### Residential Code Green Building Amendments (Prescriptive)

These amendments apply to single-family detached housing, duplexes, townhomes and low-rise (one- to three-story) multifamily housing.

**3/10/2011**

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<th>#</th>
<th>GB Practice Description</th>
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<th>Description *</th>
<th>Intent</th>
<th>Applicability**</th>
<th>Type***</th>
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</table>
| 1 | Construction waste recycling | RESOURCE EFFICIENCY | • Submit recycling plan (who, what, where, how) before project begins  
• Implement recycling (non-landfill) for wood, metal, concrete and cardboard | Divert construction waste from landfill | New: Yes  
Addition: No  
Alteration: No | New |
| 2 | Certified wood | | Sustainable forestry certification required for all tropical hardwoods | Support sustainable forestry practices | New: Yes  
Addition: Yes  
Alteration: Yes | New |
| 3 | Windows, skylights, doors: installation | | Increased detailing regarding integration of fenestration with exterior drainage plane | Reduce potential for exterior moisture damage | New: Yes  
Addition: Yes  
Alteration: No | Refine |
| 4 | Building envelope: thermal specifications for electric-heat buildings | ENERGY EFFICIENCY | More rigorous insulation and air sealing specifications for electric-heat buildings (beyond 2009 International Residential Code requirements) | Save energy and reduce peak electrical demand | New: Yes  
Addition: Yes  
Alteration: Yes | Reinstate  
+ Refine |
| 5 | Basement windows: thermal specifications | | Basement windows with comparable performance to windows on main living levels | Set stage for energy-efficient, comfortable living space when basement is finished | New: Yes  
Addition: Yes  
Alteration: No | Refine |
| 6 | Air sealing: tight construction | | • Whole-building air leakage: 4.0 ACH50 maximum  
• Increased focus on effective sealing between living space and attached garage  
• Performance testing required | Capture energy, comfort, durability and health benefits | New: Yes  
Addition: Part  
Alteration: Part | Reinstate  
+ Refine |
| 7 | Insulation: installation | | Insulation installed to the Residential Energy Services Network (RESNET) Grade I standard  
Exceptions for which RESNET Grade II is acceptable:  
• Rim joists  
• Exterior walls with continuous rigid insulating sheathing, R-5 minimum. | Install insulation so it delivers rated energy performance | New: Yes  
Addition: Yes  
Alteration: Yes | Refine |
| 8 | Heating + cooling systems: design | | Added requirements for permit application:  
• Heating + cooling design load calculations include room-by-room loads  
• Air-Conditioning, Heating, and Refrigeration Institute (AHRI) matched evaporators, condensing units and furnaces (AHRI certificate required)  
• Document key design parameters | Design heating and cooling systems that satisfy comfort needs and perform in accordance with manufacturer specifications | New: Yes  
Addition: Yes  
Alteration: Part | Refine |
| 9 | Heating, ventilation, air conditioning (HVAC) systems: commissioning | | Performance testing of heating, cooling and ventilation systems, aligned with Air Conditioning Contractors of America (ACCA) 5 "Quality Installation" procedures. Systems operating out of tolerance compared with design specifications will be adjusted and re-tested until they pass. | Verify that HVAC systems perform as designed | New: Yes  
Addition: Yes  
Alteration: Part | Reinstate  
+ New |
| 10 | Water-efficient fixtures | WATER EFFICIENCY | Toilets, showerheads and faucets must meet Environmental Protection Agency (EPA) WaterSense® standards for maximum flow rate or consumption. | Save water and energy | New: Yes  
Addition: Yes  
Alteration: Yes | New |
| 11 | Safer combustion appliances: new construction | INDOOR ENVIRONMENTAL QUALITY (IEQ) | Natural draft combustion appliances (furnaces, boilers, water heaters, fireplaces) must be placed outside the building’s pressure boundary and pass combustion safety test.  
(This requirement may also be met with safer combustion appliances: power-vented, sealed-combustion or direct-vent.) | Eliminate potential health and safety hazard of combustion products spilling into building | New: Yes  
Addition: Yes  
Alteration: No | New |
| **Safer combustion appliances: existing buildings** | When combustion appliances are replaced, all natural draft combustion appliances must pass combustion safety test under "natural conditions." | Reduce potential health and safety hazard of combustion products spilling into building | New: No  
Addition: No  
Alteration: Yes | New |
|---|---|---|---|---|
| **Low-Volatile Organic Compound (VOC) materials** | Interior materials meet maximum VOC emissions standards:  
- Sealants + adhesives  
- Resilient flooring  
- Carpeting  
- Paints, stains, varnishes and other site-applied finishes  
- Structural wood panels, hardwood veneer plywood, particle board, and fiber board  
- Insulation | Improve indoor air quality for construction workers and occupants | New: Yes  
Addition: Yes  
Alteration: Part | New |
| **Whole-building ventilation** | Provide whole-building, controlled, mechanical ventilation system, designed to meet ASHRAE 62.2 requirements.  
Air handlers used to move ventilation air must be equipped with efficient blower motors. | Improve indoor air quality | New: Yes  
Addition: No  
Alteration: No | New |

**OUTDOOR ENVIRONMENTAL QUALITY (OEQ)**

| **Exterior lighting: fixture design** | Install "dark-sky friendly" exterior lighting fixtures | Increase security  
Reduce light pollution and light trespass | New: Yes  
Addition: No  
Alteration: No | New |

**OPERATIONS + MAINTENANCE + EDUCATION**

| **Building owner education** | Provide operations and maintenance manual for building owner  
Educate owners about their home and other "green" choices they can make | New: Yes  
Addition: Part  
Alteration: Part | New |

* Visit the City of Fort Collins Green Building Program web site ([www.fcgov.com/gbp](http://www.fcgov.com/gbp)) for more information:  
• [Fort Collins Building Code Green Amendments](http://www.fcgov.com/gbp) - context for this evolving proposal  
• [Expanded descriptions of each green building practice](http://www.fcgov.com/gbp)  
• [Benefits and Costs of Building Code Green Amendments](http://www.fcgov.com/gbp)  

** Indication of how amendment applies to new buildings, additions and alterations to existing buildings. In general, amendments apply in same manner as any code provision, when a building permit is required. See expanded description of each green building practice ([www.fcgov.com/gbp](http://www.fcgov.com/gbp)) for more detail about applicability.

*** Classifies how the amendment relates to the existing building code:  
Refine: already addressed in Fort Collins code; the amendment provides more detail or takes it further  
Reinstate: similar provision existed in the Fort Collins code prior to fall 2010 update.