Proposed 2014 Building By-law Council Presentation
September 24, 2013

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CITY OF VANCOUVER
Outline:

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

2010 National Building Code

2012 BC Building Code

2014 Vancouver Building By-law

Insert BC Variations

Insert Vancouver Variations
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- Eliminate outdated regulations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

- Vancouver Charter
- New NBC
- New BCBC
- Streamlining Analysis
- Develop Unique-to-Vancouver Requirements
- Vancouver Building By-law
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- Eliminate outdated regulations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
# Industry Stakeholder Engagement

<table>
<thead>
<tr>
<th>CITY DEPARTMENTS</th>
<th>INDUSTRY STAKEHOLDERS</th>
<th>ADVISORY COMMITTEES</th>
</tr>
</thead>
</table>
| • Planning & Development Services  
• Community Services  
• Fire Services  
• Sustainability Office  
• Facilities  
• Engineering Services  
• Legal Services | • Architectural and Professional Engineering Associations  
• Urban Development Institute  
• Canadian Home Builders Association  
• Greater Vancouver Home Builders  
• BOMA  
• Fenestration BC | • Seniors Advisory Committee  
• Persons with Disabilities Advisory Committee  
• LGBTQ Advisory Committee  
• Women’s Advisory Committee |
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
• 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?)
Summary of Changes
(Energy and Water Efficiency)

One & Two Family Dwelling:
- 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)
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
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
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
## Summary of Cost Impacts of Energy Related Updates

*(Based on BTY Costing Study)*

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

One and Two Family Dwellings

Renovation Permit
Value Requirement
$5000+ EnerGuide Audit
$25,000+ Air Sealing
$50,000+ Attic Insulation
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
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 photoluminescent signage (improves energy efficiency)
- Reasonable requirements for assisted living buildings
- Simplified daycare requirements
- Eliminate onerous exiting requirements for licensed beverage establishments
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
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
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
## Summary of Affordability Analysis

(Costs are expressed in $/unit)

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