



DIVISION OF THE
STATE ARCHITECT
DEPARTMENT OF GENERAL SERVICES

Green Building Code

CASH Fall Conference
October 14, 2009

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Supervising Architect

Green Building Standards Code

- Development of the next version of the Green Building Standards Code is underway
 - Will be published in January 2010
 - Effective January 2011
- The Building Standards Commission is working in conjunction with the Division of the State Architect
- For the first time, the code will define the term “grid neutral”



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Mandatory & Voluntary Measures

- The code will include both mandatory and voluntary measures
 - Both types of measures will exist in areas of sustainable sites, energy efficiency, materials & resources, and indoor environmental quality
- The code will include “voluntary reach standards” at three levels to encourage schools and community colleges to exceed the green code for energy efficiency and other green measures



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Mandatory Measures

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Mandatory Measures

- Many of the mandatory measures are already required by code
- Mandatory measures apply to new construction projects



Planning & Design

- Bicycle parking & changing rooms
- Designated parking for fuel efficient vehicles
- Light pollution reduction
- Grading and paving



Indoor Water Use

- 20% savings
- Wastewater reduction
- Plumbing fixtures & fittings
 - Water closets (toilets)
 - Urinals
 - Public lavatory faucets
 - Public metering self-closing faucets



Weather Resistance

- Weather protection
- Moisture control
 - Sprinklers
 - Entries & openings



Construction Waste Reduction

- Construction waste diversion
- Construction waste management plan
 - Documentation
- Isolated jobsites
- Recycle and/or salvage 50% of non-hazardous construction and demolition debris



Building Maintenance/Operations

- Provide readily accessible areas that serve the entire building and are identified for the depositing, storage and collection of non-hazardous materials for recycling



Fireplaces

- Install only a direct-vent sealed-combustion gas or sealed wood-burning fireplace, or a sealed woodstove, and refer to the residential requirements in the California Energy Code
 - Woodstoves shall comply with US EPA Phase II emission limits



Pollutant Control

- IAQ post-construction
- Covering of duct openings and protection of mechanical equipment during construction
- Adhesives, sealants, caulks
- Paints & coatings
- Carpet systems
- Composite wood products
- Early compliance with formaldehyde limits
- Resilient flooring system
- Filters
- Environmental tobacco smoke (ETS) control



Indoor Moisture

- Buildings shall meet or exceed the provisions of California Building Code, CCR, Title 24, Part 2, Sections 1203 and Chapter 14



Air Quality & Exhaust

- For mechanically or naturally ventilated spaces in buildings, meet the minimum requirements of Section 121 of the California Energy Code, CCR, Title 24, Part 6 and Chapter 4 of CCR, Title 8



Environmental Comfort

- Acoustical control
 - Wall & floor-ceiling assemblies making up the building envelope shall have an STC of at least 50
 - Exterior windows shall have a minimum STC of 30
- Interior sound
 - Wall & floor-ceiling assemblies separating classrooms and multi-use spaces and public places shall have an STC of at least 40



Outdoor Air Quality

- Ozone depletion and global warming reductions
 - Install HVAC and refrigeration equipment that does not contain CFCs



Voluntary Measures

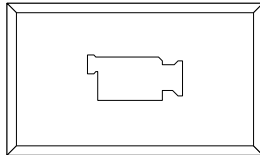
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Summary of Voluntary Measures

- Sustainable Sites:
 - Reduced Parking Capacity
 - Building Orientation & Shading
- Energy Efficiency:
 - Energy Performance
 - Energy Star Computers, Equipment, Appliances
 - Energy Monitoring
 - Commissioning
 - Reduced Heat Island Effect
 - Grid Neutral
- Water Efficiency:
 - All measures except those requirements dealing with grey water
- Materials & Resources
 - Regional Materials
 - Recycled Content Materials
 - Enhanced Durability & Reduced Maintenance
 - Moisture Control
 - Life Cycle Cost Analysis
- Indoor Environmental Quality
 - IAQ During Construction
 - Entry Systems Minimizing Indoor Pollutants
 - Lighting & Thermal Controls
 - Daylighting & Views



Grid Neutral Video



Grid Neutral Codified

- A5.211.2 defines the term “grid neutral”
- Production to consumption ratio
 - Uses Title 24 energy calculations
 - Proposed annual renewable electrical energy production (kwh) divided by annual electrical energy budget (kwh)
 - Estimated plug loads shall be included
- Existing buildings shall use actual data
- Annual renewable electrical energy can be renewable energy produced off-site



Reach Standards

- The reach standards for schools & community colleges are:
 - *CALGREEN* Merit
 - *CALGREEN* Excellence
 - *CALGREEN* Grid Neutral
- As a prerequisite for all three reach standards, the project must meet **all** of the mandatory measures of Chapter 5



CALGREEN Merit

- Reduced parking capacity
- ENERGY STAR equipment & appliances
- Use of appliances/water-use fixtures described in A5.303.3
- Use of recycled content as described in A5.405.4
- Provide lighting & thermal comfort system controls for all shared multi-occupant spaces
- **35% grid neutral**



CALGREEN Excellence

- Measures that are same as Merit include:
 - Reduced parking capacity
 - ENERGY STAR equipment & appliances
 - Use of appliances/water-use fixtures
 - Use of recycled content
 - Lighting & thermal controls for all shared multi-occupant spaces
- Additional standards include:
 - Building orientation
 - Roof area alternatives
 - Advanced wood framing techniques
 - Lighting controls for single-occupant spaces
- **75% grid neutral**



CALGREEN Grid Neutral

- Must meet Excellence measures for:
 - Reduced parking capacity
 - Building orientation
 - ENERGY STAR equipment & appliances
 - Roof area alternatives
 - Use of appliances/water-use fixtures
 - Advanced wood framing techniques
 - Use of recycled content
 - Lighting controls for single & multi-occupant and thermal controls multi-occupant spaces
- Additional standards include:
 - Commissioning
 - Daylighting
- **100% grid neutral**



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Sharing Your Thoughts

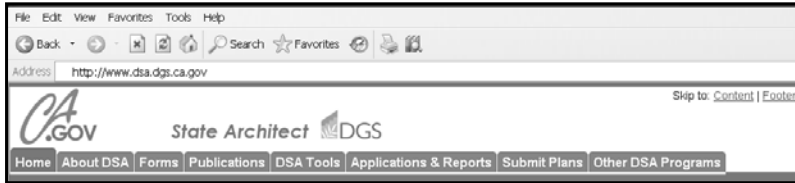
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Building Standards Commission

- The 45-day public comment period starts in October
- To share your thoughts, visit the Building Standards Commission's website at:
www.bsc.ca.gov



Contact DSA



- DSA is online at **www.dsa.dgs.ca.gov**
- Call our offices:
 - Oakland Regional Office: (510) 622-3101
 - Sacramento Regional Office: (916) 445-8730
 - Los Angeles Regional Office: (213) 897-3995
 - San Diego Regional Office: (858) 674-5400
 - Headquarters: (916) 445-8100



THANK YOU!

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