ENERGY STEPCODE

BUILDING BEYOND THE STANDARD

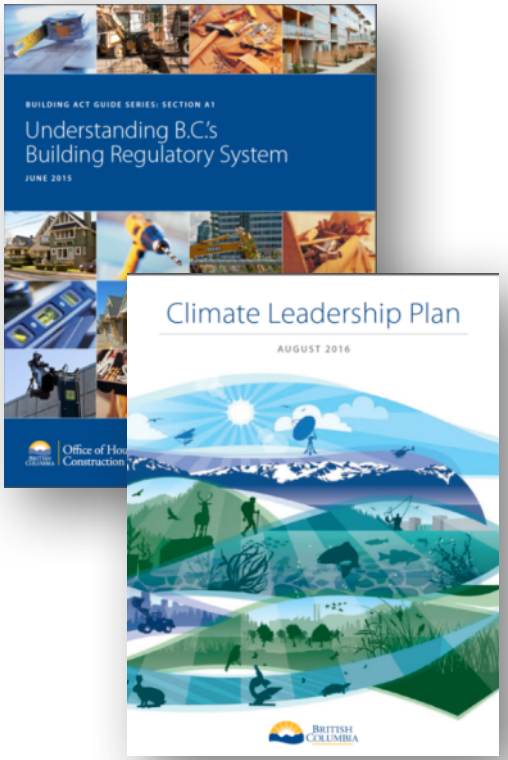
August 23, 2017

Brendan McEwen

Sustainability Manager

City of Richmond

Two Provincial Initiatives Set the Stage



Building Act

- Consistency, Competency & Innovation
- December 2017 marks the end of local building requirements in bylaws.

Climate Leadership Plan

- Establishes a target that all new construction will be net-zero ready by 2032.

The Energy Step Code Council

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.

Energy Step Code

What is it?

- A better than Code energy standard
- Optional for Local Govts.
- Local Govts can reference in:
  - Bylaws
  - Policies
  - Incentive programs
  - Density bonuses

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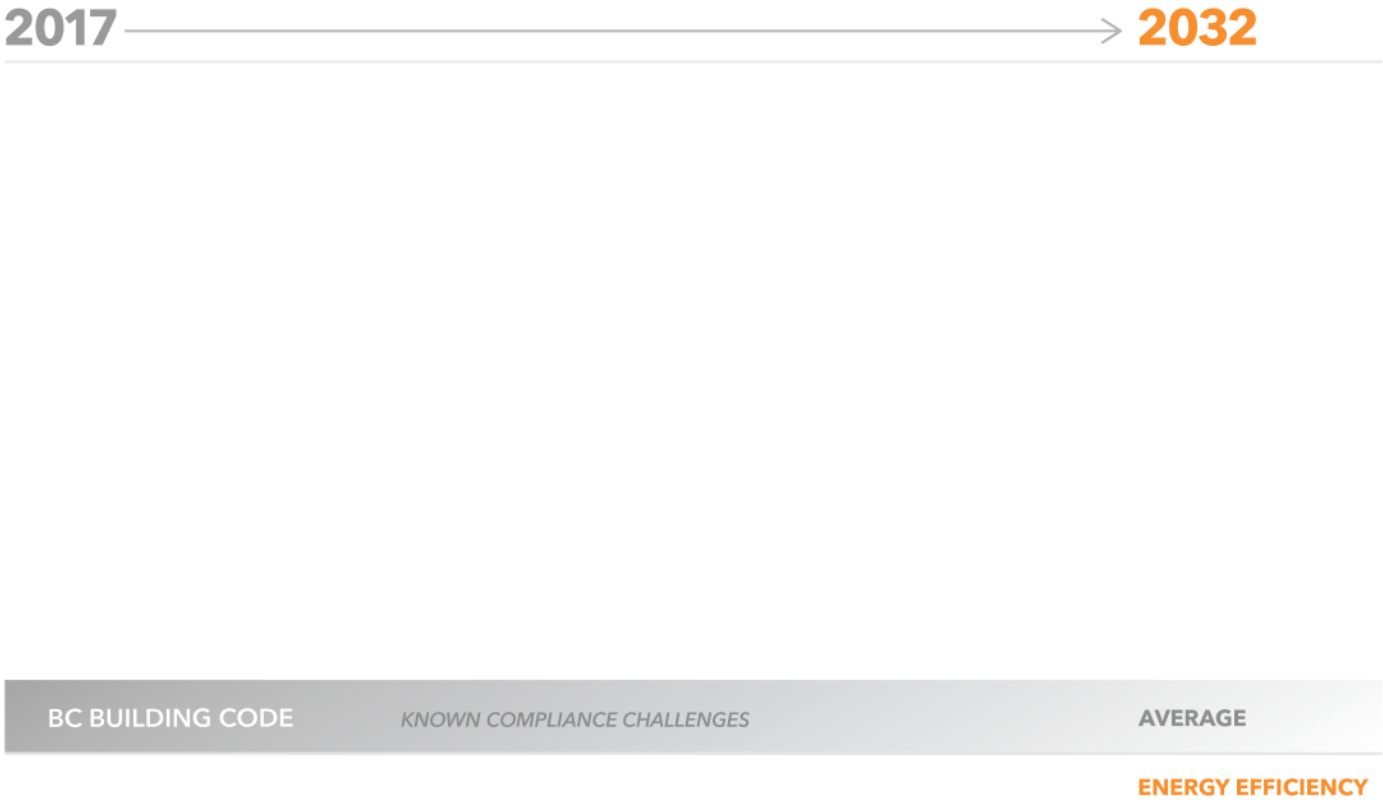
How the BC Energy Step Code Works (Part 9)



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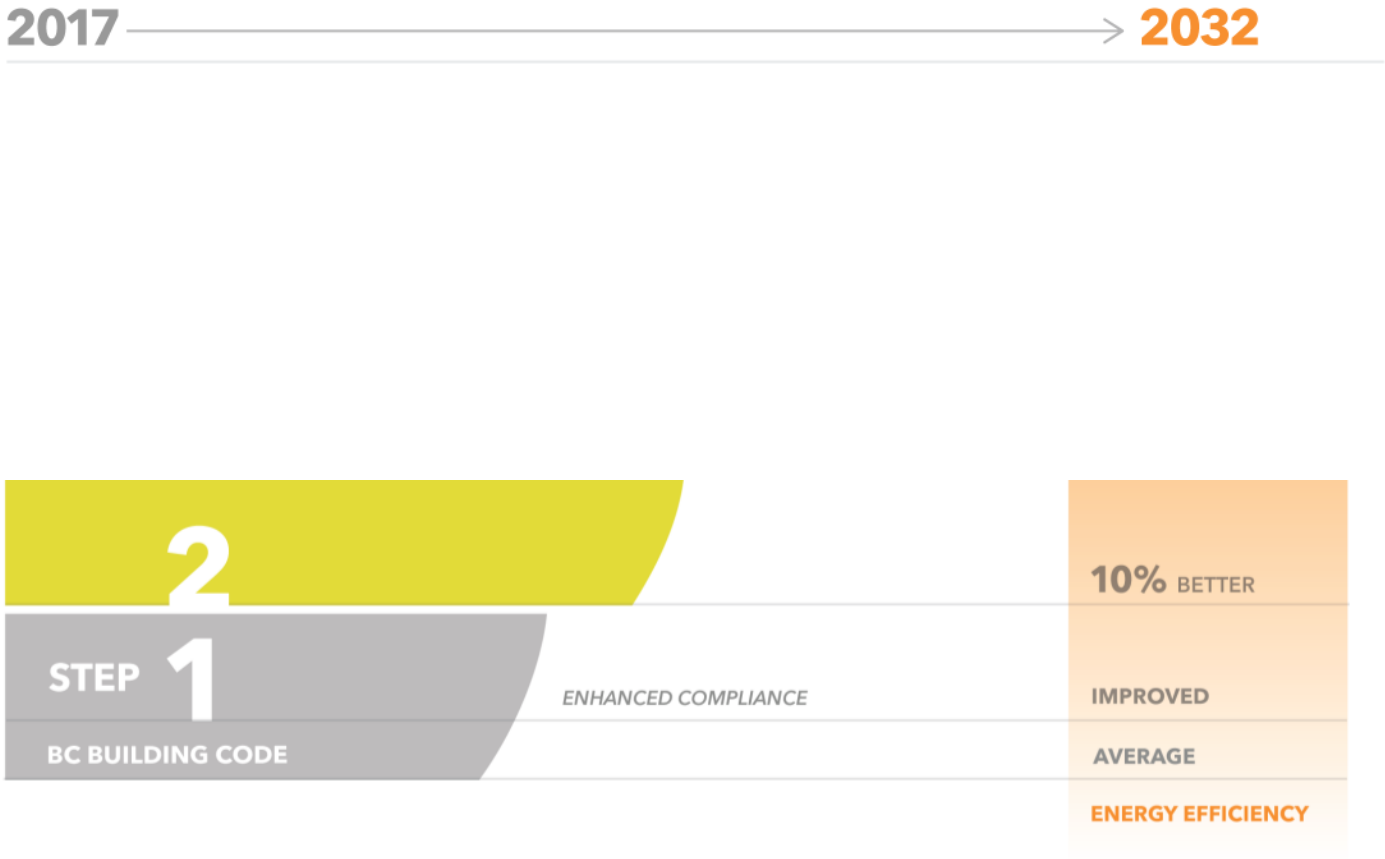

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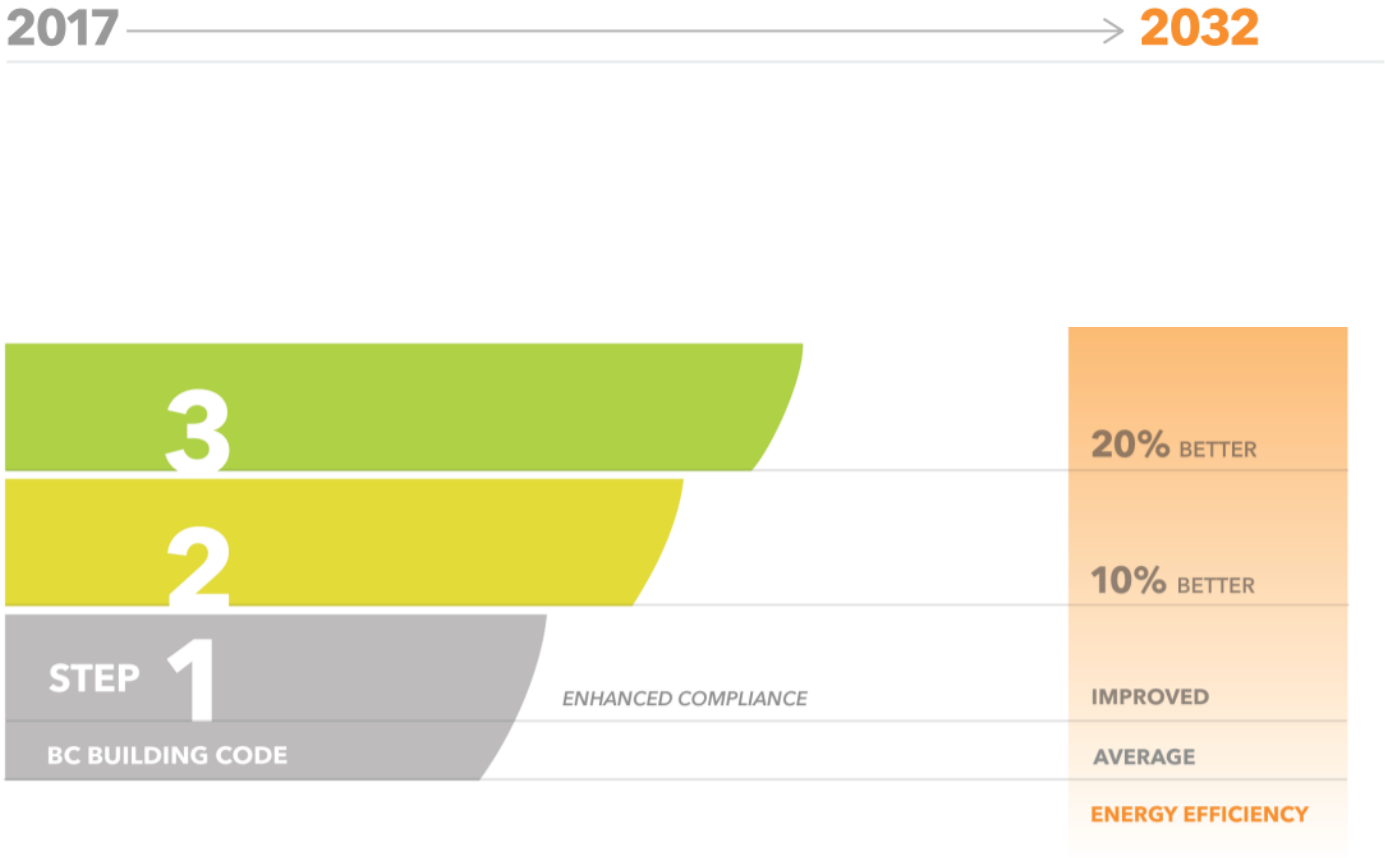

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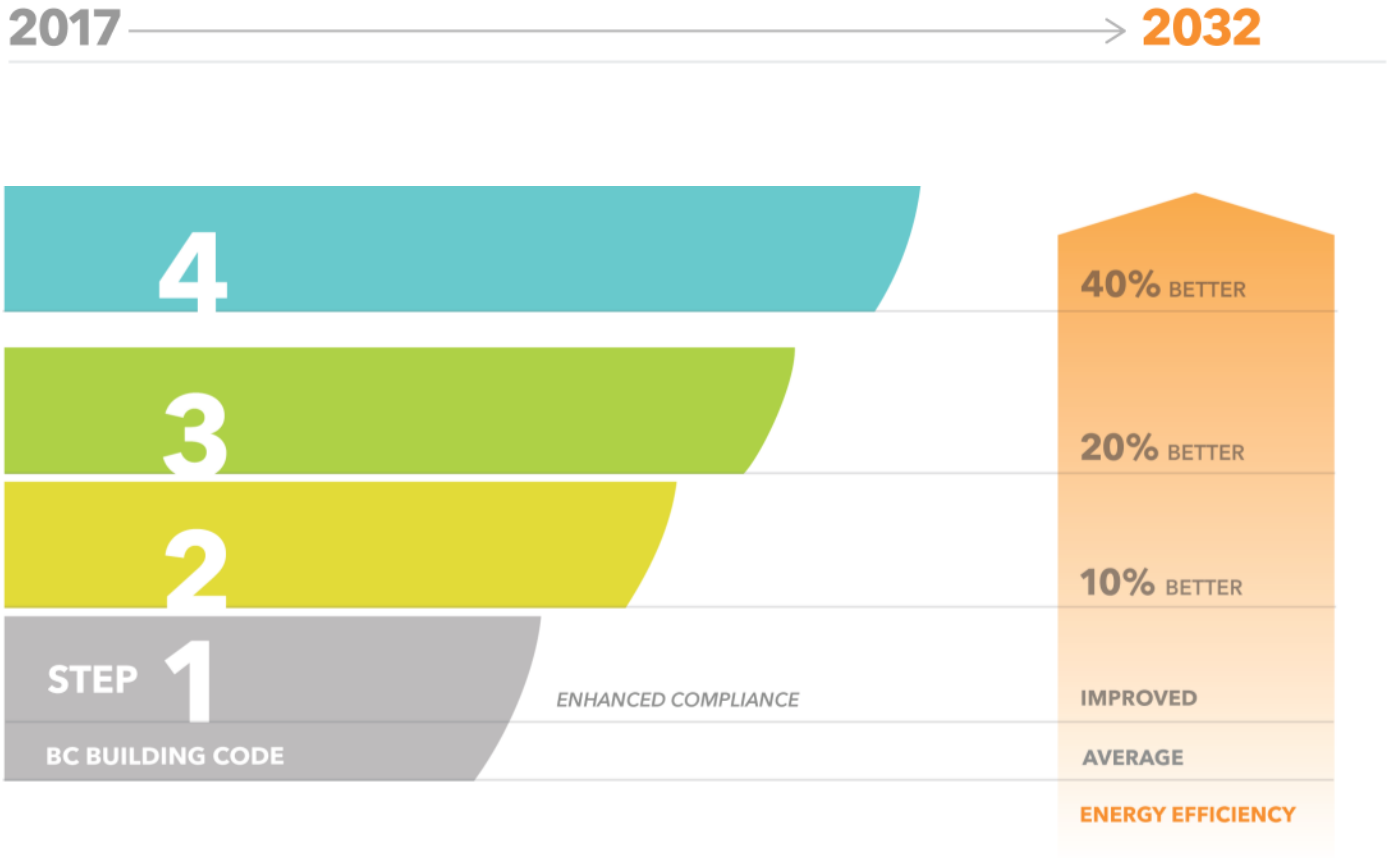

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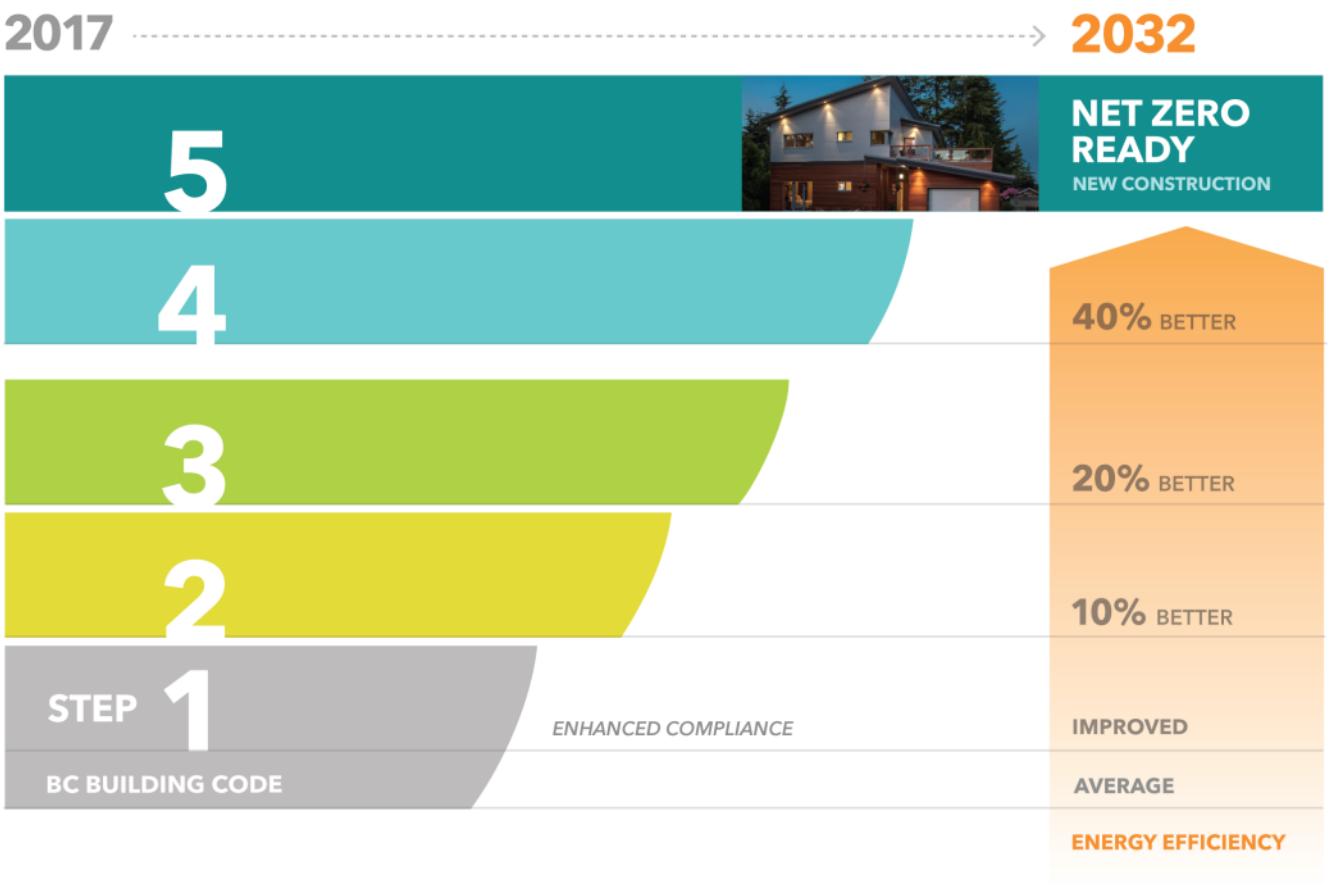

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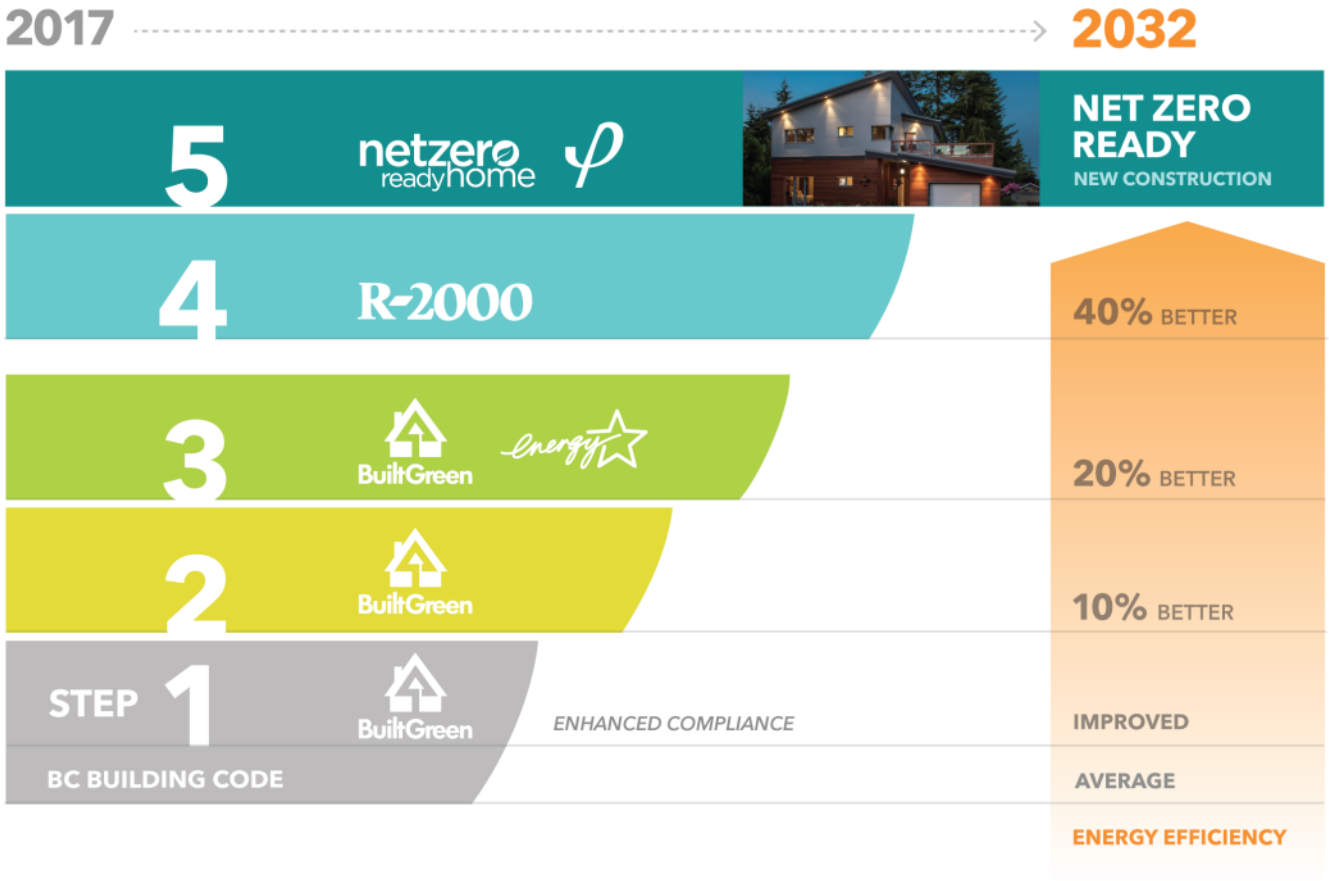
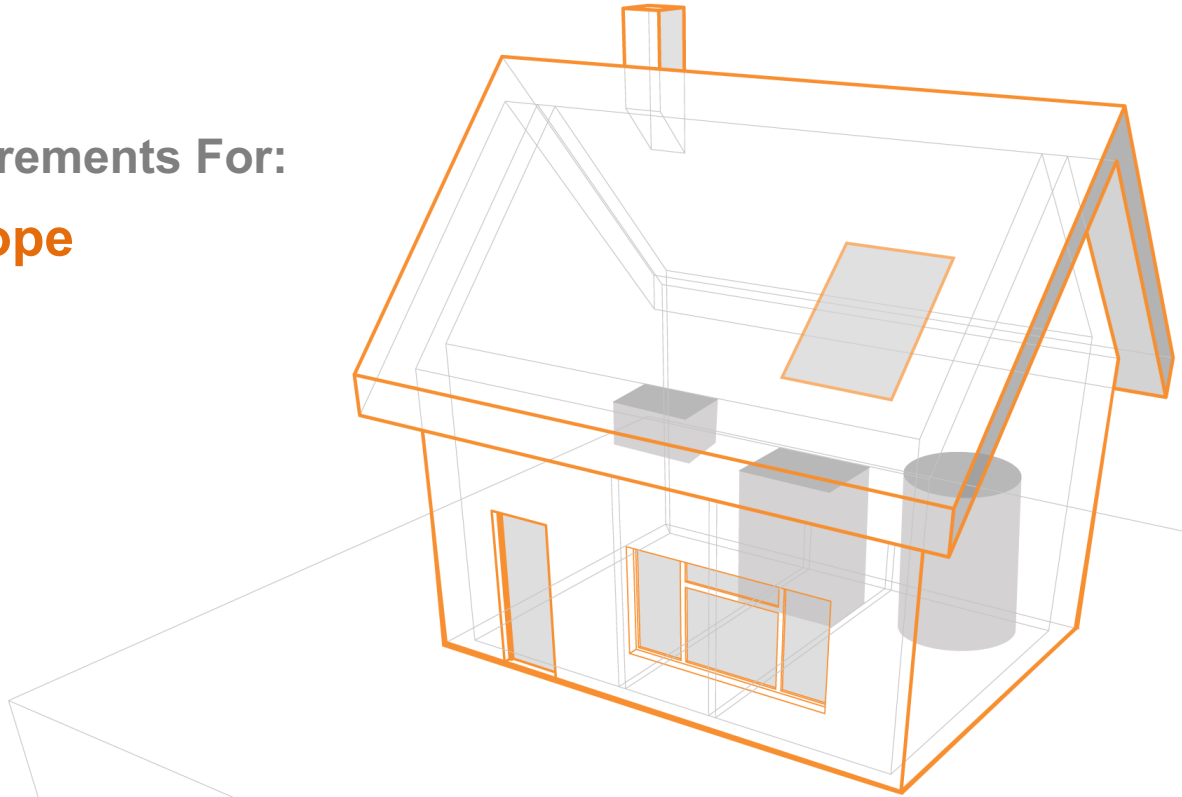


Part 9 | Upper vs. Lower Steps – Application in the Early Years

What Does the BC Energy Step Code Measure?

Performance Requirements For:

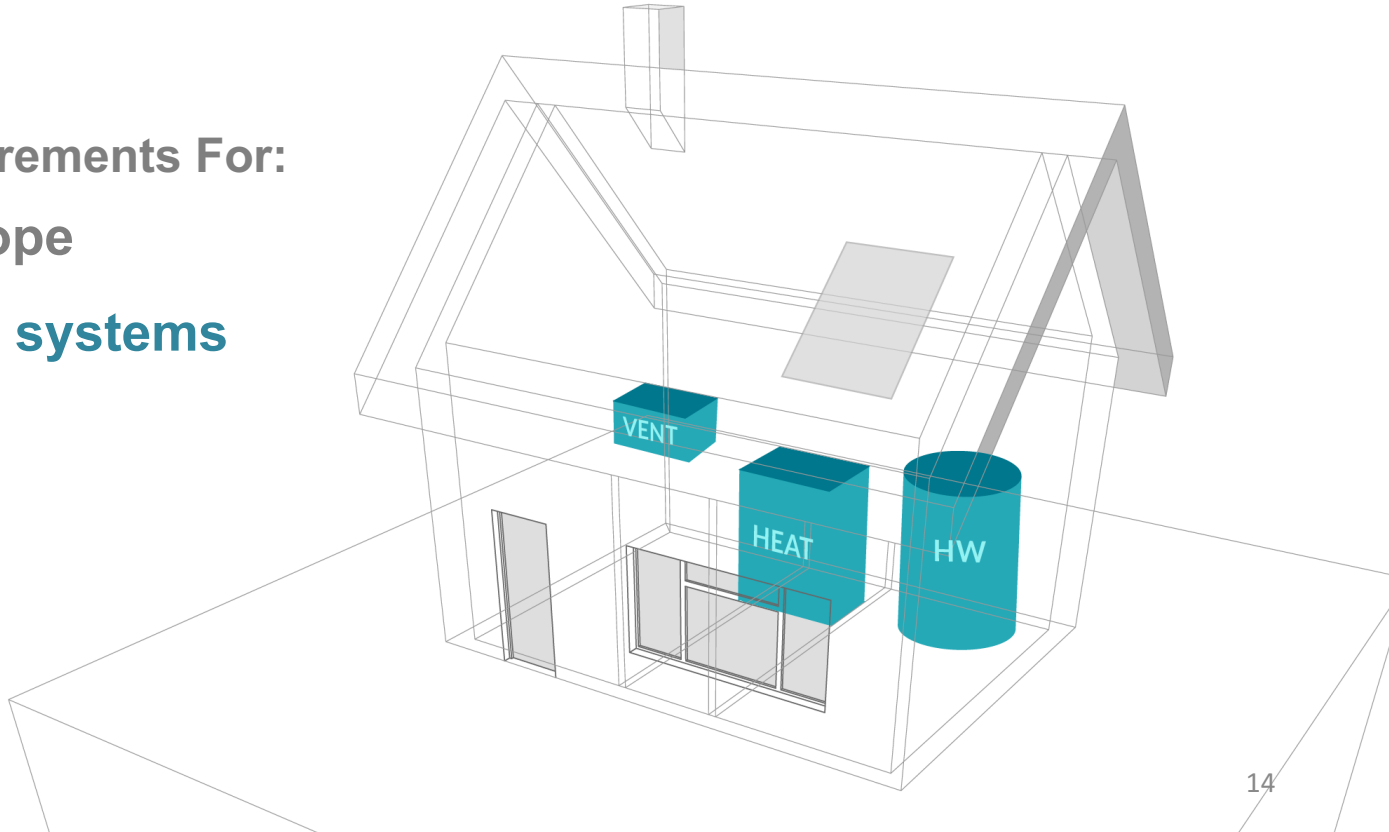
✓ **Building envelope**



What Does the BC Energy Step Code Measure?

Performance Requirements For:

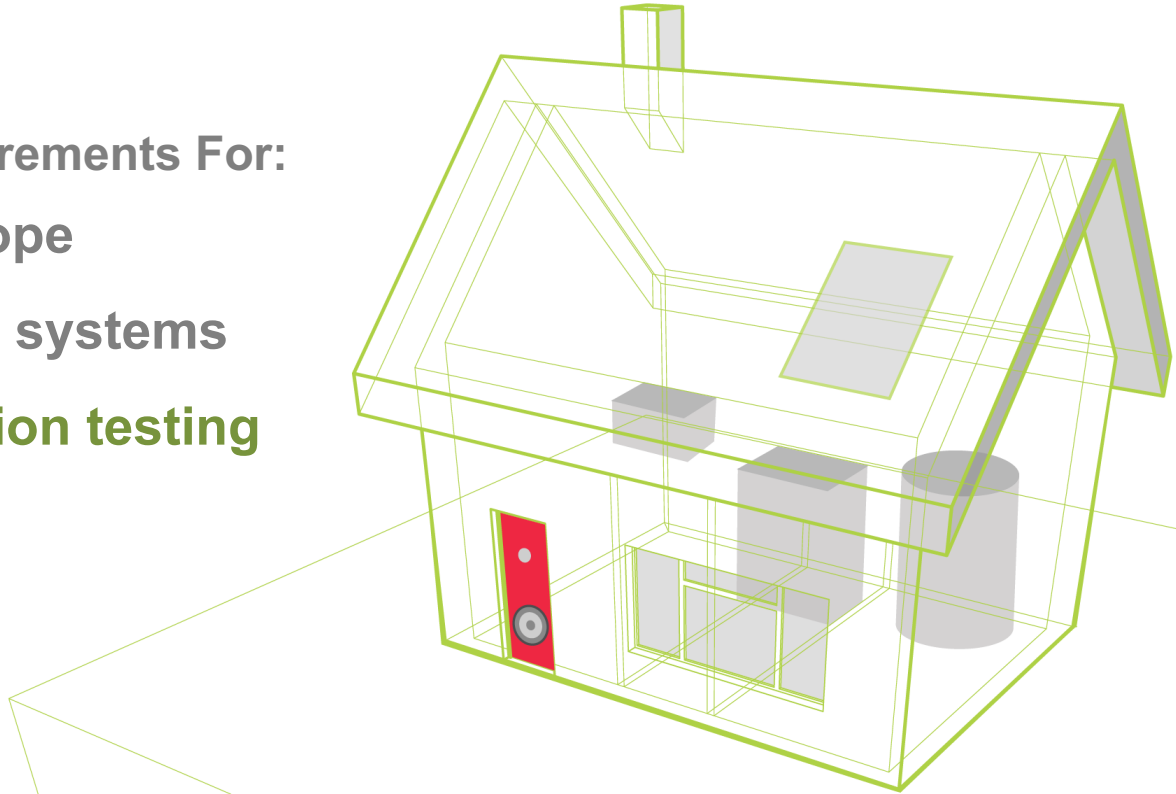
- ✓ **Building envelope**
- ✓ **Equipment and systems**



What Does the BC Energy Step Code Measure?

Performance Requirements For:

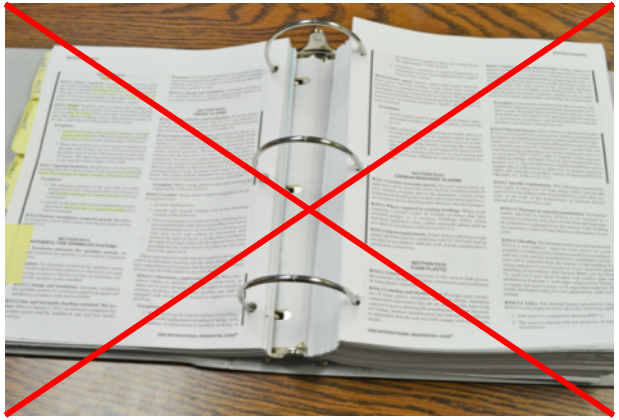
- ✓ **Building envelope**
- ✓ **Equipment and systems**
- ✓ **Post-construction testing**
  - Airtightness



Performance Compliance

Energy modeling

Air-Tightness Testing



No Prescriptive Requirements

Richmond's Regime – For Stakeholder Consultation

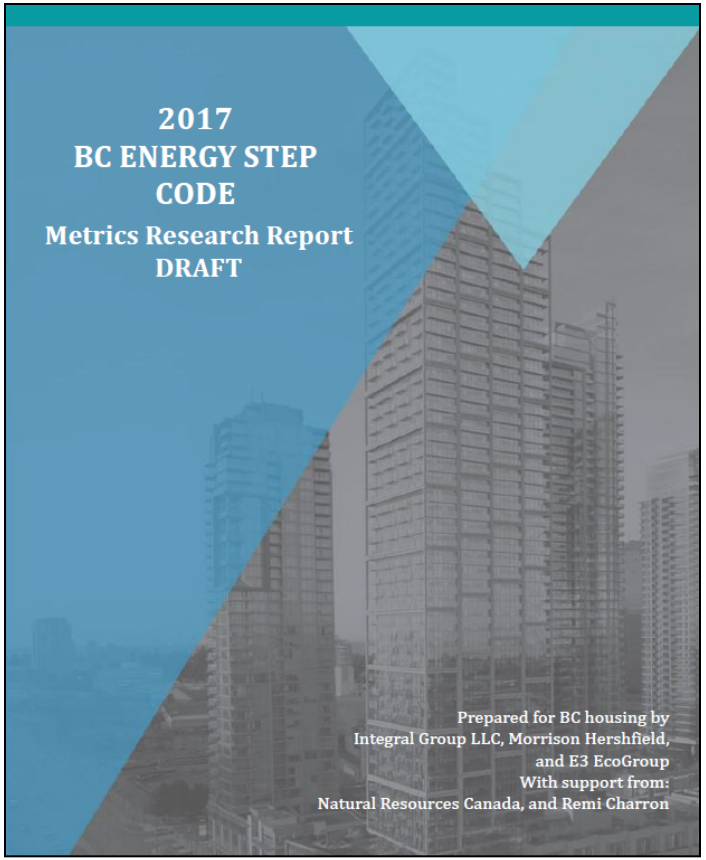
Building type	Current approximate Performance Level	December 15, 2017	~ 2021	~ 2025
Part 9 detached homes, duplexes	BC Building Code	Step 1	*Step 3*	*Step 4*
Part 9 large detached homes	BC Building Code	Step 3	*Step 4*	*Step 5*
Part 9 townhouses	~Step 2-3	Step 3	*Step 4*	*Step 5*
Part 9 low-rise apartments	BC Building Code	Step 1	*Step 3*	*Step 4*
Part 9 commercial / industrial	BC Building Code	BC Building Code	*?*	*?*
Part 9 all renovations / additions	BC Building Code	BC Building Code	*?*	*?*

Richmond's Regime – For Stakeholder Consultation

Building type	Current approximate Performance Level	December 15, 2017	~ 2021	~ 2025
Part 3 residential ≤ 6 story	Within City Centre: ~Step 1-2 Outside CC: BC Building Code	Step 3	*Step 3 or 4*	*Step 4*
Part 3 residential >6 story	Within City Centre: ~Step 1-2 Outside CC: BC Building Code	Step 2	*Step 3*	*Step 4*
Part 3 commercial	Within City Centre: ~Step 1-2 Outside CC: BC Building Code	Step 2	*Step 3*	*Step 3*
Part 3 industrial	BC Building Code	BC Building Code	*?*	*?*
Part 3 all renovations / additions	BC Building Code	BC Building Code	*?*	*?*

BC Housing – Costing Study

	Step	Est. Construction Cost Premium	
		Climate Zone 4	Climate Zone 5
Large Single Family (5000sf)	1	0.2%	0.2%
	2	0.6%	0.3%
	3	1.4%	0.3%
	4	1.4%	0.9%
	5	4.3%	7.4%
Medium Single Family (2600sf)	1	0.2%	0.2%
	2	0.6%	0.3%
	3	1.6%	0.5%
	4	2.7%	2.3%
	5	4.2%	9.5%



Research and Support Resources

Completed or Underway:

- Resource hub: ***energystepcode.ca***
- Training and capacity assessment
- Costing study
- Local government readiness survey
- Peer network for local government staff
- Webinars and presentations
- BC Housing Resources for Builders
  - Illustrated Guides to different Steps

Thank You!

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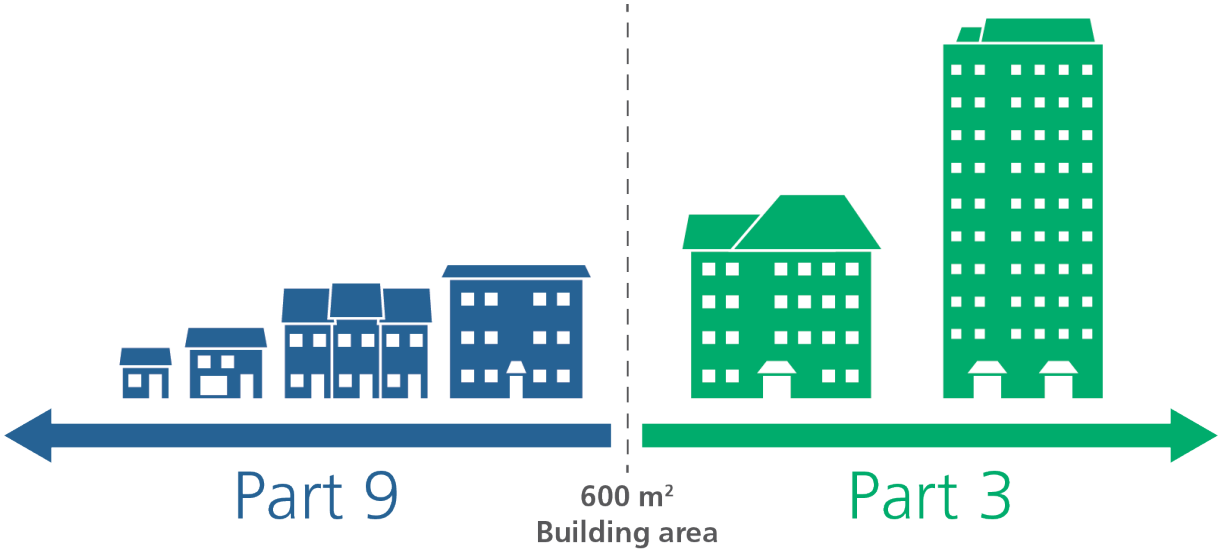
Part 3 Buildings

(Large; typically not S.F.)

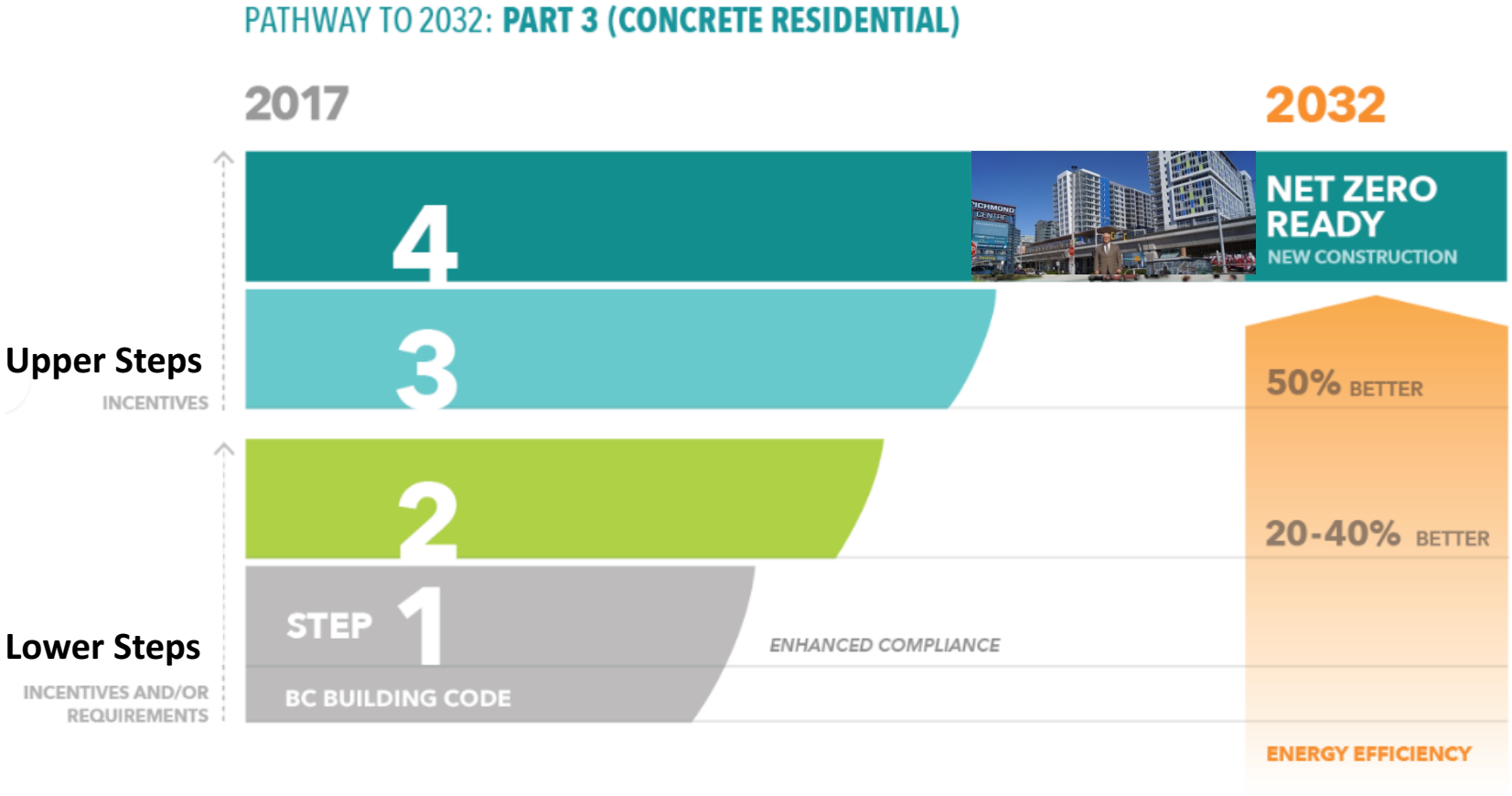
Part 3 vs. Part 9

- **Part 3 – Large and complex buildings**. These buildings are four storeys and taller and greater than 600 square metres in building area or “footprint” (e.g. larger apartment buildings, condos, shopping malls, office buildings, hospitals, care facilities, schools, churches, theatres, and restaurants).
- **Part 9 – Houses and small buildings**. These buildings are three storeys or less and have a building area or “footprint” no more than 600 square metres (approximately 6,500 square feet). (e.g. single-family, duplexes, townhomes, small apartment buildings, and small stores, offices, and industrial shops).



Part 3 Residential – Wood Frame

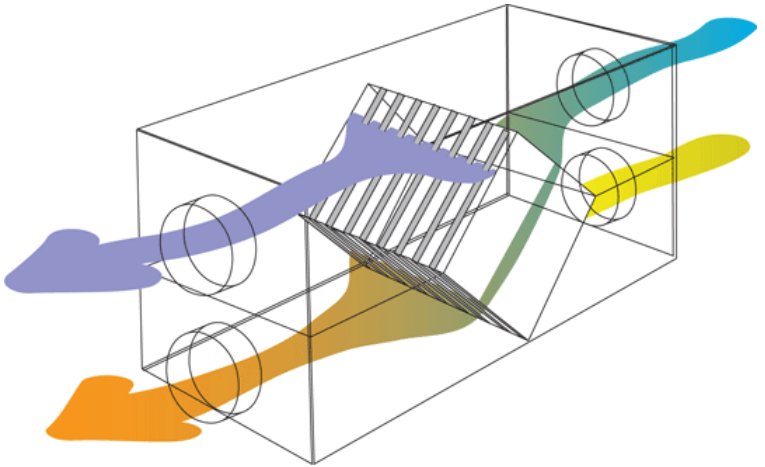
Part 3 Residential - Concrete



Ventilation Requirements in Energy Step Code

BCBC 6.2.2. - Ventilation

- “For suites in buildings subject to the [BC Energy Step Code] … outdoor air… shall be supplied to each suite by mechanical ventilation through ducting.”
- “The indirect supply of required outdoor ventilation air to normally occupied spaces through corridor pressurization or other indirect systems is not permitted.”



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