

RTS #12332

Energy and Water Efficiency Updates to Building By-law and Rezoning

Planning, Urban Design & Sustainability

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May 2, 2018



- Context
- Recommended energy efficiency updates
- Recommended water efficiency updates
- Summary

An architectural rendering of a modern building with a facade of vertical, illuminated panels. The building is shown from a low angle, emphasizing its height. A semi-transparent blue horizontal band with a fine grid pattern is overlaid across the middle of the image. The word "Context" is written in white, sans-serif font on the right side of this band.

Context



EcoDensity (2008)

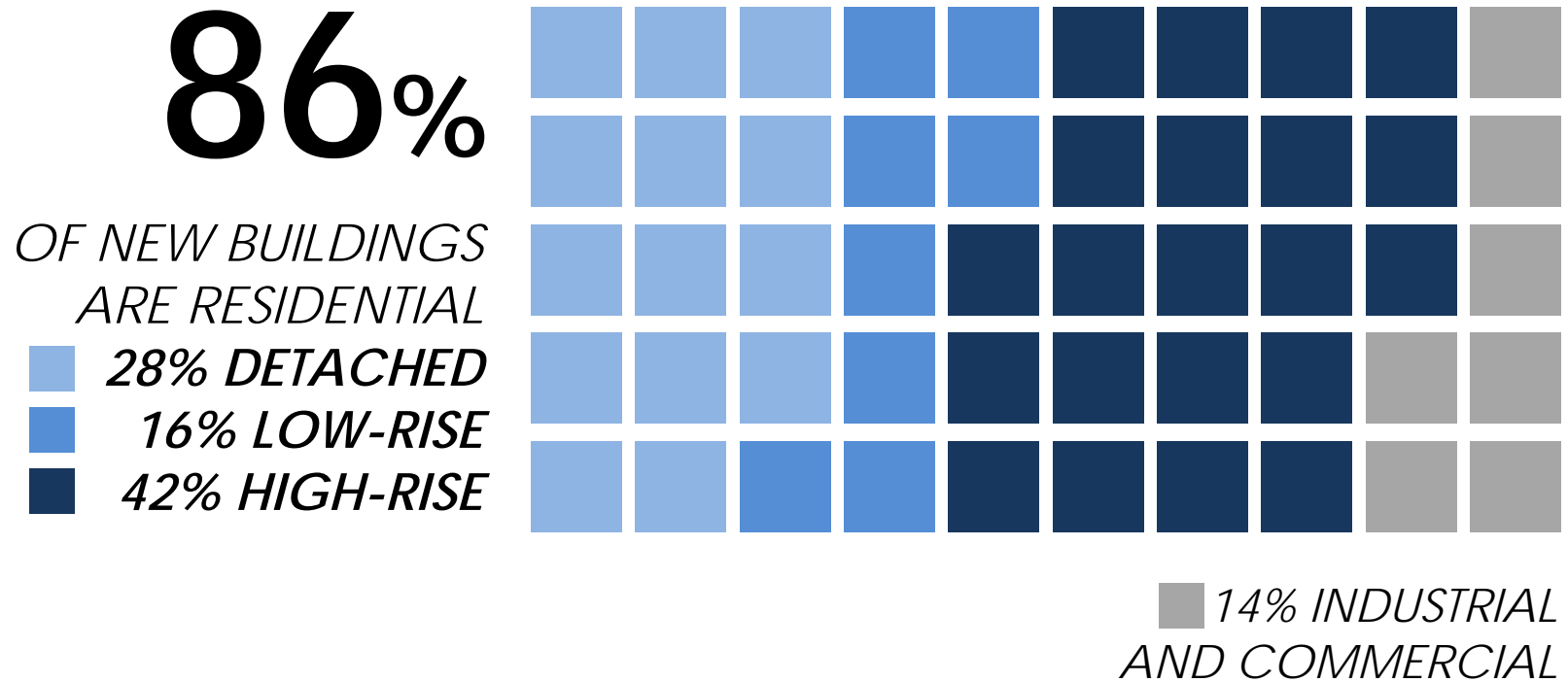
- Rezoning Policy for Greener Buildings
- Green Homes Program
 - Introduce Building Bylaw requirements for increased insulation, heat recovery ventilation and airtightness for detached homes

The logo for EcoDensity, with "Eco" in blue and "Density" in green, both in a bold, sans-serif font.

Greenest City Action Plan (2011)

- Goal 1: Reduce GHG emissions
- Goal 2: Lead the world in green buildings
- Goal 6: Reduce water use
- Goal 9: Create green jobs





(New Construction Data, City of Vancouver, 2015-2017)

Zero Emission Buildings Plan (2016)

1. Set limits on GHG's and heat loss
2. City leadership
3. Catalyze voluntary leadership
4. Build capacity



Zero Emissions Building Plan

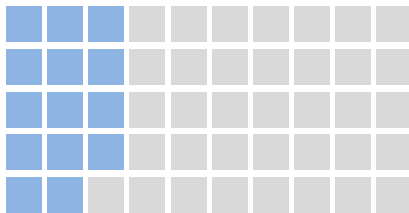
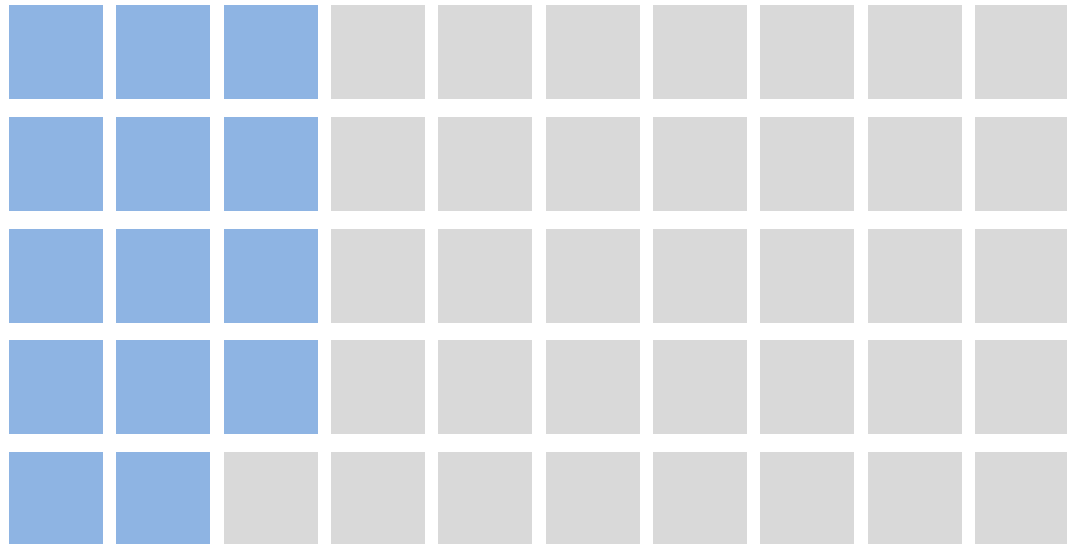
2016

BC Energy Step Code (2017)



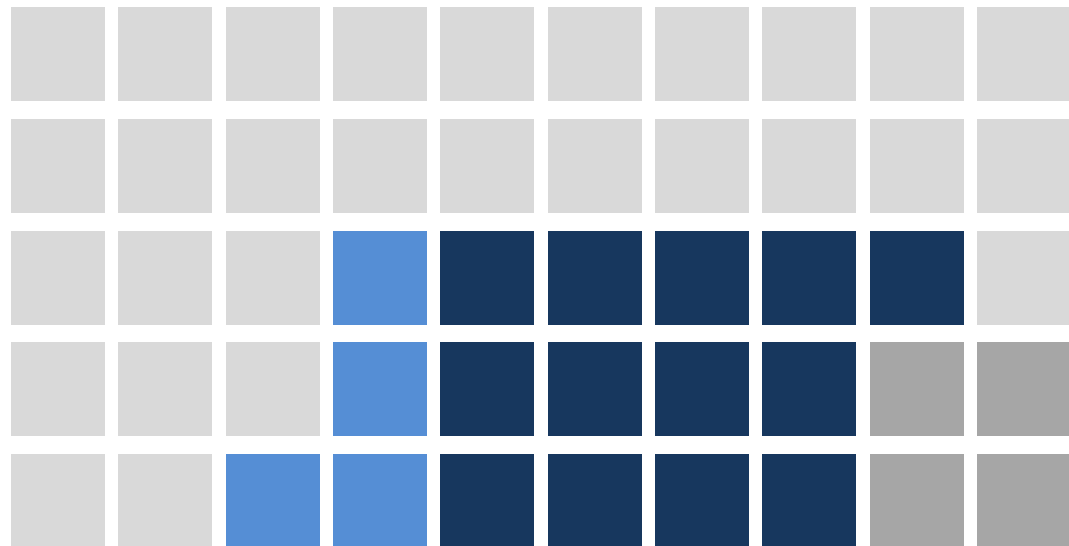
2014

*NEW BY-LAW
REQUIREMENTS FOR
DETACHED HOMES
~STEP 3 OF 5
50% LESS GHGS*

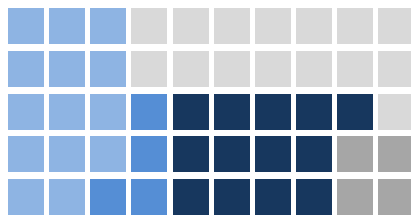


2016

*NEW REZONING
REQUIREMENTS
STEP 3 OF 4
50-70% LESS GHGS*

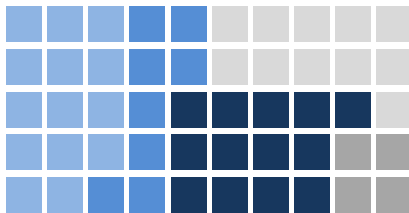
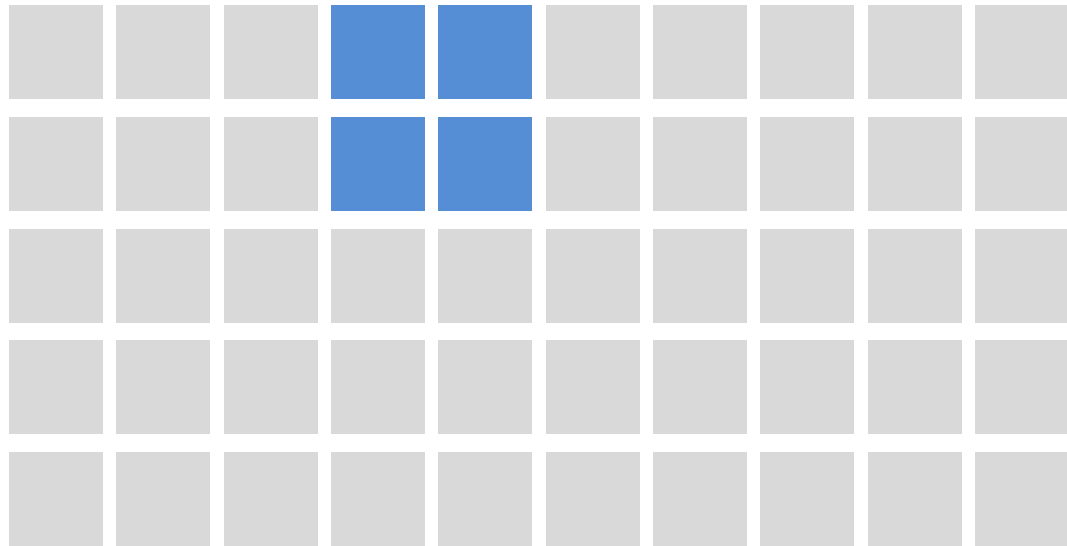


55% OF LARGE BUILDINGS ARE REZONED



2017

*NEW BY-LAW
REQUIREMENTS FOR
LOW-RISE RESIDENTIAL
STEP 3 OF 4
50-70% LESS GHGS*



Update on Zero Emissions Civic Facilities

July 2018



Catalyst Tools

- Tools to encourage and support voluntary private sector leadership
- Foster innovation in design and construction
- Advance supply chains, leading to lower construction costs
- Remove regulatory barriers
- Inform and enable future code updates

Zero Emissions Buildings Catalyst Policy

- Referred to May 22 Public Hearing
- Time limited until 2025
- Director of Planning discretion
- Up to 5% increase in permitted floor area

Capacity building to date

- Grant to BCIT for discounted trades training
- Industry guides & training
- Training and tools to streamline staff review
- Zero Emission Buildings Centre of Excellence (ZEBCoE)

ILLUSTRATED GUIDE



Energy Efficiency Updates

Zero Energy Building Learning House

The ZEB House shows a progression of building strategies to meet the BC Energy Step Code and the possible steps towards buildings using no energy.

ZEB House features four wall and three roof types with many of the interface details common to Part 9 residential buildings. The heat recovery ventilator shows installation and allows for commissioning. The purpose of the design is to provide a learning platform where strategies are demonstrated, debated, and tested.

Vancity

BC Hydro
Power smart

BC HOUSING

CITY OF
VANCOUVER



RDH BUILDING
SCIENCE

SMALL PLANET
SUPPLY

local.

SIGA



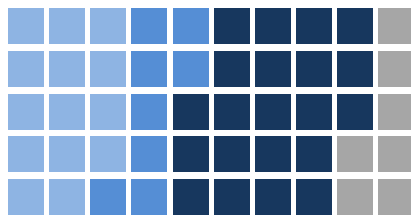
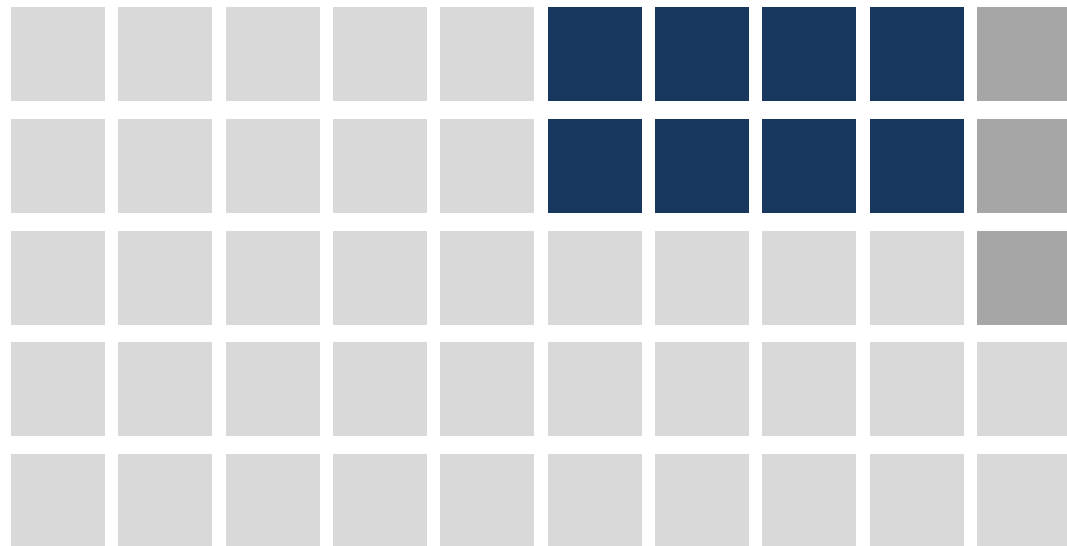
footprint

BCIT

Recommended Energy Efficiency Updates



*NEW BY-LAW
REQUIREMENTS
FOR HIGH-RISE
RESIDENTIAL (>6 STOREYS)
AND COMMERCIAL*



BC Energy Step Code Adoption

- 23+ Local Govt's adopting Step Code
 - North Shore communities
 - Surrey, Richmond, New Westminister, Victoria, Kelowna etc
- Direct ventilation
 - filtered fresh air direct to living spaces
- Insulation and airtightness
 - reduced drafts and noise

Outcomes

High-Rise Residential and Commercial

	Step 2
GHG Emissions vs. current code	▼ 20 – 30%
Energy Costs vs. current code	▼ 10 – 15%
Construction Costs vs. current code	▲ 0.4 – 0.6%
Net Monthly Savings Energy savings - mortgage payment	\$5
Implementation Date	June 2019

Outcomes

High-Rise Residential and Commercial

	Step 2	Step 3
GHG Emissions vs. current code	▼ 20 – 30%	▼ 20 – 70%
Energy Costs vs. current code	▼ 10 – 15%	▼ 20 – 30%
Construction Costs vs. current code	▲ 0.4 – 0.6%	▲ 0.8 – 1.0%
Net Monthly Savings Energy savings - mortgage payment	\$5	\$0 – 10
Implementation Date	June 2019	June 2021



Other Updates

- Low-rise *mixed-use*: align with current 4-6 storey residential requirements
- Other building types: approve Provincial Code changes for VBBL
- Rezoning policy: minor amendments
 - e.g. low-emitting materials for Passive House

Water Efficiency Updates



Recommended Water Efficiency Updates

Category	Summary of Updates
 <p data-bbox="598 630 753 670">Fixtures</p>	<ul style="list-style-type: none"><li data-bbox="921 605 1661 651">• Harmonize with provincial proposals<li data-bbox="921 656 1698 695">• Residential kitchen faucets: 6.8 L/min.
 <p data-bbox="598 906 810 946">Appliances</p>	<ul style="list-style-type: none"><li data-bbox="921 857 1688 997">• Energy Star for new clothes washers, dishwashers, ice machines, steam cookers and combination ovens.



Summary



Summary

- ZEBP being implemented as planned
- Catalyst policy referred to Public Hearing
- Recommended energy efficiency changes
 - Step 2 in June 2019
 - Step 3 in June 2021
- Recommendations for water efficiency