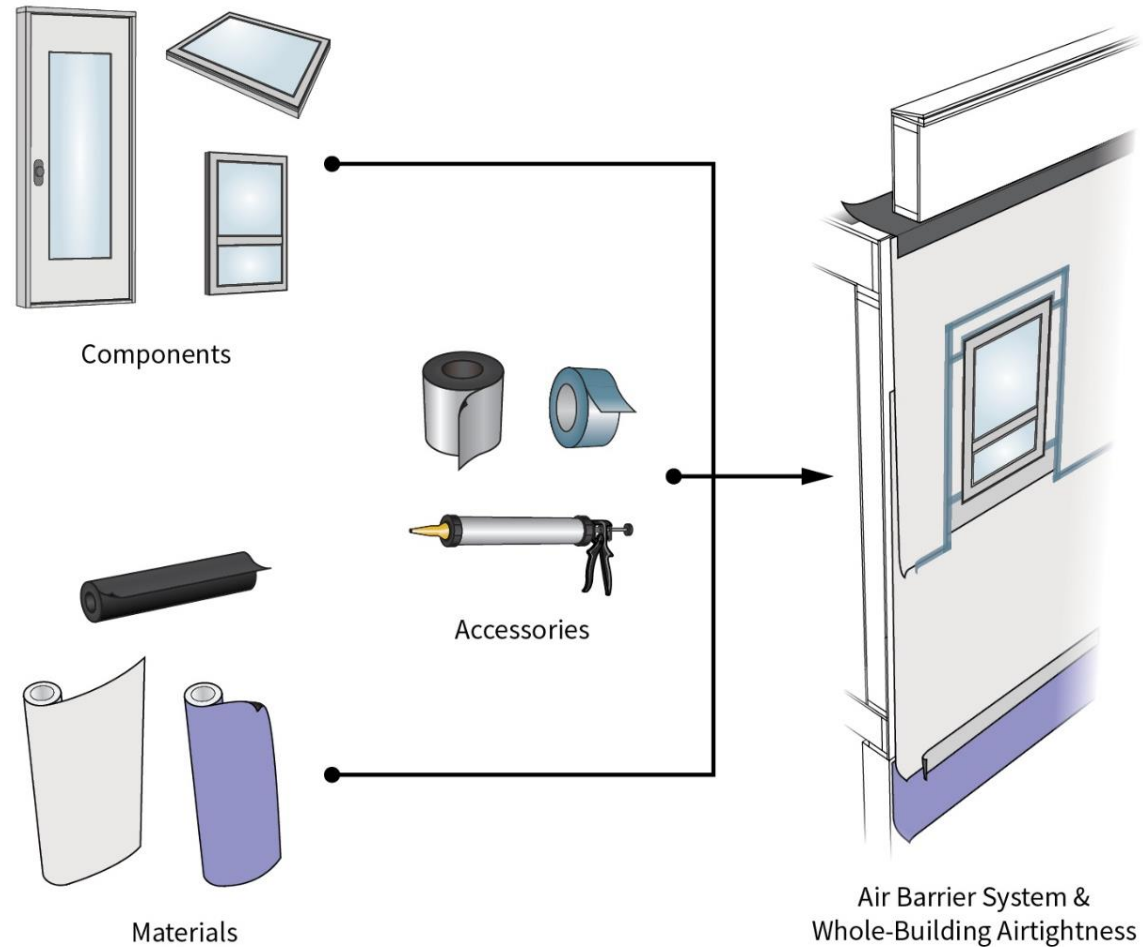


**Past – air-leaky,  
low insulation  
levels, code  
minimum  
windows, large  
mechanical  
system to  
compensate**



**Future - air-tight,  
more insulation,  
less thermal  
bridging, better  
U-value windows,  
heat-recovery  
ventilation, small  
mechanical  
system needed**

# Air Barrier as a System & On-Site Quality Control & “Air Boss”



# Air Barrier – On-Site Quality Control & “Air Boss”





<http://www.energystepcode.ca>

Helping British Columbia meet its goal  
that all new buildings be net-zero  
energy ready by 2032.

Resources

ALL RESOURCES

FOR LOCAL GOVERNMENTS

FOR INDUSTRY

FOR HOMEOWNERS

BC ENERGY STEP CODE  
REQUIREMENTS

COMPLIANCE TOOLS FOR  
PART 9 BUILDINGS

CASE STUDIES

INCENTIVE PROGRAMS

PUBLICATIONS

TRAINING OPPORTUNITIES

VIDEOS

## BACKGROUND

The BC Energy Step Code is an optional compliance path in the BC Building Code that local governments may use, if they wish, to incentivize or require a level of energy efficiency in new construction that goes above and beyond the requirements of the BC Building Code. Builders may voluntarily use the BC Energy Step Code as a new compliance path for meeting the energy-efficiency requirements of the BC Building Code. [Learn more about the BC Energy Step Code and local government implementation efforts.](#)

# Discussions & Questions

Gratitude to the Sunshine Coast Builders for attending & for the Town of Gibsons for organizing this educational event & all of our event sponsors!

CRISTI MAY SACTH

CRISTI@ELEMENTALENERGYADVISORS.CA



**Elemental Energy Advisors**

**ENERGY**  
**STEP**CODE  
BUILDING BEYOND THE STANDARD

