Land Use in a Building Code??? Meet the International Green Construction Code

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“The purpose of this code is to safeguard the environment, public health, safety and general welfare through the establishment of requirements to reduce the negative potential impacts and increase the positive potential impacts of the built environment on the natural environment and building occupants, by means of minimum requirements related to: conservation of natural resources, materials and energy; the employment of renewable energy technologies, indoor and outdoor air quality; and building operations and maintenance.”

- Section 101.3. Intent.
IgCC Development

- Developer: International Code Council (ICC)
- Publish date: March 2012
- Scope
- What projects must comply?
- Overlay to other ICC codes
- Designed to maximize adoptability
Advantages of the IgCC

- Tool for Jurisdictions seeking “green”
- Relationship with benchmarking programs
- Public evaluation process
- Uniformity across jurisdictions
Development Progression

March 2010: Public Version (PV) 1.0 published for comment
August 2010: Public Hearing
November 2010: Public Version 2.0 Published
May 2011: Public Hearing
November 2011: Final Action Hearing
Spring 2012: IgCC Publication
Priority #1:
Review this code not from the perspective of what Seattle needs, but to help ensure the following:

- Sound, enforceable language
- Conflicts with other I-Codes or referenced standards are reduced
- Provide input on appropriate high performance levels
Your Participation

What **YOU** bring to the public comment process:

- Expertise
- Perspective of scale and infrastructure
- Knowledge of regional needs
- Expansion of Smart Growth concepts
Chapter Content

- Ch 3: Jurisdictional Requirements
- Ch 4: Site Development and Land Use
- Ch 5: Material Resource Conservation and Efficiency
- Ch 6: Energy Conservation, Efficiency and Atmospheric Quality
- Ch 7: Water Resource Conservation and Efficiency
- Ch 8: Indoor Environmental Quality and Comfort
- Ch 9: Commissioning, Operation and Maintenance
- Ch 10: Existing Buildings
- Ch 11: Existing Building Site Development
- Appendix: Project Electives
Green Layers

- Project Electives
- Jurisdictional Requirements
- IgCC

Increased Performance

High Performance Base Code

OOBA Performance!
## Jurisdictional Requirements

**Table 302.1: Requirements Determined by the Jurisdiction**

<table>
<thead>
<tr>
<th>Section</th>
<th>Section Title or Description and Directives</th>
<th>Jurisdictional Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Yes</td>
</tr>
<tr>
<td>CH 3. JURISDICTIONAL REQUIREMENTS AND PROJECT ELECTIVES</td>
<td>Optional compliance path – ASHRAE 189.1</td>
<td>Yes</td>
</tr>
<tr>
<td>302.1 (2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CH 4. SITE DEVELOPMENT AND LAND USE</td>
<td>Flood hazard area preservation, general</td>
<td>Yes</td>
</tr>
<tr>
<td>402.2.1.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>402.2.1.2</td>
<td>Flood hazard area preservation, specific</td>
<td>Yes</td>
</tr>
<tr>
<td>402.2.2</td>
<td>Surface water protection</td>
<td>Yes</td>
</tr>
<tr>
<td>402.2.3</td>
<td>Conservation area</td>
<td>Yes</td>
</tr>
<tr>
<td>402.2.5</td>
<td>Agricultural land</td>
<td>Yes</td>
</tr>
<tr>
<td>402.2.6</td>
<td>Greenfields</td>
<td>Yes</td>
</tr>
<tr>
<td>403.4.1</td>
<td>High occupancy vehicle parking</td>
<td>Yes</td>
</tr>
<tr>
<td>403.4.2</td>
<td>Low emission, hybrid and electric vehicle parking</td>
<td>Yes</td>
</tr>
<tr>
<td>405.1</td>
<td>Light pollution control</td>
<td>Yes</td>
</tr>
<tr>
<td>CH 5. MATERIAL RESOURCE CONSERVATION AND EFFICIENCY</td>
<td>Minimum percentage of waste material diverted from landfills.</td>
<td>Yes</td>
</tr>
<tr>
<td>502.1</td>
<td></td>
<td>50%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>65%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>75%</td>
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</table>
### Appendix: Project Electives Checklist

#### CH 3. JURISDICTIONAL REQUIREMENTS AND PROJECT ELECTIVES

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Check the corresponding box to indicate each project elective selected.</th>
<th>Not available as Project Elective</th>
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<tbody>
<tr>
<td>304.1</td>
<td>Whole Building Life Cycle Assessment (LCA)</td>
<td>☐ (5 Electives)</td>
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</table>

#### CH 4. SITE DEVELOPMENT AND LAND USE

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
<th>Check the corresponding box to indicate each project elective selected.</th>
<th>Not available as Project Elective</th>
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</thead>
<tbody>
<tr>
<td>407.2.1</td>
<td>Flood hazard avoidance</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>407.2.2</td>
<td>Agricultural land</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>407.2.3</td>
<td>Wildlife corridor</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>407.2.4</td>
<td>Infill site</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>407.2.5</td>
<td>Brownfield site</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>407.2.6</td>
<td>Greenfield development</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>407.2.8</td>
<td>Greenfield proximity to development</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>407.2.9</td>
<td>Greenfield proximity to diverse uses</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>407.2.11</td>
<td>Site restoration</td>
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<td>☐</td>
</tr>
<tr>
<td>407.3.1</td>
<td>Changing and shower facilities</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>407.3.2</td>
<td>Long term bicycle parking and storage</td>
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<td>☐</td>
</tr>
<tr>
<td>407.3.3</td>
<td>Preferred parking</td>
<td>☐</td>
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<tr>
<td>407.4.1</td>
<td>Site hardscape 1</td>
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</tr>
<tr>
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<td>Site hardscape 2</td>
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<td>☐</td>
</tr>
<tr>
<td>407.4.3</td>
<td>Site hardscape 3</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>407.4.4</td>
<td>Roof covering</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>407.5</td>
<td>Light pollution</td>
<td>☐</td>
<td>☐</td>
</tr>
</tbody>
</table>
• **Chapter 4 Base Provisions:**
  - Heat Island Mitigation – Roof Coverings: A minimum of 75% of roof surfaces shall comply with one or a combination of the following:
    - Roof surface with a minimum Solar Reflectance Index of 0.30
    - Green roof

• Heat Island Mitigation – Site Hardscape: A minimum of 50% of the site hardscape shall comply with one or a combination of the following:
  - Site hardscape material with a minimum SRI Value of 0.30
  - Shading structures
  - Shade by trees
  - Pervious and permeable paving
IgCC Provisions

- **Chapter 4 Base provision:**
  - Stormwater Management: Provide a stormwater management system addressing the increase in runoff by one of the following:
    - System to retain the volume of a substantial rainfall event and all smaller storms, and maintain the predevelopment natural runoff temperature
    - Hydrologic analysis: Ensure the runoff rate, volume, duration, and temperature do not exceed predevelopment rates
IgCC Provisions

- **Chapter 4 Base Provisions:**
  - Wetland Protection: Buildings and site improvements may not be located in a wetland or buffer
  - Flood hazard areas: Structure development must comply with the IBC; Lowest floors are elevated or impermeable to water not less than 1 foot above a determined elevation

- **Chapter 4 Jurisdictional Requirements:**
  - Flood hazard area preservation, general: Development prohibited within all flood hazard areas
  - Flood hazard area preservation, specific: Development prohibited within identified flood hazard areas
IgCC Provisions

**Chapter 4 Jurisdictional Requirements:**
- **Surface water protection:** Buildings and site improvements may not be located over or within a buffer, around or adjacent to bodies of water that could support fish, recreation or industrial use.
- **Conservation area:** Site disturbance or development of land is not permitted in or within 50 ft of a designated conservation area.
- **Agricultural land:** Buildings and associated site improvements are not allowed to be located on land zoned for agricultural purposes.
IgCC Provisions

- **Chapter 4 Jurisdictional Requirement:**
  - Greenfield Preservation:
    - Site disturbance or development is not permitted
  - Exception:
    - Density: 1/4 mile of developed land with an average density of 8+ units/acre
    - Uses: Within ¼ mile of 5+ diverse uses and ½ mile of 7+ diverse uses
    - Transit: Within ¼ mile of bus or streetcar stops or ½ mile of rapid transit stops, light or heavy passenger rail stations, ferry terminals, or tram terminals
    - Connectivity: Adjacent to areas of existing development that have a minimum of 90 intersections per square mile
  - Permitted development is restricted
IgCC Provisions

- **Chapter 4 Base Provision:**
  - Bicycle Parking and Storage:
    - Provide long and short term bicycle parking spaces

- **Chapter 4 Jurisdictional Requirement:**
  - Low Emission, Hybrid, and Electric Vehicle Parking:
    - 5% of parking spaces designated as preferred parking:
      - Buildings >10,000 sf
      - Occupant load > 100
IgCC Provisions

- **Chapter 4 Project Electives:**
  - Mixed Use Development: New development must contain the following elements:
    - 2+ stories
    - 8+ residential dwelling units above the 1st story
    - Nonresidential first floor occupancies

- **Infill Site:**
  - Develop a building site that is considered an infill site with a new building and associated site improvements
IgCC Provisions

- **Chapter 5 Project Electives:**
  - **Existing Building Reuse:**
    - Preserve 75% of the existing core and shell of the portion of structure proposed for redevelopment
  - **Historic Building Reuse:**
    - Preserve 75% of the existing core and shell of a structure designated as a landmark
Challenges Specific to Seattle Adoption

- Not all content is applicable
- Some Seattle Codes or building practices currently exceed IgCC requirements
- I-Code relationship
- Potential conflicts with existing local and state requirements
- Some portions resource intensive
“We must be the change we wish to see in the world”
- Mahatma Gandhi