Proposed 2014 Building By-law

Council Presentation

September 24, 2013

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Director and Chief Building Official

Licenses & Inspections Department

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Outline:

- Objectives/Alignment with Strategic Goals
- Alignment with National & Provincial Codes
- Development Process
- Industry Stakeholder Engagement
- Summary of Changes
- Affordability Analysis
- Implementation
- Next Steps

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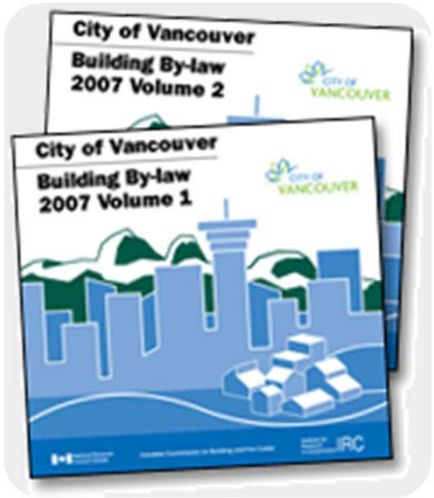
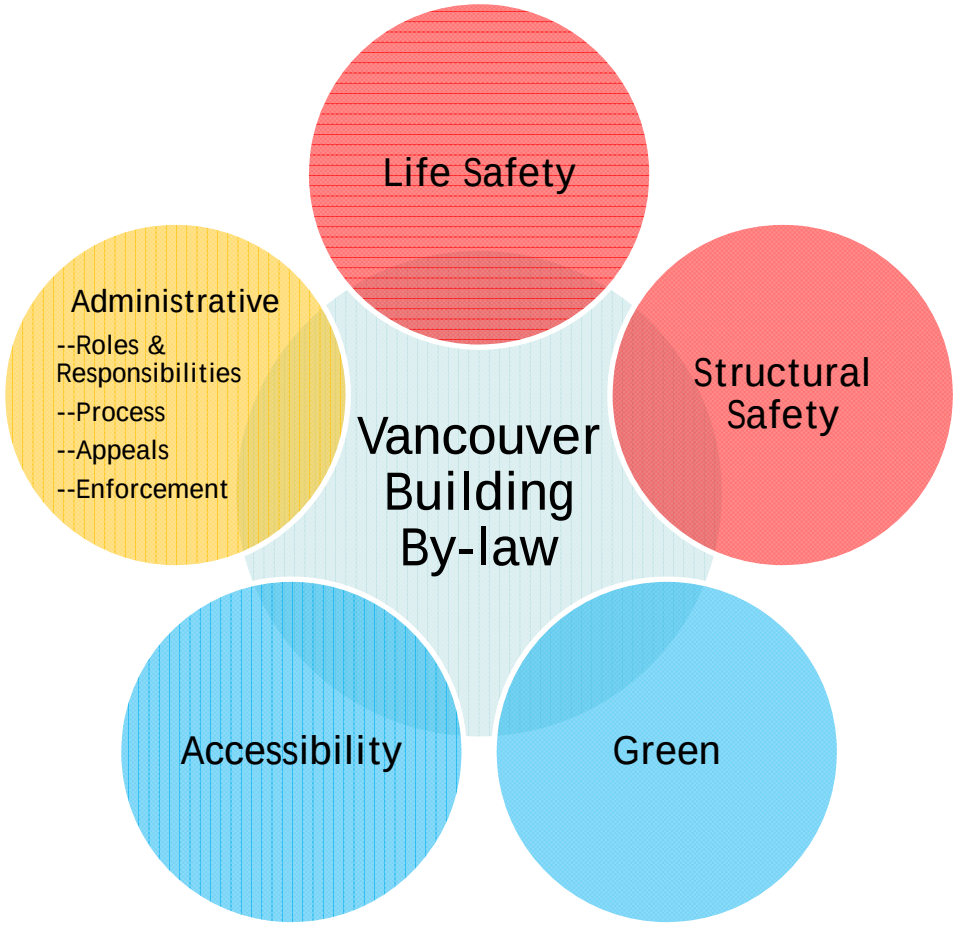
By-law Objectives & Alignment with Strategic Goals





Strategic Goals:

- **Excellent and administratively effective services**
- **Green building leadership**
- **Sustainable, affordable, livable, inclusive city**
- **Safe and secure city**

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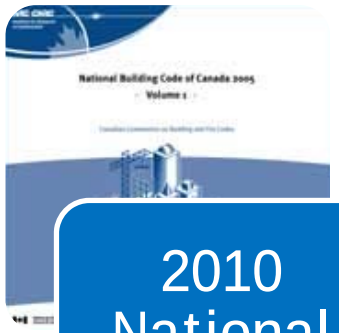
Alignment with National & Provincial Codes



2010 National Building Code

2012 BC Building Code

2014 Vancouver Building By-law

Insert **BC Variations**

Insert **Vancouver Variations**

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Development Process & Goals

Development Goals:

- Streamlining with Model Codes
- Eliminate outdated regulations
- Continue to Demonstrate leadership through innovation
- Permit greater design flexibility
- Add greater clarity
- Simplify permitting and inspection processes
- Advance key strategic directions

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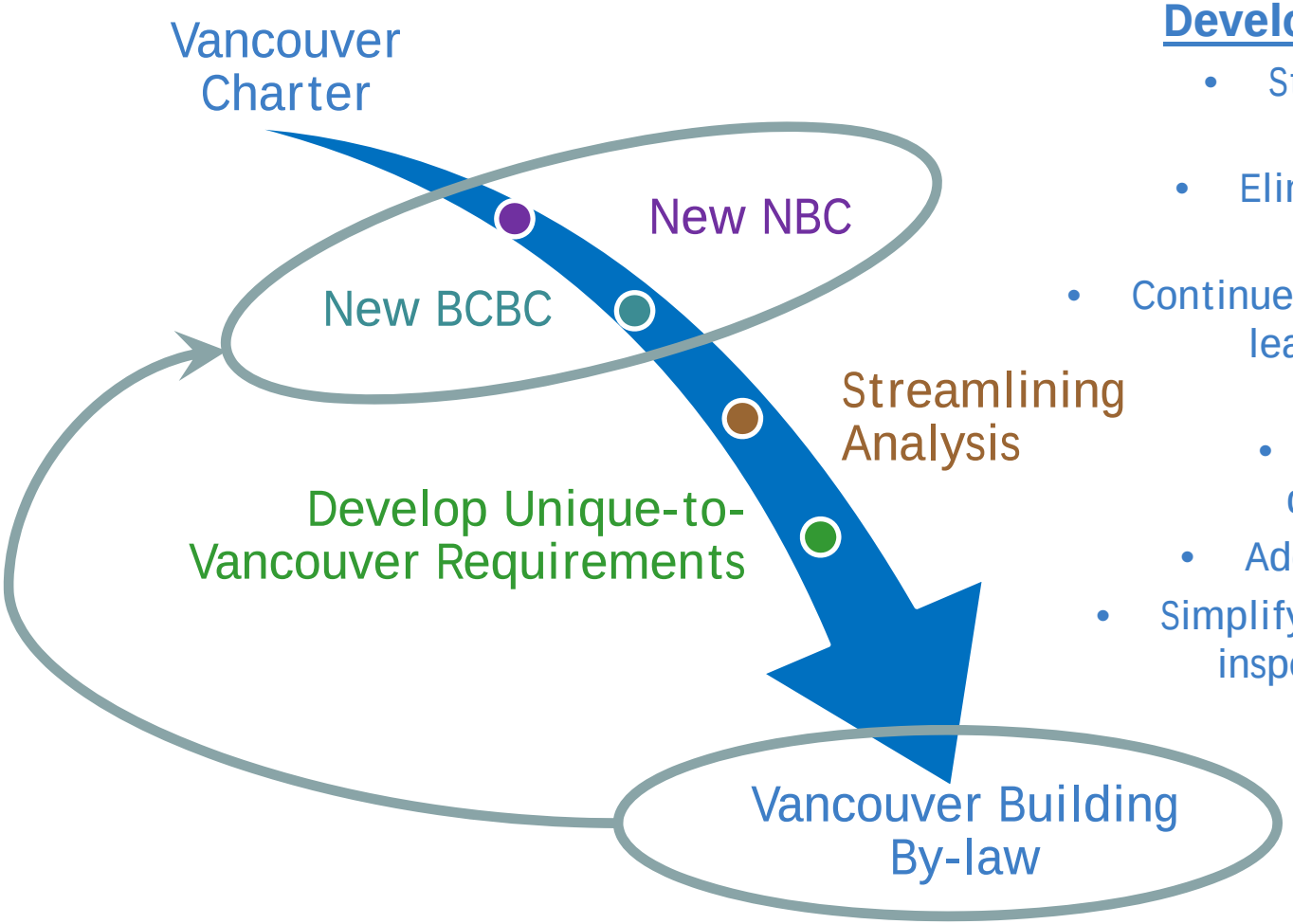
Development Process & Goals



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- Simplify permitting and inspection processes

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Industry Stakeholder Engagement

CITY DEPARTMENTS

- Planning & Development Services
- Community Services
- Fire Services
- Sustainability Office
- Facilities
- Engineering Services
- Legal Services

INDUSTRY STAKEHOLDERS

- Architectural and Professional Engineering Associations
- Urban Development Institute
- Canadian Home Builders Association
- Greater Vancouver Home Builders
- BOMA
- Fenestration BC

ADVISORY COMMITTEES

- Seniors Advisory Committee
- Persons with Disabilities Advisory Committee
- LGBTQ Advisory Committee
- Women's Advisory Committee

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Summary of Proposed Changes

- Administrative
- Energy and Water Efficiency
- Accessibility (Adaptable Housing)
- Building By-law Upgrades for Existing Buildings
- Temporary Buildings
- Fire and Life Safety Requirements

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Summary of Changes
(Administrative)

- More effective process for serving orders
- Ability to set completion dates for enforcement cases
- Allow additional permit extensions without Council approval
- Explicit reliance on Registered Professionals
- Alignment of fines & penalties with other by-laws

Summary of Changes
(Energy and Water Efficiency)

One and Two Family Dwellings

- Improved energy efficiency for walls, roofs, windows, and skylights
- Energy efficient hot water tanks, boilers, and furnaces
- Electric vehicle charging outlets in garages
- Energy efficient wood burning heating appliances

Savings

- 75% less GHGs than average existing home
- 50% less GHGs per home than BC Building Code
- Step towards goal of carbon neutral by 2020 (next updates in 2017 & 2020?)

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Summary of Changes
(Energy and Water Efficiency)

<u>One & Two Family Dwelling</u>:

- Performance based on NRCan's EnerGuide Model
- 1-100 score with 100 being most efficient

EnerGuide (EGH) 80 = Reasonably efficient home

• Current VBBL	EGH 77 average of all ratings
• **Proposed VBBL:**	**EGH 81 average of all ratings**
• North Vancouver:	EGH 80 minimum
• Province of Ontario:	EGH 80 minimum (2012)
• Province of BC:	EGH 80 (option only Dec 2014)
• City of Toronto:	EGH 83 minimum (Jan 2014)

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Summary of Changes
(Energy and Water Efficiency)

Large/Complex Buildings:

- ASHRAE 90.1 2010 (~15% improvement over current code)
- Option for National Building Code (NECB 2011)
- Electric Vehicle Charging 10% of stalls

Multi-Family only:

- High Efficiency or Dual Flush Toilets
- Green Switch for overhead lighting
- Stairwell Lighting Sensors
- Variable Parkade Lighting Levels

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Why ASHRAE 90.1 2010?

ASHRAE (*American Society of Heating, Refrigeration and Air Conditioning Engineers*)

Vancouver has referenced ASHRAE since 1990s

In the last year, ASHRAE 90.1 2010 adopted by:

- Province of BC (Dec 2013) 90.1 2010
- Province of Ontario (2012) 90.1 2010 + 5% better
- City of Toronto (2014) 90.1 2010 + 20% better
- Numerous U.S. states and cities

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Summary of Changes
(Energy and Water Efficiency)

All Buildings

- Allow rain water harvesting & green roof systems
- Master light control for apartment buildings
- Sub metering of natural gas equipment in apartment buildings
- Declaration of anticipate energy performance at design stage

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Summary of Changes
Energy and Water Efficiency

Summary of Cost Impacts of Energy Related Updates

(Based on BTY Costing Study)

Building Type	Payback on Energy Upgrades	Energy Savings (%)	Incremental Capital Cost (% of Construction cost)	Incremental Capital ($ per sq. ft.)
High-rise Residential (20 Storey)	2 years	7%	0.04%	$0.10
Mid-rise Residential (5 Storey)	1 year	5%	0.02%	$0.06
Mid-rise Mixed Use (with Ground Retail)	2 years	5%	0.05%	$0.10
Low-rise Commercial (Stand Alone Retail)	2 years	19%	0.17%	$0.30
High-rise Commercial (17 Storey Office)	2 years	16%	0.10%	$0.20
Mid-rise Commercial (5 Storey Infill Office)	2 years	17%	0.17%	$0.31
Wood Frame Mid-rise Residential	1 year	3%	0.04%	$0.06

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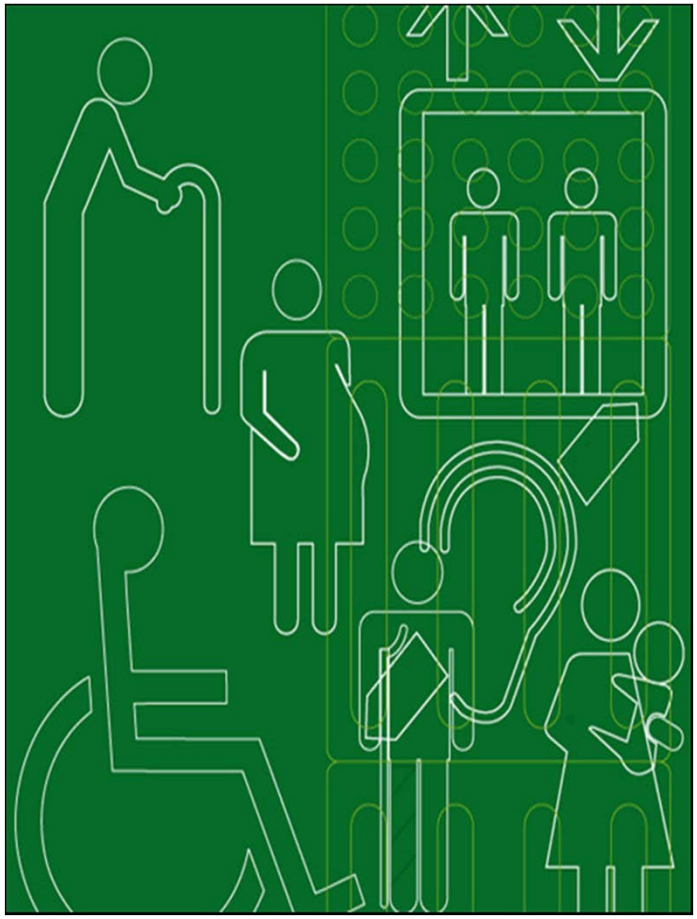
Summary of Changes
Accessibility (Adaptable Housing)

- Worked closely with Advisory Committees (Persons with Disabilities and Seniors)
- Simple and low cost provisions
- Enable adaptability and visitability
- Low cost features at the time of construction
- Study with report back on feasibility of accessible entrances



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Summary of Changes
Accessibility (Adaptable Housing)

Apartment Buildings

- Improvements to "enhanced accessibility requirements
- Ban use of mechanical lifts, unless demonstrated hardship
- Automatic door openers at main entry
- Establish door closure rates
- Require accessible signage for persons with visual disabilities

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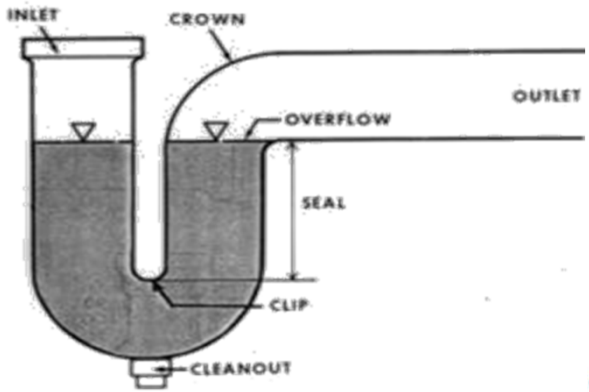
Summary of Changes
Accessibility (Adaptable Housing)

Kitchens

- Lever faucets on sinks
- Lower waste pipe below sink to allow for lowering of counter

Electrical Outlets & Building Controls

- Raise outlets, except where floor to ceiling glazing prohibits
- Accessible building controls
- Electrical outlets at top and bottom of stairs



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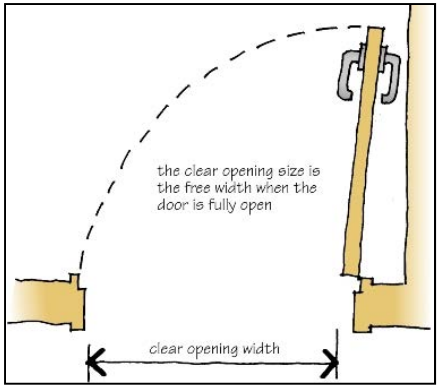
Summary of Changes
Accessibility (Adaptable Housing)

Doorways, Stairs, and Hallways

- Wider main entry doors
- Accessible door viewers or other visual devices
- Wider interior doors (consistent with public buildings)
- Wider stairs (except for laneway houses), and hallways
- Maximum 13 mm door thresholds (except for balconies & basements)



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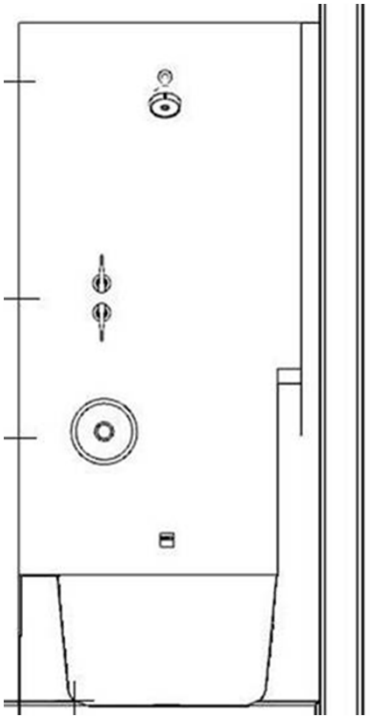
Summary of Changes
Accessibility (Adaptable Housing)

Bathrooms

- Minimum fixtures for multi-level suites
- Accessible shower or infrastructure in place to adapt in future
- Reinforcing in walls for future grab bars
- Offset bath/tub controls or free of obstructions



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Summary of Changes
(Upgrades for Existing Buildings)

- Complete re-write to simplify, refine, add clarity and remove redundant and onerous requirements
- Introduce non-structural seismic restraint (falling hazards)
- Introduce energy and water efficiency upgrades for all building types
- Encourage bathrooms and washrooms in Single Room Occupancy buildings

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Summary of Changes
(Upgrades for Existing Buildings)

One and Two Family Dwellings

Renovation Permit Value	Requirement
$5000+	EnerGuide Audit
$25,000+	Air Sealing
$50,000+	Attic Insulation

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Summary of Changes
(Temporary Buildings)

- Building Code requirements never intended to apply to temporary building structures – thus overly onerous
- Only building code to set comprehensive requirements to address temporary buildings
- Built on the legacy of the Olympic By-law
- Reasonable set of requirements that are appropriate for the intended use
- Eliminates need for costly and time consuming alternative solution approaches

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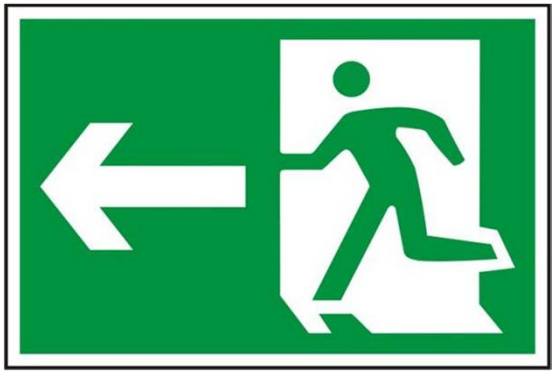
Summary of Changes
(Fire and Life Safety)

- Removed redundant and outdated requirements
- Adopted most up-to-date safety standards in national and provincial building codes
- Updated referenced safety and installation standards
- Eliminated need for approximately 25% of costly alternative solutions

Summary of Changes
(Fire and Life Safety)

- Adopts international exit signage – pictogram
- Allows greater use of photo-luminescent signage (improves energy efficiency)
- Reasonable requirements for assisted living buildings
- Simplified daycare requirements
- Eliminate onerous exiting requirements for licensed beverage establishments



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Summary of Changes
(Fire and Life Safety)

"Industrial Flex Space" option:

- Ground floor of new buildings
- Allows design innovation
- Eliminates costly alternative solutions
- Sets base life safety standards to allow variety of uses
- Enhanced safety requirements

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Summary of Changes (*Fire and Life Safety)*

- Addresses noise concerns related to mechanical equipment in one and two family homes
- Adopts most up-to-date seismic requirements
- Updated fire department access requirements to enable multifamily developments on large sites
- Establishes reasonable occupant load factors for exercise facilities

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Summary of Changes
(Fire and Life Safety)

Gender Neutral Washrooms

- Worked closely with LGBTQ and Women's Advisory Committees
- Only Building Code in Canada to recognize gender neutral washrooms
- Improves number of washrooms, privacy and security
- Reasonable toilet partition and locking device requirements
- Ensures safety concerns can be heard outside of washroom

Affordability Analysis

2007 VBBL + Fire Safety + Adaptable Housing + Green = 2014 VBBL


High-Rise Residential


Mid-Rise Residential


Townhouse


Single-Family Home


Laneway House


Single Room Occupancy

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Affordability Analysis

Summary of Affordability Analysis

(Costs are expressed in $/unit)

Cost Type	High-Rise Residential	Mid-Rise Residential	SRO	Townhouse	Single Family Residential	Laneway
Fire Safety	100	100	0	150	150	200
Adaptable	480	480	70	660	685	505
Energy/Water	80	80	80	3,275	5,265	2,575
Total	660	660	150	4,085	6,100	3,280
% of Cost of Construction	0.3%	0.3%	0.1%	1.5%	1.4%	2.3%

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Implementation

Effective Dates:

Immediately

- New Letters of Assurance for Certified Professionals

December 20, 2013

- Energy requirements for complex buildings to align with Provincial (BCBC) implementation

March 1, 2014

- Applies to all building applications submitted on or after March 1, 2014

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Implementation

Staff and Industry Training

- Deliver training on By-law changes (Dec-Feb)
- Partner with local educational institutions to develop more extensive training program on By-law

Building By-law Industry Roundtable

- Establish Roundtable to advise CBO
- Report back annually (with By-law amendments where required)

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Next Steps

Study on Accessible Path to a Building Entry

- Report back in 18 months on feasibility of mandating an accessible path from street to at least one entry of all homes

Building Retrofit Strategy

- Report back on a strategy to attain a 20% reduction in energy use in the existing buildings by 2020
- Include consideration of energy reporting requirements for larger existing buildings in the City of Vancouver

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Conclusion

- **Advances Key Strategic Goals**:
  - excellent and administratively effective services
  - Green building leadership
  - Sustainable, affordable, livable, inclusive city
  - Safe and secure city
- **Extensive Stakeholder Engagement**
- **Improves Effectiveness**
- **By-law Maintenance through Roundtable**

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