



2010 CA Green Building Standards Code  
"CALGreen"

Non-Residential Portion

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## 2010 CALGreen

- Adopted by BSC on 1/12/2010
- Becomes effective on 1/1/2011
- Mandatory throughout the State
- Applies to all new non-residential buildings
- Applies to all new residential buildings up to 3 stories

## 2010 CALGreen

- **Covers 5 categories:**
  - Planning & design
  - Energy efficiency
  - Water efficiency and conservation
  - Material conservation and resource efficiency
  - Environmental quality

## 2010 CALGreen

- Mandatory measures
- Voluntary measures
- Tier 1 and Tier 2
- Why develop a Green code?

# Important Information When Adopting CALGreen

- Do we have to adopt CALGreen? Existing program
- CALGreen vs. LEED
  - Is CALGreen equal to LEED?

# CALGreen Non-Res vs. LEED 2009

## LEED-NC V3.0 Checklist

Sustainable Sites		26 Points	Mandatory	Voluntary	Tier 1	Tier II
Prereq 1	Construction Activity Pollution Prevention	Required	5.106.1			
Credit 1	Site Selection	1				
Credit 2	Development Density & Community Connectivity	5		A5.103.1		
Credit 3	Brownfield Redevelopment	1		A5.103.2		
Credit 4.1	Alternative Transportation, Public Transportation Access	6				
Credit 4.2	Alternative Transportation, Bicycle Storage & Changing Rooms	1	5.106.4	A5.106.4.3		
Credit 4.3	Alternative Transportation, Low-Emitting and Fuel-Efficient Vehicles	3	5.106.5.2		A5.106.5.1	A5.106.5.1
Credit 4.4	Alternative Transportation, Parking Capacity	2	5.106.5.2	A5.106.6	A5.106.5.1	A5.106.5.1
Credit 5.1	Site Development, Protect or Restore Habitat			A5.304.6		
Credit 5.2	Site Development, Maximize Open Space			A5.104.1		
Credit 6.1	Stormwater Design, Quantity Control			A5.106.2.1		
Credit 6.2	Stormwater Design, Quality Control	1		A5.106.2.2		
Credit 7.1	Heat Island Effect, Non-Roof	1		A5.106.11.1		
Credit 7.2	Heat Island Effect, Roof	1			A5.106.11.2	A5.106.11.2
Credit 8	Light Pollution Reduction	1	5.106.8			

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Approximate comparison

## Other Considerations When Comparing CALGreen to LEED

- CALGreen measures not in LEED
- Easy LEED points
- Energy Code
- CALGreen requirements are plan checked and field inspected by Building and Safety

## Other Considerations When Comparing CALGreen to LEED

- CALGreen applies to all new non-residential buildings and all residential buildings up to 3 stories
- Cost
- Flexibility



# Non- Res. Mandatory Measures

## Planning and Design

- **5.106.1 Storm water pollution prevention plan**
- **5.106.4 Bicycle parking and changing rooms.**
  - **5.106.4.1 Short-term bicycle parking. 5% within 200' of entrance**
  - **5.106.4.2 Long-term bicycle parking. 5% of parking capacity**

## Non- Res. Mandatory Measures Planning and Design

- **5.106.5.2 Designated parking.** 8% for any combination of low-emitting, fuel-efficient, and carpool/van pool vehicles

## Non- Res. Mandatory Measures Energy Efficiency

- **5.201.1 Scope.** The California Energy Commission will continue to adopt mandatory building standards

# Non- Res. Mandatory Measures Water Efficiency and Conservation

- **5.303.1 Submeters**
  - 5.303.1.1 Buildings over 50,000 sq ft.
  - 5.303.1.2 Excess consumption. >1000 gal/day
- **5.303.2: 20% Water savings**
- **5.303.4 20% Wastewater reduction**

## Non- Res. Mandatory Measures Water Efficiency and Conservation

- **5.304.1 Water budget.** Conforms to local or DWR landscape ordinance
- **5.304.2 Outdoor potable water use**  
Submeters for landscaped between 1000 and 5000 square feet
- **5.304.3 Irrigation design**  
Weather- or soil moisture-based Irrigation controllers for landscape between 1000 and 2500 square feet

# Non-Res. Mandatory Measures

## Material Conservation and Resource Efficiency

### 5.407.2 Moisture control

- **5.407.2.1 Sprinklers.** Prevent spray on structure
- **5.407.2.2 Entries and openings.** Prevent water intrusion into buildings
- **5.408.3 Construction waste reduction of at least 50%.** Recycle or salvage for reuse

## **Non- Res. Mandatory Measures**

### **Material Conservation and Resource Efficiency**

- **5.408.4 Excavated soil and land clearing debris. Reuse or recycled**
- **5.410.1 Recycling by occupants.**
- **5.410.2 Commissioning. Buildings  $\geq 10,000$  sq. ft.**

## Non- Res. Mandatory Measures

### Material Conservation and Resource Efficiency

- **5.503.1 Fireplaces.** Install only direct-vent sealed-combustion type
- **5.504.3 Covering of duct** openings and protection of mechanical equipment during construction



## Non- Res. Mandatory Measures Environmental Quality

- **5.504.4 Finish material pollutant control**  
Comply with VOC limits:
  - **Adhesives, sealants, caulks, Paints, coatings**
  - **Carpet systems.** Green Label Plus program or other listed standards
- **5.504.4.5 Composite wood products.** Meet formaldehyde limits referenced

## Non- Res. Mandatory Measures Environmental Quality

- **5.504.4.6 Resilient flooring systems**  
Comply with VOC-emission limits referenced for 50% of flooring
- **504.5.3 Filters. MERV 8**
- **5.504.7 Environmental tobacco smoke control.** No smoking within 25' of entries, air intakes and operable windows

## Non- Res. Mandatory Measures Environmental Quality

- **5.507.4 Acoustical control**

Min. Sound Transmission Coefficient (STC) values for exterior wall and roof-ceiling assemblies (50), exterior windows (30), interior wall and floor-ceiling assemblies (40)

- **5.508.1 Ozone depletion and global warming reductions**

- CFCs: CFC free equipment
- Halons: Halon free fire suppression equipment. ∞

# Non-Res. Voluntary Measures Planning and Design

- **Site Selection**
  - A5.103.1 Community connectivity
  - A5.103.2 Brownfield or greyfield site redevelopment or infill area development
- **Site Preservation: Open space**
- **Deconstruction and Reuse of Existing Structures. Reuse/salvage components**

# Non- Res. Voluntary Measures Planning and Design

- **Site Development**

- **A5.106.2 Storm water design.** Storm water quantity and quality of runoff
- **A5.106.3 Low impact development (LID)**
- **A5.106.4.3. Changing rooms w/showers**
- **A5.106.5.1 Designated parking.** 10 % or 12% for LEFE and carpool/van pool vehicles

# Non-Res. Voluntary Measures Planning and Design

- **Site Development continued**
  - **A5.106.5.3 Electric vehicle supply wiring**
  - **A5.106.6.1 Reduce parking capacity**
  - **A5.106.7 Exterior walls. Shading**
- **A5.106.11 Heat island effect**
  - **A5.106.11.1 Hardscape alternatives.**  
Underground parking, ground shade, open-grid pavement system
  - **A5.106.11.2 Cool Roof**

## Non-Res. Voluntary Measures Energy Efficiency

- **A5.203.1 Energy performance.** Exceed Energy Code by 15% or 30%
- **A5.204.1 ENERGY STAR equipment and appliances**
- **A5.204.2 Energy monitoring**
- **5.204.3 Demand response.** HVAC & lighting

## Non- Res. Voluntary Measures Energy Efficiency

- **A5.211.1 On-site renewable energy. 1% or 1kw**
- **A5.211.4 Pre-wiring for future solar and storage**
- **A5.212.1 Elevators and escalators**  
Reduce the energy demand of elevators and reduce the speed of escalators



## **Non- Res. Voluntary Measures Water Efficiency and Conservation**

- **A5.303.1.1.1 Submeter areas >500 sq. ft.**
- **A5.303.2. 30%, 35%, 40% Indoor water savings**
- **A5.303.5 Dual plumbing**
- **A5.304.4 Potable water for landscape irrigation. 40% or 45% reduction**
- **A5.304.5 Potable water elimination**

# Non- Res. Voluntary Measures

## Material Conservation And Resource Efficiency

- **Efficient Framing Systems**
- **Material Sources**
  - **A5.405.1 Regional materials.**
  - **A5.405.2.1 Certified wood products**
  - **A5.405.2.2 Rapidly renewable materials 10 yr cycle, 2.5% based on value**
  - **A5.405.3 Reused materials/recycled content**

## **Non- Res. Voluntary Measures**

### **Material Conservation And Resource Efficiency**

**A5.408.3.1 Enhanced Construction Waste Reduction. Divert 65% or 80% to recycle or salvage**

# Non- Res. Voluntary Measures

## Environmental Quality

- **A5.504.1 Indoor air quality (IAQ) during construction.** 3 air changes, MERV 8
- **A5.504.2 IAQ post-construction.** Flush out
- **A5.504.4.7 Resilient flooring systems**  
Comply with VOC-emission limits for 80% or 90% of floor area

# Non- Res. Voluntary Measures

## Environmental Quality

- **A5.504.4.8 Thermal insulation.** Comply with VOC-emission limits, no added formaldehyde
- **A5.504.4.9 Acoustical ceiling and wall panels.** Comply with VOC-emission limits
- **A5.504.5.2 Isolation of pollutant sources**  
Self closing doors and exhaust
- **A5.504.5.3.1 MERV 11**

# Non- Res. Voluntary Measures

## Environmental Quality

- **A5.507.1 Lighting and thermal comfort controls**
- **A5.507.3 Views.** 90% of regularly occupied areas
- **A5.508.1.3 HCFCs.** HCFC free equipment
- **A5.508.1.4 HFCs.** GWP  $\leq$  150

# Non- Res. Tier 1

## Planning & Design

- **A5.106.5.1 Designated parking.** 10% of total spaces for LEFE and carpool/van pool vehicles
- **A5.106.11.2 Cool Roof**
- **1 elective** measure from Planning & Design

## Energy Efficiency

- **A5.203.1.1 Exceed 2008 California Energy Code by 15%**

# Non- Res. Tier 1

## Water Efficiency and Conservation

- **A.303.2.1 30% Savings** in indoor water use
- **A5.304.4.2 40% reduction** in water used for irrigation
- **1 elective** measure from this division

## Material Conservation and Resource Efficiency

- **A5.405.4 Recycled content.** Min 10%
- **A5.408.3.1 Enhanced Construction Waste Reduction.** 65% diversion to recycle or salvage
- **1 elective** measure from this division



# Non- Res. Tier 1

## Environmental Quality

- **A5.504.4.7 Resilient flooring systems.** Comply with VOC-emission limits for 80% of resilient flooring
- **A5.504.4.8 Thermal insulation.** Comply with VOC-emission limits
- **1 elective** measure from this division

## Non- Res. Tier 2

### Planning & Design

- **A5.106.5.1 Designated parking.** 12% of total spaces for LEFE and carpool/van pool vehicles
- **A5.106.11.2 Cool Roof**
- **3 elective** measure from Planning & Design

### Energy Efficiency

- **A5.203.1.1 Exceed 2008 California Energy Code by 30%**

## Non- Res. Tier 2

### Water Efficiency and Conservation

- **A.303.2.1 35% Savings** in indoor water use
- **A5.304.4.2 45% reduction** in water use for irrigation
- **3 elective** measure from this division

### Material Conservation and Resource Efficiency

- **A5.405.4 Recycled content.** Min 15%
- **A5.408.3.1 Enhanced Construction Waste Reduction.** Min 80%
- **3 elective** measure from this division

## Non- Res. Tier 2

### Environmental Quality

- **A5.504.4.7 Resilient flooring systems.** Comply with VOC-emission limits for 90% of resilient flooring
- **A5.504.4.8 Thermal insulation.** Comply with VOC-emission limits and no added formaldehyde
- **3 elective** measure from this division

**3 additional electives from any division**

## 2010 CALGreen

Questions?