Air Tightness in the City of Vancouver

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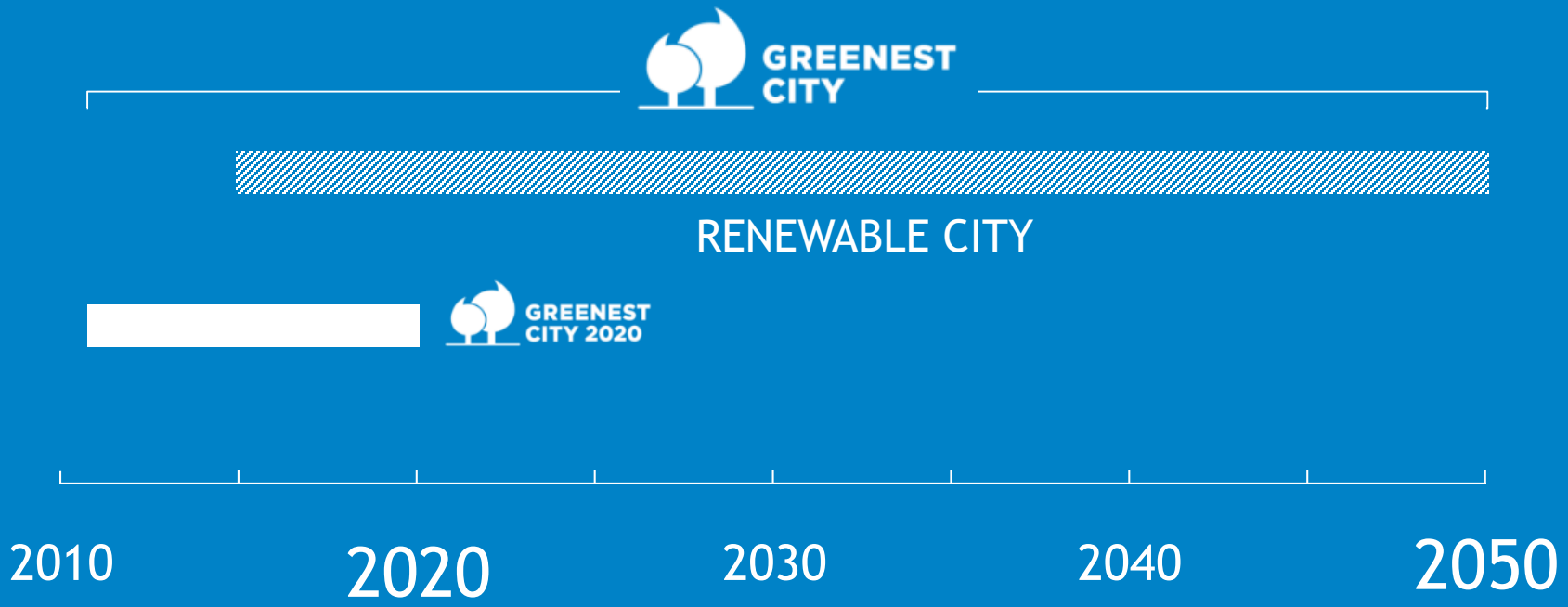
Overview

1. What are our goals
2. What is the context
3. What are we requiring
4. What was considered

Goals

2020 AND BEYOND

In November 2015, City Council renewed its commitment beyond 2020 to achieving 100% renewable energy use by 2050.



Goals

1. Lower energy use

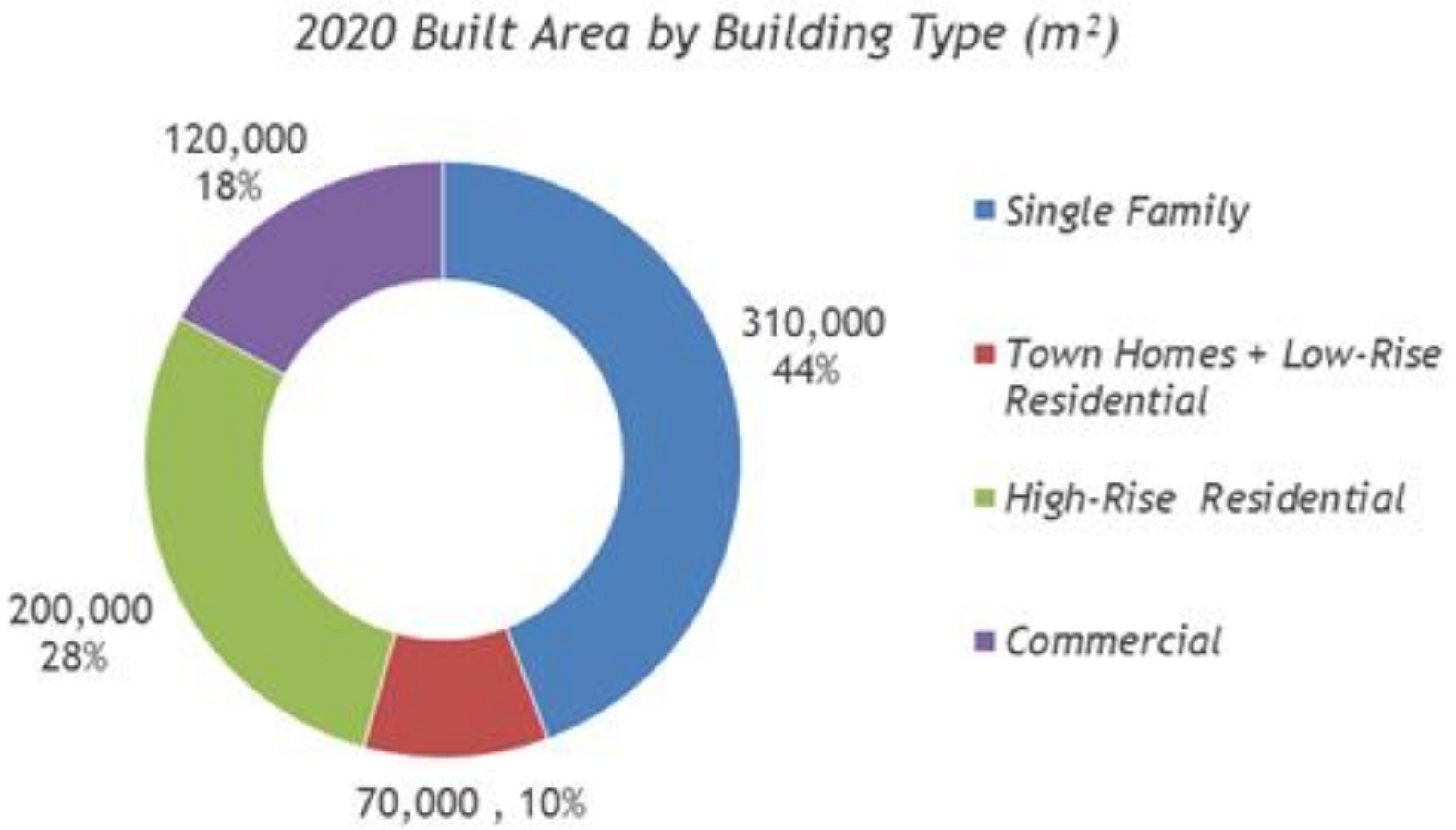
2. Improve indoor air quality

Goals

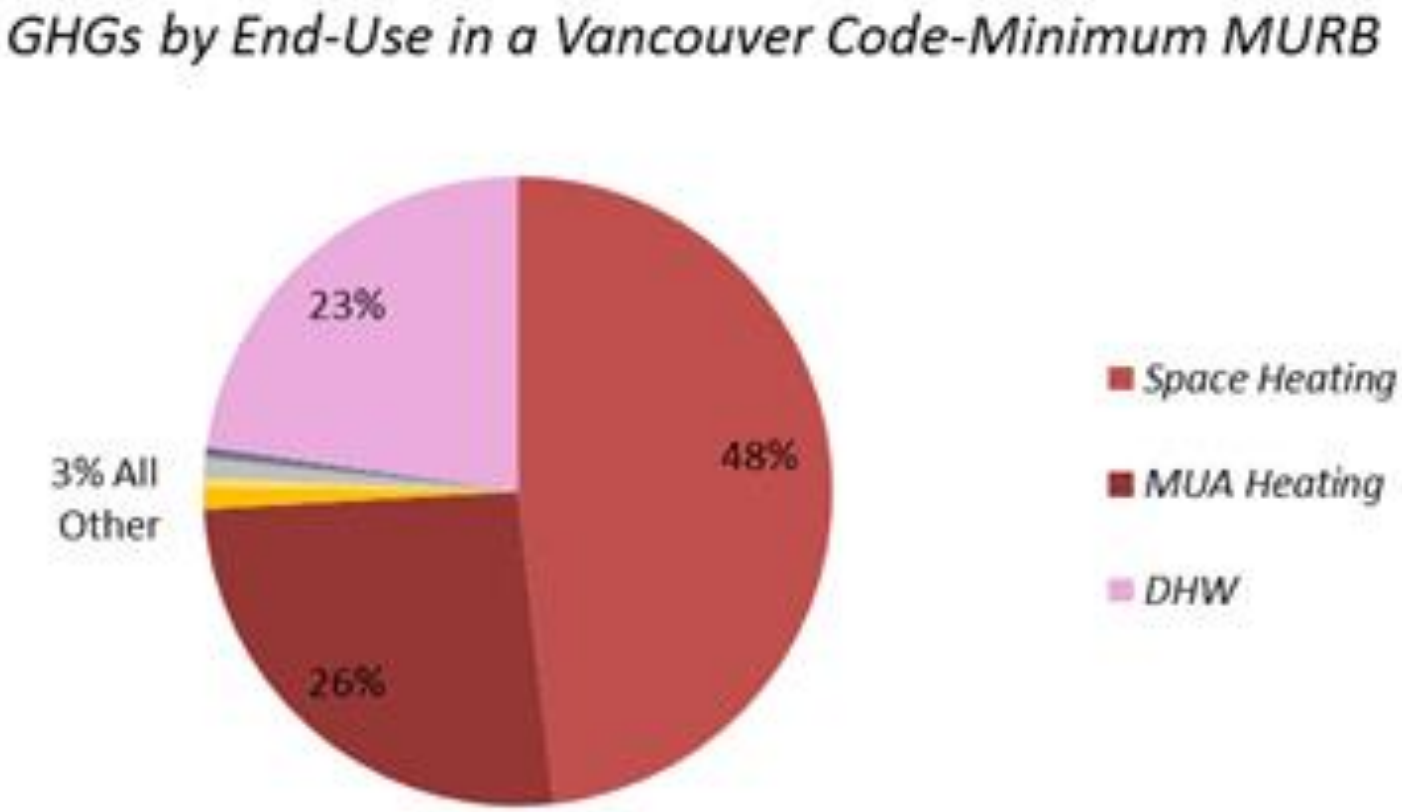
3. Reduce noise

4. Improve building durability

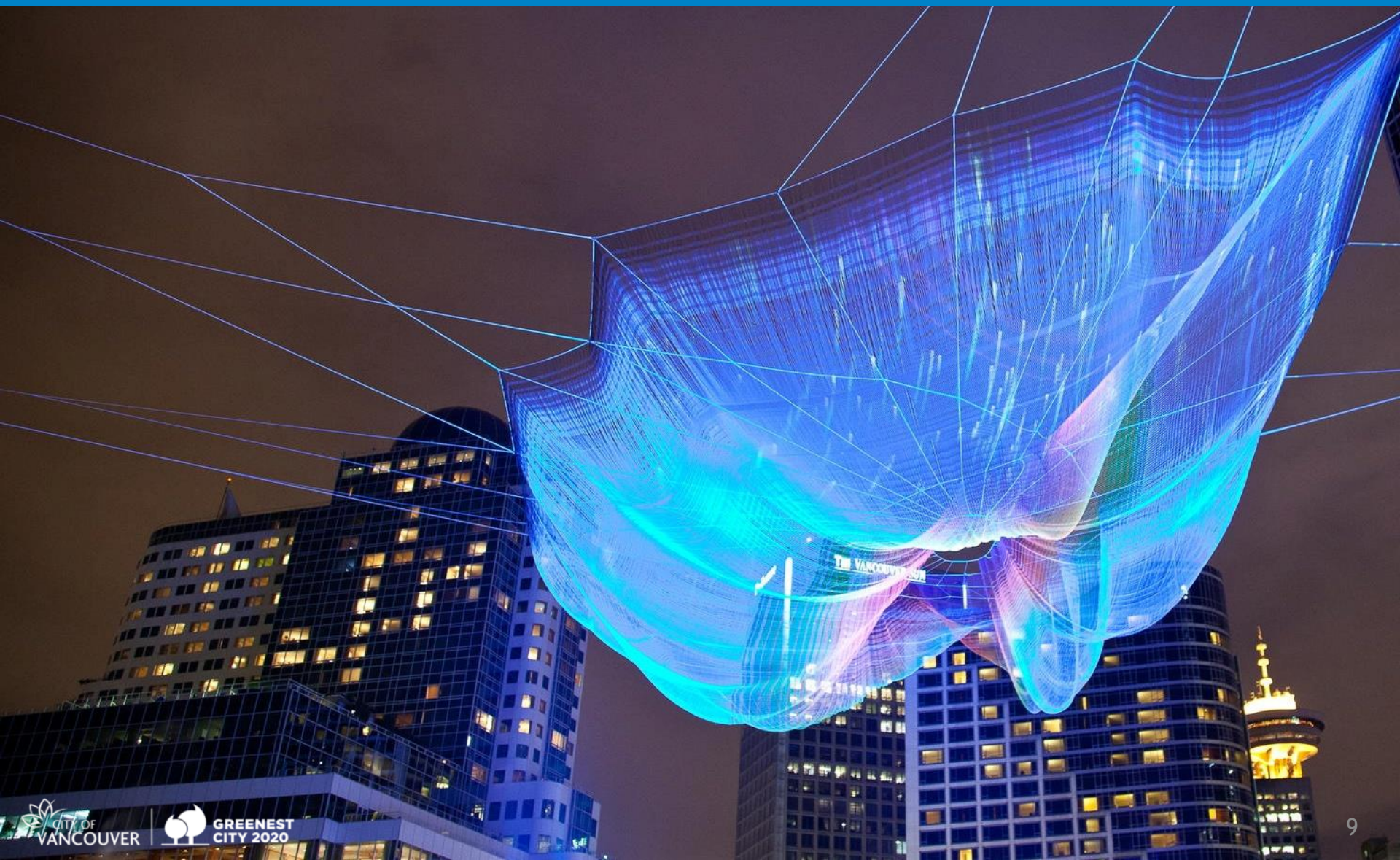
New building space m2 (annual)



Greenhouse Gas profile of new multi family buildings



Specific Updates



Building By-law Requirements

1. **Single Family: 3.5** Air Changes at 50 pascals - January 2015

2. **Other Part 9 residential:** (townhomes and 3 storey MURB): 3.5 ACH50 - March 2018

3. **Purely Residential Buildings 6 Storeys and under:** 2 L/s*m2 (2 liters per second per square meter of envelope area) at 75 Pa – March 2018

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Rezoning Requirements

1. **Any Rezoned Building:** 2 L/s*m2 (2 liters per second per square meter of envelope area) at 75 Pa – May 2017. (Surface area)

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Prescriptive Envelope Requirements

Components Metric (Imperial)	1&2 Family (Existing)	MURB <4 Storeys (inc townhome)	MURB 4-6 Storey
Walls (above and below grade) RSI	3.85 (R22)	3.85 (R22)	3.85 (R22)
Full Attic RSI	8.5 (R48)	8.5 (R48)	8.5 (R48)
Under slab RSI	2.5 (R14)	2.5 (R14)	2.5 (R14)
Windows + sliding glass doors	U1.4 (0.25)	U1.4 (.25)	U1.4 (.25)
Airtightness (not converted M/I)	Testing + 3.5ACH50	Testing + 3.5ACH50	Testing + 2.0/liters/sec/m2

Metric & Effective: (Imperial) numbers provided for information only, regulation will be metric

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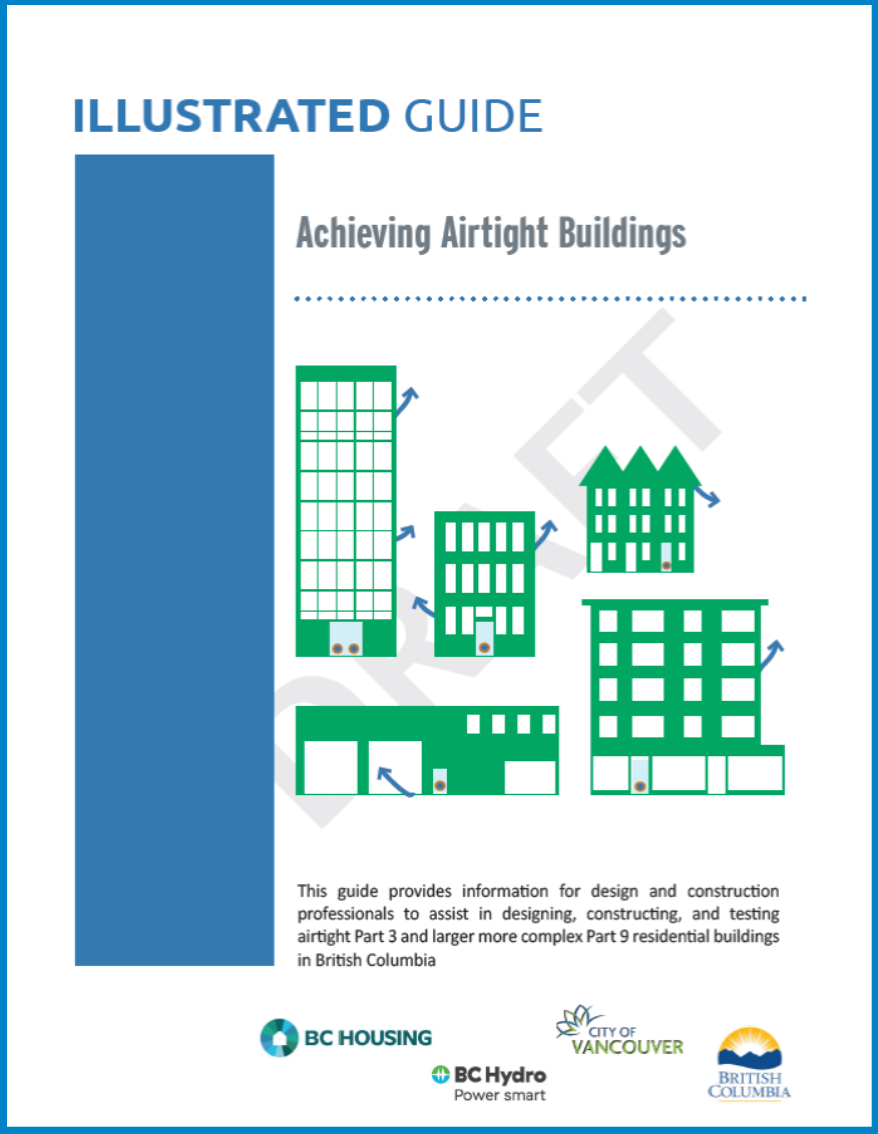
Prescriptive Mechanical

Mechanical Components	1&2 Family	MURB <4 Storeys (inc townhome)	MURB 4-6 Storey
Heat Recovery Ventilator with Direct ventilation	65%	65%	65%
Furnace / Make up air	92%	92%	92%
Boiler	92%	92%	92%
Domestic Hot Water	78%	78%	78%
Fireplaces	Direct Vent Electronic Ignition	Direct Vent Electronic Ignition + fireplace timer	Direct Vent Electronic Ignition + fireplace timer
Outdoor fireplaces	Electronic Ignition + fireplace timer	Electronic Ignition + fireplace timer	Electronic Ignition + fireplace timer

Supporting Industry

Air Tightness Guide



Training, Education and Materials

- Develop guidance and training on designing, building, and testing new low-rise multi-family homes to meet new air tightness requirements
- R22 Midrise Wall Guide, R30 Flat roof guide
- Hosting education and awareness sessions with GVHBA, UDI, AIBC, APEGBC and other industry stakeholders

Who Can Perform the Air Tightness Test

- **1&2 Family Homes:** Any Energy Advisor in good standing with Natural Resources Canada
- **Other Part 9 Residential:** Any Energy Advisor that works with a Service Organization selected by the City
- **All other Buildings:** Individuals that can demonstrate past experience OR individuals with training and certification acceptable to the city

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Timeline

- Rezoning Policy: May 2017
- Building Code Updates: March 1st 2018

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Why focus on Air Tightness?

1. One of the most cost effective strategies
2. Building durability
3. Sound attenuation
4. Seattle

Outcomes

Outcomes

- 55% reduction in greenhouse gases compared to current outcomes
- 40% reduction in energy use compared to current outcomes
- Lower cost on a monthly basis for homeowners and renters
- Harmonized and simplified building code
- Construction is simpler with the same requirements

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Thank You

Building Code Questions

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Rezoning Policy Questions

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