

Capital Regional District BC Energy Step Code Workshop Series

LOCAL GOVERNMENT POLICY AND IMPLEMENTATION WORKSHOP
NOVEMBER 30, 2017

Agenda

1. INTRODUCTION TO CRD PROGRAM & THE BC ENERGY STEP CODE

2. LOCAL GOVERNMENT PERSPECTIVES: THE BC ENERGY STEP CODE

- Capital Regional District
- City of New Westminster
- City of Victoria and District of Saanich

WORKING LUNCH

3. SUMMARY OF A BEST PRACTICES GUIDE FOR LOCAL GOVERNMENTS & INTRODUCTION TO THE BC ENERGY COMPLIANCE REPORT - PART 9 BUILDINGS

4. BREAK-OUT SESSION

CityGreen
S o l u t i o n s



Capital Regional District BC Energy Step Code Workshop Series

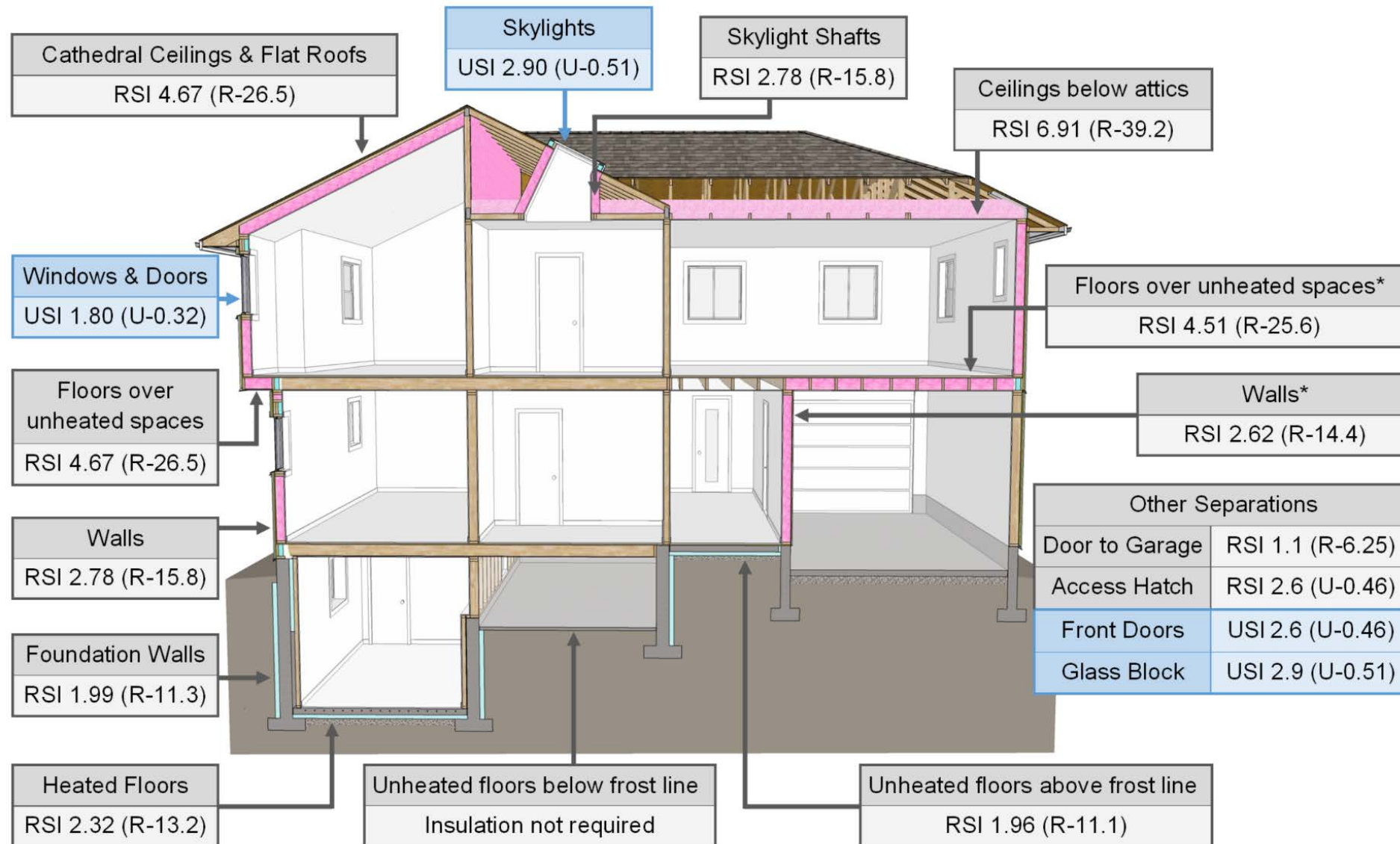
WHAT IS THE BC ENERGY STEP CODE: NOVEMBER 30, 2017

What is the BC Energy Step Code?



“Performance based approach”

Performance Path: Moving Beyond the Prescriptive Targets



ENERGY MODEL REQUIRED

Consultation with Energy Advisor and Plan Evaluation



Energy Model to Step Code Metrics



Step level	Energy Modelling	AIRTIGHTNESS (AIR CHANGES PER HOUR AT 50 PA PRESSURE DIFFERENTIAL)	PERFORMANCE REQUIREMENT OF BUILDING EQUIPMENT AND SYSTEMS	PERFORMANCE REQUIREMENT OF BUILDING ENVELOPE
Step 1	Required	N/A	EnerGuide Rating % lower than EnerGuide Reference House: not less than 0% lower energy consumption or Conform to Subsection 9.36.5	
Step 2 10% Beyond Code	Required	3.0 ACH ₅₀	10% lower than ERS v15 ref. house OR MEUI ≤ 60kWh/m ² -year	TEDI ≤ 45 kWh/m ² -year OR PTL ≤ 35 W/m ²
Step 3 20% Beyond Code	Required	2.5 ACH ₅₀	20% lower than ERS v15 ref. house OR MEUI ≤ 45kWh/m ² -year	TEDI ≤ 40 kWh/m ² -year OR PTL ≤ 30 W/m ²
Step 4 40% Beyond Code	Required	1.5 ACH ₅₀	40% lower than ERS v15 ref. house OR MEUI ≤ 35kWh/m ² -year	TEDI ≤ 25 kWh/m ² -year OR PTL ≤ 25 W/m ²
Step 5	Required	1.0 ACH ₅₀	MEUI ≤ 25kWh/m ² -year	TEDI ≤ 15 kWh/m ² -year OR PTL ≤ 10 W/m ²

On-Site Mid & Post Construction



A photograph of a row of houses with a blue overlay. The houses are multi-story with gabled roofs and dormer windows. The blue overlay is semi-transparent, allowing the details of the houses to be visible. The text "A voluntary compliance option" is centered in white. Two thin white horizontal lines are positioned above and below the text.

“A voluntary
compliance option”

-

December 15, 2017

Available for voluntary
incentive programs

Communities may voluntarily
choose to adopt in bylaws and
policies.

**Available for voluntary
adoption by builders**



**“An alignment and
harmonization with
national strategies”**

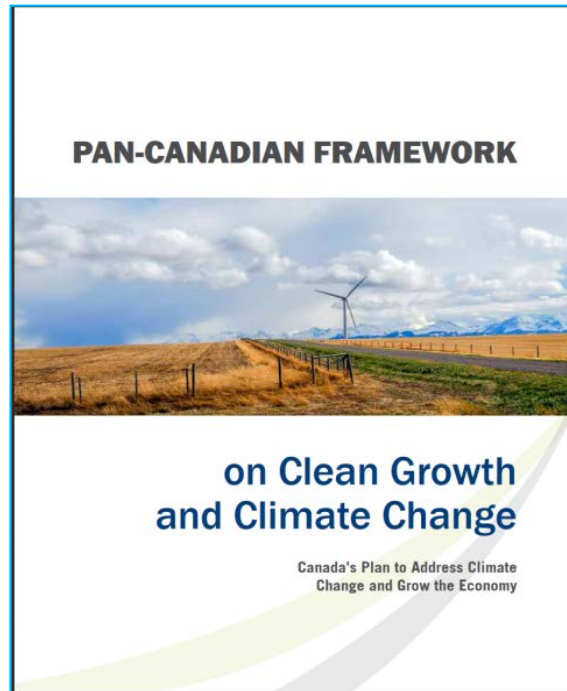
Harmonization with National Frameworks and Strategies



Build Smart

Canada's Buildings Strategy

A Key Driver of the Pan-Canadian Framework
on Clean Growth and Climate Change



The Canada Building Strategy/ Pan-Canadian Framework

- Energy labelling for buildings as early as 2019
- Create plan for existing buildings by 2022
- **Net-zero energy ready by 2030**



“A pathway to
net zero ready
new construction”

Part 9: The Steps

PATHWAY TO 2032: **PART 9 (HOMES)**

2017

2032



A photograph of a row of houses with a blue overlay. The houses are multi-story with gabled roofs and dormer windows. The blue overlay is semi-transparent, allowing the houses to be visible in the background. The text "The first step is enhanced compliance" is centered in white. Two thin white horizontal lines are positioned above and below the text.

“The first step is
enhanced compliance”

Part 9 | Step 1: Enhanced Compliance

2017 -----> 2032

STEP 1

BC BUILDING CODE

ENHANCED COMPLIANCE

IMPROVED

ERS REFERENCE HOUSE

ENERGY EFFICIENCY

A photograph of a row of houses, likely a row house development, with a solid blue overlay. The houses have multiple stories, gabled roofs, and visible windows and doors. The blue overlay is semi-transparent, allowing the details of the houses to be seen while providing a uniform background for the text.

“A consistent approach
to advancing
energy efficiency in buildings”

More Consistency

Eliminating the Patchwork:

- Local government adopted a wide range of programs and approaches to address building energy efficiency.
- Development industry struggled to stay on top of these requirements.
- Bylaws not always market neutral
- BC Energy Step Code offers a **common standard** for achieving building energy goals.



A photograph of a row of houses, likely a row house or townhouse development, with a blue overlay. The houses have multiple stories, gabled roofs, and some have small porches. The blue overlay is semi-transparent, allowing the houses to be visible but with a monochromatic tint.

“A series of measurable
energy-efficiency targets”

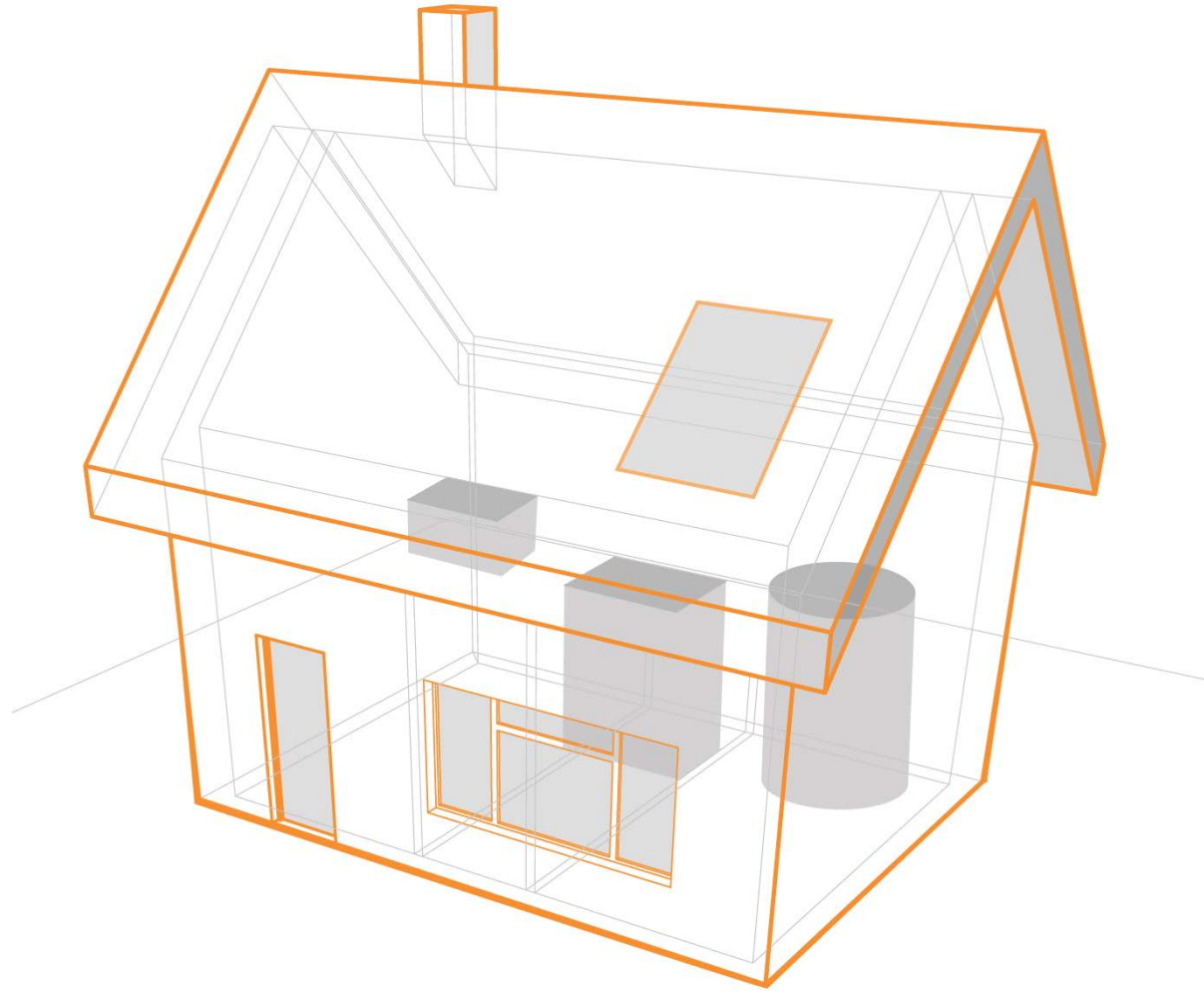
Part 9 – Zone 4

Step level	Energy Modelling	AIRTIGHTNESS (AIR CHANGES PER HOUR AT 50 PA PRESSURE DIFFERENTIAL)	PERFORMANCE REQUIREMENT OF BUILDING EQUIPMENT AND SYSTEMS	PERFORMANCE REQUIREMENT OF BUILDING ENVELOPE
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Step 5	Required	1.0 ACH ₅₀	MEUI ≤ 25kWh/m ² ·year	TEDI ≤ 15 kWh/m ² ·year OR PTL ≤ 10 W/m ²



“A focus on
performance requirements of
building envelope”

A Focus on the Building Envelope



Heating systems come and go...your building envelope is forever



“Flexibility to pursue
innovative, creative,
cost effective solutions”

Consultative Process with Energy Advisor (Builder/Developer/Designer)

Performance based

- No fixed recipe
- Dozens to hundreds of options

Considerations:

- Step Code target
- Bylaw or regulation
- Builder preferences
- Design considerations
- Cost effectiveness
- Local climate
- Client considerations
- New technology



A photograph of a row of houses, likely a row house or townhouse development, with a blue overlay. The houses have multiple stories, gabled roofs, and some have small porches. The blue overlay is semi-transparent, allowing the details of the houses to be visible but muted in color.

**“A tool for
consumer protection”**

Consumer Protection

- ✓ Verification the home meets the minimum energy efficiency requirements +
- ✓ Allows for more informed choice in the market place
- ✓ Builds energy literacy (operating costs are the second price tag)
- ✓ Meet energy efficiency targets + all 4 other building code objectives.



A photograph of a row of houses with a blue overlay. The houses are multi-story with gabled roofs and porches. The text "A collaborative effort" is centered over the image in white. There are two thin white horizontal lines, one above and one below the text.

“A collaborative effort”

Collaborative Effort – by Design and Implementation



The Energy Step Code Council

Serves as a “bridge” between local governments, the province, and the building, development, and design sectors, to ensure local governments adopt steps of the BC Energy Step Code in a prudent fashion.



WHAT IS THE BC ENERGY STEP CODE?

- A performance based approach
- A voluntary compliance option
- Alignment with national strategies
- A pathway to net zero construction
- The first step is enhanced compliance
- A consistent approach to advancing energy efficient new buildings
- A series of energy efficiency targets
- A focus on the building envelope
- Flexibility to pursue innovative and cost effective approaches
- A tool for consumer protection
- A collaborative effort – by design and implementation

Capital Regional District BC Energy Step Code Workshop Series

INTRO TO THE BEST PRACTICES GUIDE FOR LOCAL GOVERNMENTS
NOVEMBER 30, 2017

www.energystepcode.ca

BC Energy Step Code

A Best Practices Guide for
Local Governments



BRITISH
COLUMBIA

Version: 1.1 August 28, 2017

A publication of the Energy Step Code Council and the Building and Safety Standards Branch.



**“What is the most
appropriate approach for
your community & region?”**



The Notification Process

Notification Points:

1. When you plan to start consultation on proposed approach
2. When you have established or ratified a bylaw, policy or program

www.energystepcode.ca

13 Initial Notifications:

- City of Richmond
- City of North Vancouver
- City of Campbell River
- City of Duncan
- District of North Vancouver
- City of Victoria
- District of Saanich
- Comox Valley Regional District
- District of North Saanich
- Resort Municipality of Whistler
- District of West Vancouver
- Township of Langley
- Squamish

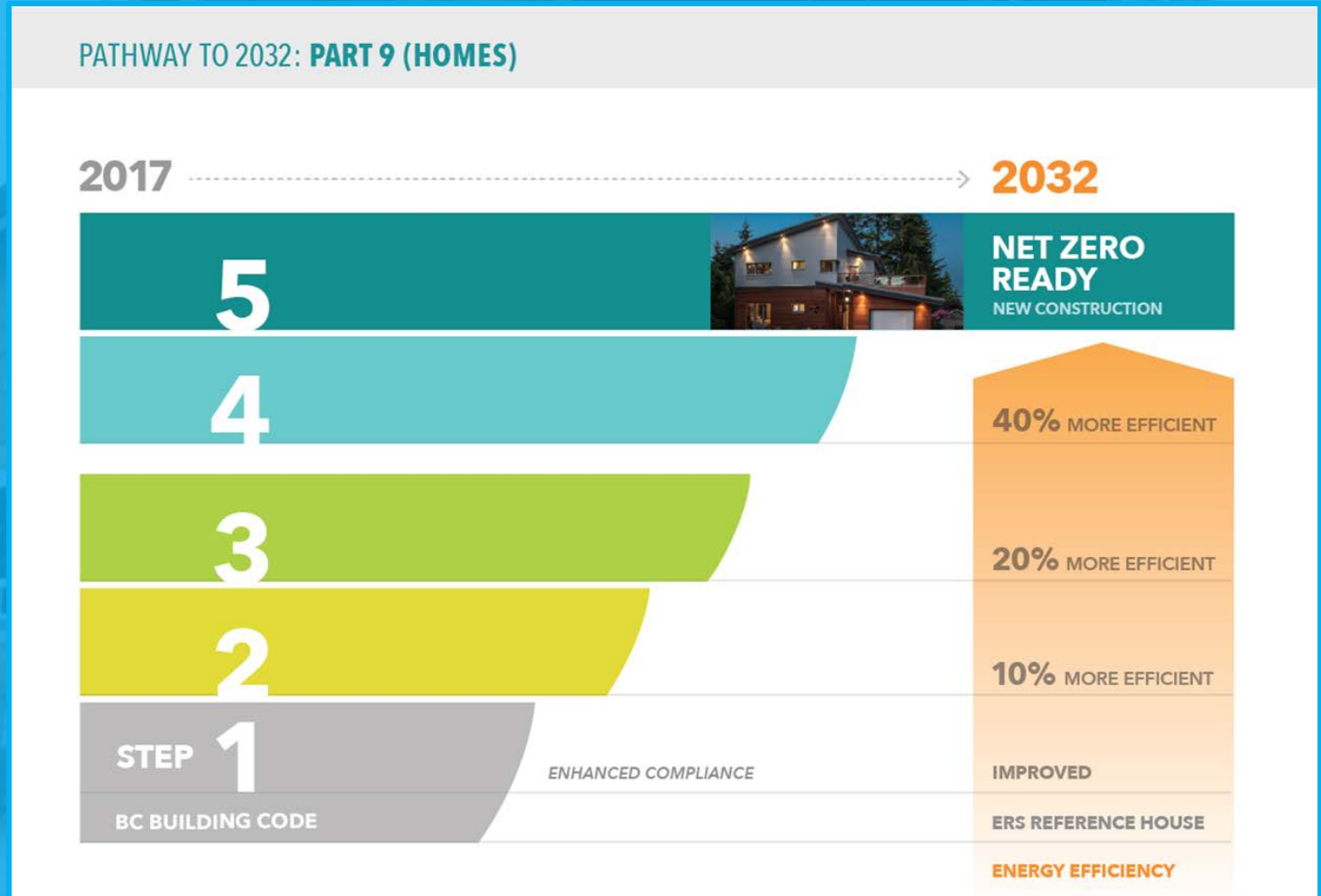
RECOMMENDED TIMELINES FOR IMPLEMENTING A NEW REQUIREMENT

Upper Steps: 12 Months

Lower Steps: 6 Months

Expansion of existing
program to new area or
situation (rezoning): 3
Months

Transition of Existing
Program to equivalent
Step: No delay





Assessment & Consultation Process

ASSESS MARKET CONDITIONS

- How many new homes are constructed per year?
- What type of home (townhome, detached, etc.)?
- Who is buying the homes (first time homebuyers, retirees , immigration from the mainland, vacation homes)?

ASSESS LOCAL INDUSTRY CAPACITY

INDUSTRY	ASSESS
BUILDERS	<ul style="list-style-type: none">○ How many builders are familiar with performance based requirements?○ How many builders have already built homes to Steps 2 and 3 (and higher steps)?○ How familiar are builders with building well air sealed homes?
URBAN/RURAL	<ul style="list-style-type: none">○ Understand capacity differences urban/rural
ENERGY MODELLERS	<ul style="list-style-type: none">○ Are there sufficient number of energy advisors (provincially, regionally)
AIR TIGHTNESS TESTING	<ul style="list-style-type: none">○ Are there sufficient number of EAs (locally/regionally) for blower door testing?

ASSESS LOCAL/REGIONAL GOVERNMENT CAPACITY

GOVERNMENT	ASSESS
READINESS	<ul style="list-style-type: none">○ Good understanding of the BC Energy Step Code and implementation options○ Staff and council are receptive
EXPERIENCE	<ul style="list-style-type: none">○ Previous experience with promoting or delivering energy efficiency programs○ Previous experience engaging the builder community
ADMIN CAPACITY	<ul style="list-style-type: none">○ Internal administrative capacity is sufficient<ul style="list-style-type: none">○ Staffing○ Administrative processes○ Funding is available for incentives and other supports
OTHER	<ul style="list-style-type: none">○ ...



Implementation Options

OPTIONS TO ENCOURAGE & INCENTIVIZE

OPTION	EXAMPLES
Encouragement/ Awareness Building	<ul style="list-style-type: none">○ Provide builder orientation sessions and learning forums○ Encourage early adopter builders○ Promote and showcase higher step homes (home tours, case studies, print media)○ Promote utility incentives○ Consumer engagement on value proposition for purchasing efficient homes.
Incentive	<ul style="list-style-type: none">○ Rebate Program (\$X for Step 1,2,3,4,5)○ Building Permit Rebate Program○ Energy Evaluation Subsidy○ Mid-Construction Blower Door Test Subsidy
Other Options	<ul style="list-style-type: none">○ As determined by your community/region

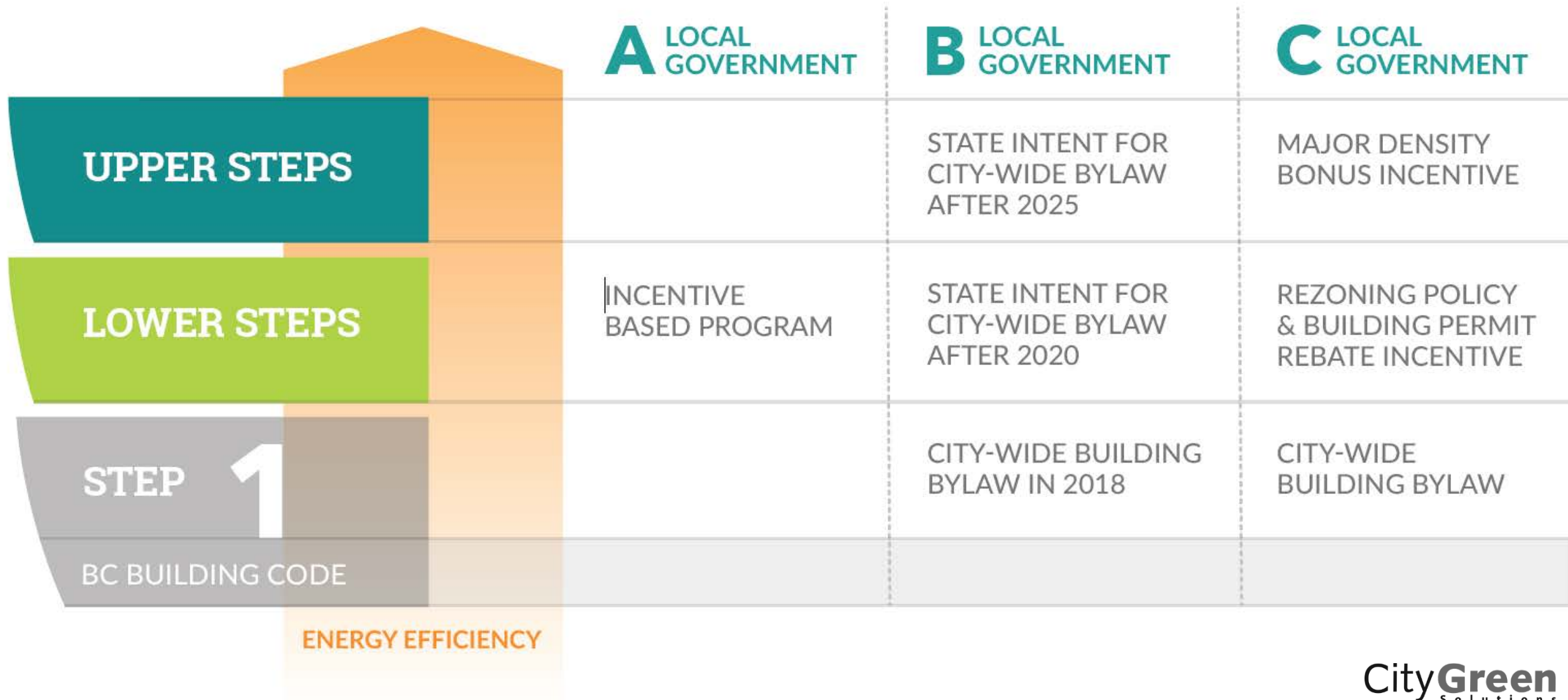
OPTIONS FOR GENERAL AWARENESS & POLICY SUPPORT

- **Policy Statement in Official Community Plan**
- **Action in Community Energy and Emissions Plan**
- **Objective in a Sustainability Strategy**
- **Pilot an initiative in a Neighbourhood Plan or a Local Area Plan**
- **Provide learning forums for industry and other stakeholders**

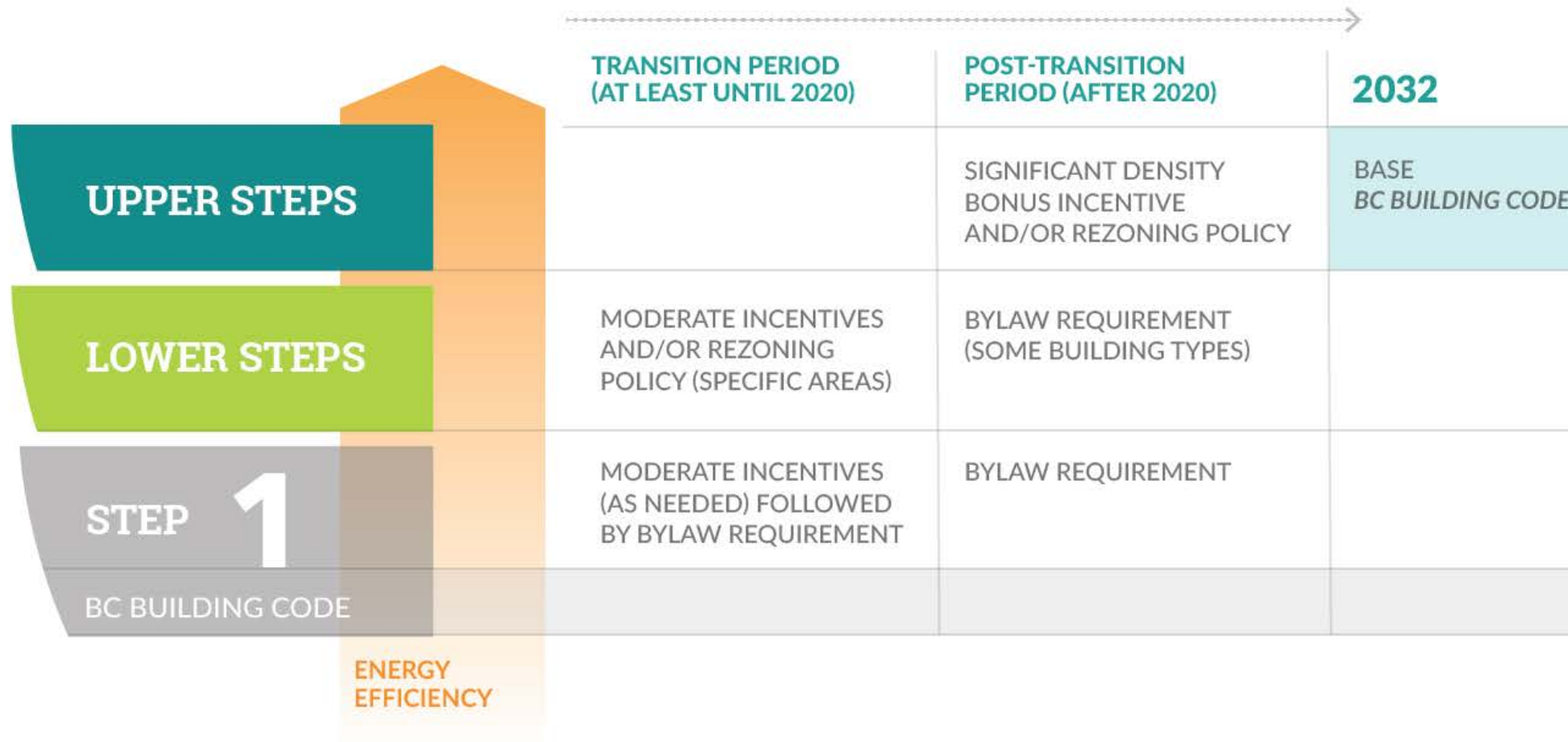
OPTIONS FOR POLICY IMPLEMENTATION

- Jurisdiction-wide building bylaw (eg. Step 1)
- Mandatory requirement for rezoning (eg. Step 3)
- Zoning Bylaw Amendments
- Density Bonus Policy
- Other...

Flexible Framework – Select Appropriate Step and Tool



An Adoption Example and Timeline



New Westminster: Proposed Step Code Bylaws and Timelines

Part 9 Residential	Spring 2018 (April)	Spring 2019 (April)	January 2022
Single Detached Home	Step 1	Step 3*	Step 4
Laneway / Carriage Home	Step 1	Step 2*	Step 3
Duplex, Triplex or Quadriplex	Step 1	Step 3*	Step 4
Townhomes / Stacked Townhomes	Step 1	Step 3*	Step 4
Industry Training and Capacity Building	✓	✓	
City Incentives on Energy Modelling	✓	✓	

* Note: Staff may consider relaxing the proposed Step Code target for Spring 2019 to end of 2019 based upon feedback from builder and designer community

Richmond: Proposed Step Code Bylaws and Timelines

For Stakeholder Consultation

Building type	Current approximate Energy Step Code Performance Level	Spring 2018	January 2020	January 2022	January 2025
Part 9 detached homes, duplexes	BC Building Code	Step 1	<i>Step 3</i>	<i>Step 3 or 4</i>	<i>Step 4</i>
Part 9 townhouses	~Step 2-3	Step 3	<i>Step 3</i>	<i>Step 4</i>	<i>Step 4 or 5</i>
Part 9 low-rise apartments	BC Building Code	Step 3	<i>Step 3</i>	<i>Step 4</i>	<i>Step 4 or 5</i>
Part 9 commercial / industrial	BC Building Code	BC Building Code	?	?	?
Part 9 all renovations / additions	BC Building Code	BC Building Code	?	?	?

The City of Richmond has been consulting with stakeholders to develop recommendations to City Council regarding implementation of the **BC Energy Step Code** in Richmond.

CONSULTATION

BY ATTENDING THIS SESSION, PARTICIPANTS WILL HAVE THE OPPORTUNITY TO LEARN MORE **AND PROVIDE ADDITIONAL FEEDBACK** REGARDING:

- Energy Step Code requirements for new **Part 9** development starting Spring 2018:
 - detached houses;
 - duplexes;
 - townhouses, and
 - 3-storey wood-frame apartments.
- Updated information on estimated costs of compliance for new **Part 9** development
- Proposed approaches to regulatory processes, monitoring and compliance
- Proposed information sessions and programs to assist those building to Energy Step Code requirements

YOU'RE INVITED TO

CITY OF RICHMOND BUILDERS' BREAKFAST:

DRAFT RECOMMENDATIONS
FOR IMPLEMENTING THE
BC ENERGY STEP CODE IN RICHMOND

NEW
DATE

Thursday, **November 16**, 7:30–10:15 a.m.

Richmond Cultural Centre – Performance Hall
7700 Minoru Gate, Richmond, BC

RSVP: (noting your name, job title, company and phone number) **to:** nheap@richmond.ca
Limited to two attendees per company.



**BREAKFAST
INCLUDED!**



Richmond: “What they’ve heard during consultation”

- “Enable builders to *minimize costs*
 - Provide *information and training*
 - Provide incentives for builders to *exceed requirements*
 - *Telegraph future requirements*
- Ensure regulatory procedures *minimize time delays*
 - *Consistency and standardization*
 - *Clear expectations and clear communication*
 - *Communicate to sub-trades”*

Approval History

Policy adopted:	September 19, 2017
Policy amended:	

Scope

This policy applies to all CVRD planning and building permit applications.

Eligibility

To be eligible for a building permit rebate, the proposed new residential dwelling must achieve at least Step 3 in the *BC Energy Step Code*. The building permit application must be made on or after January 1, 2018.

To be eligible for a planning application fee rebate, the proposed development must be led by a non-profit agency in good standing, and where the proposed development relates to the agency's core services and aligns with CVRD's regional strategies or strategic priorities (e.g., construction of affordable housing).

Schedule A
BC Energy Step Code

The rebate rate for a new residential dwelling is as follows:

Step Level	Rebate Rate
Step 3 20% Beyond Code (Energy Star)	25%
Step 4 40% Beyond Code (R2000)	50%
Step 5 (Net Zero/ Passive House)	100%

PREPARING

**Build Local
Understanding
& Capacity**

(Gov't & Industry)



**Consider Appropriate
Approach: Encourage,
Incentive, Policy**



**Consult with
Industry and
Stakeholders**



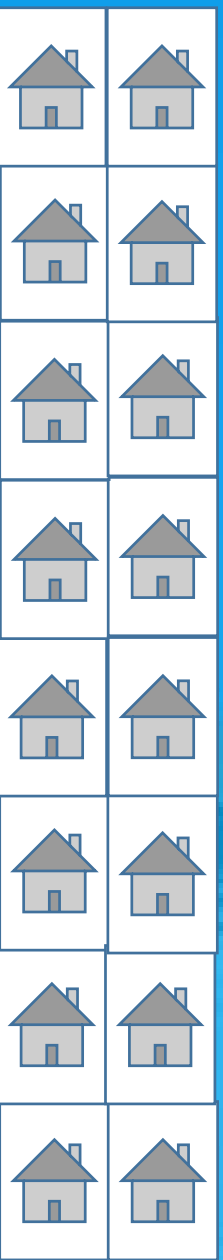
Encouragement

Re-Zoning Policies

Incentive/Rebate

Voluntary Adoption

Jurisdiction-Wide Bylaw



BC Energy Step Code – Part 9

INTRODUCTION TO THE BC ENERGY COMPLIANCE REPORT (for some) PART 9 BUILDINGS
NOVEMBER 30



“A Standardized Reporting Template For Demonstrating Compliance”

AKA: Translation of the reporting requirements outlined in BCBC 2.2.8.3., Division C

PRE-CONSTRUCTION

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)

VERSION 1.0 (NOV 21, 2017) 1

AS-BUILT

AS-BUILT

BC ENERGY COMPLIANCE REPORT - PERFORMANCE PATHS FOR PART 9 BUILDINGS

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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 a site evaluation completed on (dd/mm/yyyy):

VERSION 1.0 (NOV 21, 2017) 1

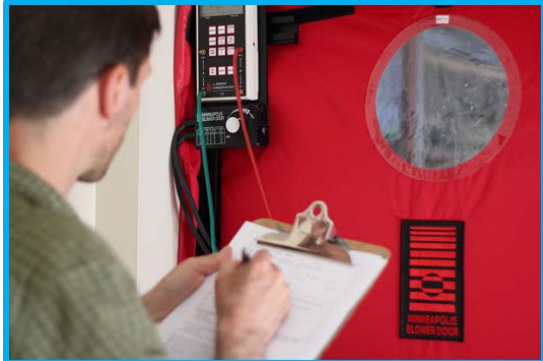
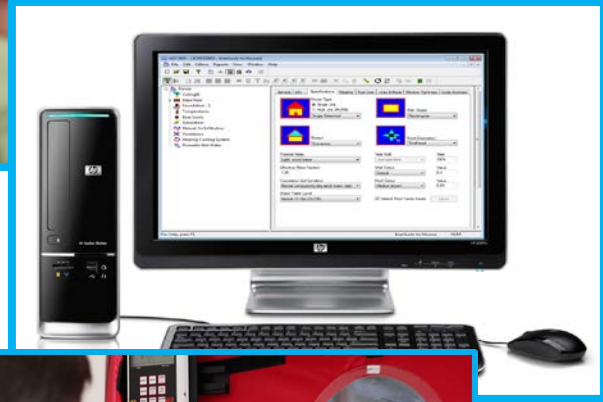
USERS & USES

- **EnerGuide Rating System energy advisors and other energy modellers** to produce a standardized compliance report.
- **Builders** to translate the energy model into a BC Energy Step Code Report.
- **Local governments** to verify builders are complying with a bylaw or policy referencing a level of the Step Code (for example Step 3).

Potential Future Application:

- **Local governments and utilities** to process incentives or rebates aligned with BC Energy Step Code metrics.

Energy Model & Site Visit



Produce Compliance Report

[illegible]

STEP CODE METRICS FOR ENERGY EFFICIENCY: CLIMATE ZONE 4

Step level	Energy Modelling	AIRTIGHTNESS (AIR CHANGES PER HOUR AT 50 PA PRESSURE DIFFERENTIAL)	PERFORMANCE REQUIREMENT OF BUILDING EQUIPMENT AND SYSTEMS	PERFORMANCE REQUIREMENT OF BUILDING ENVELOPE
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Step 5	Required	1.0 ACH ₅₀	MEUI ≤ 25kWh/m ² ·year	TEDI ≤ 15 kWh/m ² ·year OR PTL ≤ 10 W/m ²



Either/Or

AS-BUILT REPORT

Section D

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.

As-Built House Rated Energy Consumption (GJ/year):

Reference House Rated Energy Target (GJ/year):

METRIC	UNITS	REQUIRED	PROPOSED	AS-BUILT
Step Code Level	Step 1, 2, 3, 4, or 5			
Mechanical Energy Use Intensity (MEUI)	kWh/(m ² ·year)	(max)		
ERS Rating % Lower Than EnerGuide Reference House, where applicable	%	(min)		
Thermal Energy Demand Intensity (TEDI)	kWh/(m ² ·year)	(max)		
Peak Thermal Load (PTL)	W/m ²	(max)		
Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	(max)		
Step Code Requirements Met: <input type="checkbox"/> Yes <input type="checkbox"/> No				

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.

PRE CONSTRUCTION REPORT

ZONE 4 – Example

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.

As-Built House Rated Energy Consumption (GJ/year): 70

Reference House Rated Energy Target (GJ/year): 73

METRIC	UNITS	REQUIRED	PROPOSED	AS-BUILT
Step Code Level	Step 1, 2, 3, 4, or 5	1		
Mechanical Energy Use Intensity (MEUI)	kWh/(m ² -year)	- (max)	70	
ERS Rating % Lower Than EnerGuide Reference House, where applicable	%	0 (min)	4	
Thermal Energy Demand Intensity (TEDI)	kWh/(m ² -year)	- (max)	37	
Peak Thermal Load (PTL)	W/m ²	- (max)	51	
Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	- (max)	4.5	
Step Code Requirements Met: <input type="checkbox"/> Yes <input type="checkbox"/> No				

PRE CONSTRUCTION REPORT

ZONE 4 – Example

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.

As-Built House Rated Energy Consumption (GJ/year):

70

Reference House Rated Energy Target (GJ/year):

73

METRIC	UNITS	REQUIRED	PROPOSED	AS-BUILT
Step Code Level	Step 1, 2, 3, 4, or 5	1		
Mechanical Energy Use Intensity (MEUI)	kWh/(m ² -year)	- (max)	70	
ERS Rating % Lower Than EnerGuide Reference House, <i>where applicable</i>	%	0 (min)	4	
Thermal Energy Demand Intensity (TEDI)	kWh/(m ² -year)	- (max)	37	
Peak Thermal Load (PTL)	W/m ²	- (max)	51	
Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	- (max)	4.5	
Step Code Requirements Met: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

PRE-CONSTRUCTION REPORT

ZONE 4 – Example

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.

As-Built House Rated Energy Consumption (GJ/year): 22

Reference House Rated Energy Target (GJ/year): 31

METRIC	UNITS	REQUIRED	PROPOSED	AS-BUILT
Step Code Level	Step 1, 2, 3, 4, or 5	3		
Mechanical Energy Use Intensity (MEUI)	kWh/(m ² -year)	45 (max)	101	
ERS Rating % Lower Than EnerGuide Reference House, where applicable	%	20 (min)	29	
Thermal Energy Demand Intensity (TEDI)	kWh/(m ² -year)	30 (max)	50	
Peak Thermal Load (PTL)	W/m ²	40 (max)	32	
Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	2.5 (max)	2.3	
Step Code Requirements Met: <input type="checkbox"/> Yes <input type="checkbox"/> No				

PRE-CONSTRUCTION REPORT

ZONE 4 – Example

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.

As-Built House Rated Energy Consumption (GJ/year): 22

Reference House Rated Energy Target (GJ/year): 31

METRIC	UNITS	REQUIRED	PROPOSED	AS-BUILT
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Airtightness in Air Changes per Hour at 50 Pa differential	ACH @ 50 Pa	2.5 (max)	2.3	
Step Code Requirements Met:				<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

EA Role: Services to Meet Step Code Metrics

Air Tightness



**Performance
Requirement for
Building Equipment &
Systems**



**Performance
Requirement of
Building Envelope**



Break-Out Session - Questions

BREAK-OUT STRUCTURE

- Split into groups with facilitator/note taker @ each table.
- Each question will be briefly introduced
- Fixed time to discuss each question
- Notes & questions will be summarized/distributed
- Names will not be attributed to questions/notes unless requested

BREAK-OUT QUESTIONS – MARKET BARRIERS

Are there barriers to encouraging, incentivizing or regulating the BC Energy Step Code in your community? If so, provide specific examples in the relevant categories below:

- **Market Conditions**
 - **Industry Readiness and Capacity**
 - **Local Government Readiness and Capacity**
 - **Local Energy Modeler and Energy Advisor Availability**
 - **Other**
-

Energy Advisor Capacity Scenario

New Dwelling Permits - 2016		New Dwelling Permits - 2017	
Apartment	928	Apartment	1025
Detached townhouse	4	Detached townhouse	14
Duplex	56	Duplex	23
Mobile Home	15	Mobile Home	7
Row House, town house	115	Row House, town house	145
Single Detached	895	Single Detached	706
*Data from Jan 16 - Dec 16 for the CRD		*Data from Jan 17 - Sept 17 for the CRD	
Total Building Permits 2016 (Residential)	3248	Total Building Permits 2017 (Residential)	2391

2016 CRD Total :1070*

Estimated # FTE EAs for 1070 Homes: 6-12

*Includes Detached Townhouses, Duplexes, Row Homes/Townhomes, and Single Detached Homes

<https://www.crd.bc.ca/about/data/regional-information/development-statistics/monthly-permit-reporting-tool>

BREAK-OUT QUESTIONS – TRAINING NEEDS

2. A) What type of training and engagement is needed at the local government level

- **Building Inspectors**
- **Planning Staff**
- **Administration Staff**

B) What format should this training be in?

- **Regional workshops**
- **Internal local government workshops (longer duration)**
- **Internal lunch & learn sessions (shorter duration)**
- **Webinars**
- **Other**

BREAK-OUT QUESTIONS – COMPLIANCE

How important is consistency across municipalities on the following items, in relation to BC Energy Step Code Compliance?

- Region wide adoption of the BC Energy Compliance Report for Part 9 Buildings
- Agreed upon criteria for accepting which energy modelling providers can submit reports

The image shows a screenshot of the 'BC Energy Compliance Report - Performance Path for Part 9 Buildings' form. The form is titled 'AS-BUILT' and includes sections for 'Project Information' and 'Building Compliance Summary'. The 'Project Information' section contains fields for Building Name, Building Type, Project Name, Project Address, Project Owner, and Project Manager. The 'Building Compliance Summary' section includes a table with columns for 'Building Component', 'Compliance Path', and 'Compliance Status'. The table lists various building components such as 'Envelope', 'Mechanical', 'Water Heating', 'Domestic Hot Water', 'Space Heating', 'Cooling', 'Ventilation', 'Lighting', 'Plug Loads', and 'Renewable Energy'. The 'Compliance Path' column shows the selected path for each component, and the 'Compliance Status' column shows the status (e.g., 'Compliant', 'Non-Compliant').

- ✓ Energy Advisors, Registered with SO/NRCAN
- ✓ Certified Passive House Designer or Consultant, Approved by the Passive House Institute.
- ✓ Others using modelling software tested in accordance with ANSI/ASHRAE 140

BREAK-OUT QUESTIONS – PROCESS

What other parts of the planning and inspections process need to change in addition to the BC Energy Compliance Report (given the focus on engaging an energy advisor at the outset)?

- **Complete review of bylaws to comply with the Building Act**
 - **Inclusion of additional inspections**
 - **Pre-application information**
 - **Development permit application form amended to include line on step code level**
 - **Building code information sheet**
 - **Other**
-

BREAK-OUT QUESTIONS – INCENTIVES

What incentives would your municipality consider for encouraging the BC Energy Step Code in your community (lower vs upper steps)?

- **Fast-tracking permits**
 - **Rebates:**
 - **Building permit**
 - **Energy model rebate**
 - **Mid-construction blower door test**
 - **Revitalization tax exemption**
 - **Density bonus**
 - **Other**
-

BREAK-OUT QUESTIONS – READINESS

How ready do you think your community is for adopting Step Code? If so, what are the steps and timelines that could be considered?

READINESS SCALE

1. Engagement ongoing
2. Prepping for engagement
3. Considering engagement
4. Unsure
5. On hold – wait and see

TIMELINE

1. Already Started
2. 2018 Spring
3. 2018 Fall
4. 2019 Spring
5. 2019 Fall
6. 2020
7. Other

BREAK-OUT QUESTIONS – REGIONAL COORDINATION

Identify regional coordination/collaboration opportunities:

- Are there areas of regional coordination that are critical for smooth and consistent uptake of step code?
- Are there areas of regional collaboration that would be helpful for building capacity, awareness and readiness across the region?

BREAK-OUT ACTIVITY:

1. Identify any missing items in other row
2. Sticky dot - priority areas
3. Sticky note - details, more information

REGIONAL COORDINATION

CATEGORY	OPTIONS AND OPPORTUNITIES FOR REGIONAL COLLABORATION	PRIORITY
MODEL LANGUAGE	Model policy statement for community planning documents	
	Model neighbourhood Plan or Local Area Plan Pilot Initiative	
	Model staff report	
	Model amendments to building bylaw	
	Model process for planning and building permits	
	Other:	
	Other:	

REGIONAL COORDINATION

CATEGORY	OPTIONS AND OPPORTUNITIES FOR REGIONAL COLLABORATION	PRIORITY
ENCOURAGE	Provide builder orientation sessions and learning forums	
	Promote and showcase higher step homes (home tours, case studies, print media)	
	Promote utility incentives	
	Consumer engagement on value proposition for purchasing efficient homes	
	Other:	
	Other:	

REGIONAL COORDINATION

CATEGORY	OPTIONS AND OPPORTUNITIES FOR REGIONAL COLLABORATION	PRIORITY
INCENTIVES	Rebate Program (\$X for Step 1,2,3,4,5)	
	Building Permit Rebate Program	
	Pre-Construction Energy Evaluation Subsidy	
	Mid-Construction Blower Door Test Subsidy	
	Other:	
	Other:	

REGIONAL COORDINATION

CATEGORY	OPTIONS AND OPPORTUNITIES FOR REGIONAL COLLABORATION	PRIORITY
POLICY	Jurisdiction-wide building bylaw (eg. Step 1)	
	Mandatory requirement for rezoning (eg. Step 3)	
	Zoning Bylaw Amendments	
	Density Bonus Policy	
	Other:	
	Other:	

REGIONAL COORDINATION

CATEGORY	OPTIONS AND OPPORTUNITIES FOR REGIONAL COLLABORATION	PRIORITY
ROLE FOR CRD CLIMATE ACTION	Building industry feedback & CRD Step Code Program report	
	Education	
	Incentives	
	Development and/or sharing of Model Policies	
	Other:	
	Other:	
OTHER		

Next Steps

1. Feedback from today will be summarized and distributed
2. When considering encouraging/incentivizing/policy – keep the CRD in the loop
3. Review learning resources at: www.energystepcode.ca

Questions/More Information

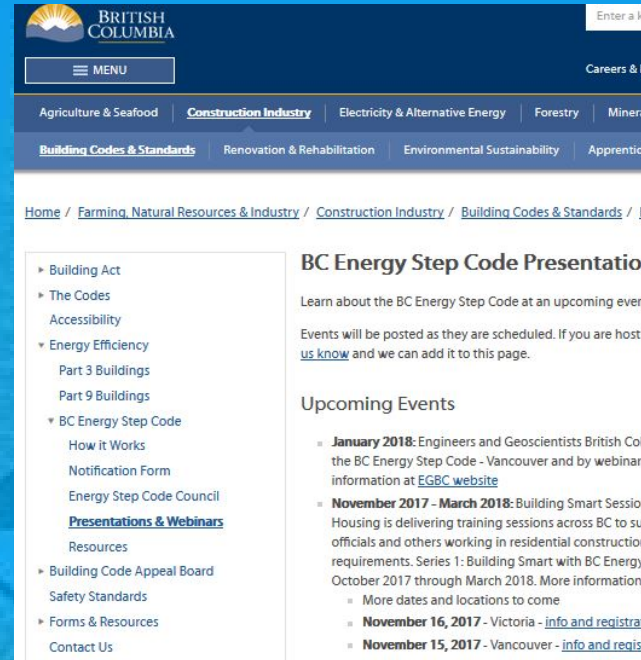
peter.sundberg@citygreen.ca

energystepcode.ca

RESOURCES

@

www.energystepcode.ca



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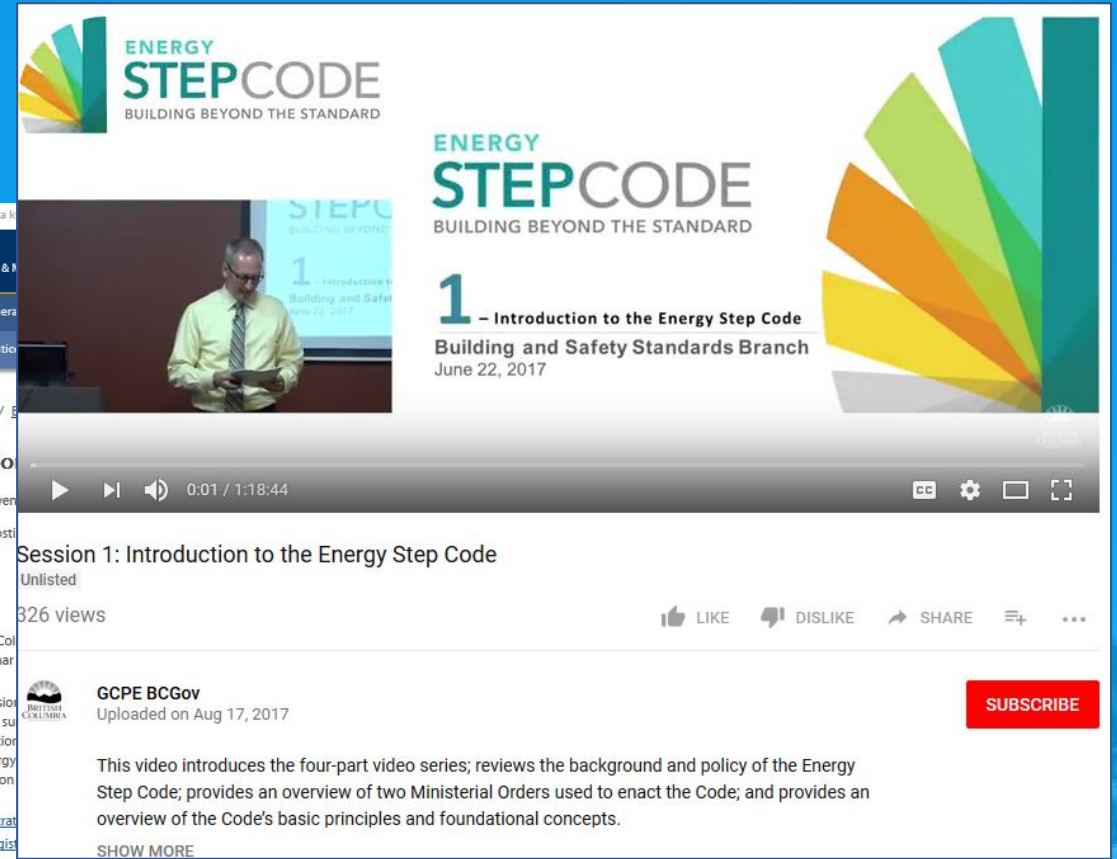
BC Energy Step Code Presentation

Learn about the BC Energy Step Code at an upcoming event.

Events will be posted as they are scheduled. If you are hosting an event, please email info@energystepcode.ca and we can add it to this page.

Upcoming Events

- January 2018:** Engineers and Geoscientists British Columbia (EGBC) will be presenting the BC Energy Step Code - Vancouver and by webinar. More information at [EGBC website](http://egbc.ca).
- November 2017 - March 2018:** Building Smart Session: Housing is delivering training sessions across BC to support officials and others working in residential construction requirements. Series 1: Building Smart with BC Energy Step Code - October 2017 through March 2018. More information at [Building Smart website](http://building-smart.ca).
- November 16, 2017 - Victoria:** - [info and registration](#)
- November 15, 2017 - Vancouver:** - [info and registration](#)
- November 9, 2017 - New Westminster:** - [info and registration](#)



ENERGY STEP CODE
BUILDING BEYOND THE STANDARD

1 - Introduction to the Energy Step Code
Building and Safety Standards Branch
June 22, 2017

Session 1: Introduction to the Energy Step Code

Unlisted

326 views

GCPE BCGov
Uploaded on Aug 17, 2017

This video introduces the four-part video series; reviews the background and policy of the Energy Step Code; provides an overview of two Ministerial Orders used to enact the Code; and provides an overview of the Code's basic principles and foundational concepts.

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How the Energy Step Code fits into the Building Permit Process for new Part 9* Residential Development

*detached, duplex, townhouse, 3-storey wood-frame apartment

