



2008 CALIFORNIA GREEN BUILDING STANDARDS CODE

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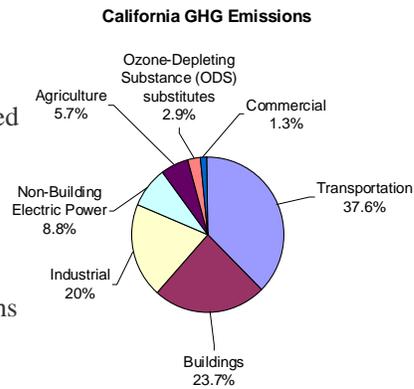
■ **Presentation Overview**

- Why a CALGREEN Code
- The Role of the CBSC
- How the CALGREEN Code was Developed
- Scope and Application of the Code
 - Voluntary
 - Mandatory
- Future of the CALGREEN Code



CA Green Building Initiative & Global Warming Solutions Act of 2006 (EO S-20-04 & AB32)

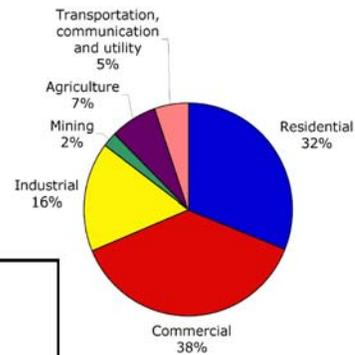
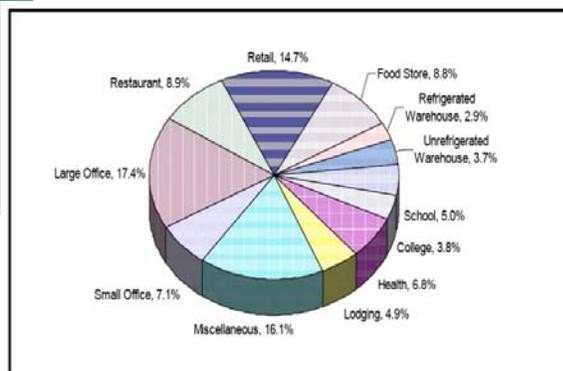
- Buildings are 2nd largest contributor (23.7%) to GHG emissions
- EO S-20-04: Reduce grid-based electricity by 20% in state-owned buildings by 2015; reduce associated greenhouse gas emissions
- AB 32: Reduce GHG emissions to 1990 levels by 2020



Source: CARB 2004 Inventory



Energy Use in California





California Building Standards Commission

■ CBSC Responsibilities

- Review building standards proposed by state agencies
- Develop building standards for non-residential occupancies where no other state agency has the authority



California Building Standards Commission

- Adopt and approve building standards for publication
- Codify approved building standards
- File approved building standards with the Secretary of State





California Building Standards Commission

- Contract to publish the California Building Standards Code
- Act as the state depository for local government modifications



California Building Standards Commission

- **Chairman**
 - Secretary of the State and Consumer Services Agency
- **Commissioners (10)**
 - Appointees specified by law
 - One architect
 - One mechanical, electrical or fire protection engineer
 - One structural engineer
 - One licensed contractor
 - Three public members, at least one must be a person with disabilities
 - One member from organized labor in the building trades
 - One local building official
 - One local fire official
 - At least one member knowledgeable in barrier-free architecture
 - At least one member knowledgeable in energy efficiency standards



California Building Standards Commission

- **Code Advisory Committees (CAC)**
 - Advise Commission and CBSC staff on proposed building standards
 - Six Committees
 - **Green Building Committee**



2008 California Building Standards Code – Title 24

- **California Building Standards Code**
 - Part 1 - California Administrative Code
 - Part 2 - California Building Code
 - Part 3 - California Electrical Code
 - Part 4 - California Mechanical Code
 - Part 5 - California Plumbing Code
 - Part 6 - California Energy Code
 - *Part 7 - Vacant*
 - Part 8 - California Historical Building Code
 - Part 9 - California Fire Code
 - Part 10 - California Existing Building Code
 - **Part 11 - California Green Building Standards Code**
 - Part 12 - California Referenced Standards Code





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■ New Part of California Building Standards Code

- Part 11 - Green Building Standards Code



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■ Adopting State Agencies

- California Building Standards Commission (CBSC)
- The Department of Housing and Community Development (HCD)
- Division of the State Architect (DSA)
- Office of Statewide Health Planning and Development (OSHPD)





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■ **Contributing State Agencies**

- California Integrated Waste Management Board
- Department of General Services
- Department of Public Health
- Department of Water Resources
- Energy Resources Conservation and Development Commission



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■ **Additional resources utilized in developing Green Building Standards Code**

- Collaborative for High Performance Schools (CHPS)
- Leadership in Energy and Environmental Design (LEED)
- Green Globes
- UC Berkeley Green Building Baseline
- Draft ASHRAE Standard 189P





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- Sustainable Building Task Force
 - Established by Executive Order D-16-00
- Green Building Action Team
 - Established by Executive Order S-20-04
- CBSC and HCD Green Building Focus Group
 - Building officials
 - Representatives from the construction industry
 - Representatives from international building code writing bodies
 - Representatives from the environmental community
 - State agency representatives



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- **Green Building Standards Code**
 - Initial Voluntary Standards
 - Effective August 1, 2009
 - Tier 1
 - Tier 2



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■ Local Government Ordinances

- Local jurisdictions may adopt more stringent versions of the California Building Standards Code
- Justification for making local modifications
 - Climate
 - Topography
 - Geology



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■ Topics addressed in the Voluntary Standards

- Planning and design
- Energy conservation
- Water efficiency
- Materials usage efficiency
- Indoor environmental quality



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■ Chapter 4 Planning and Design

- Storm Water runoff

■ Chapter 5 Energy Efficiency

- Tier 1 – 15% energy reduction
- Tier 2 – 30% energy reduction
- Energy Star Appliances
- Building Commissioning



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■ Chapter 6 Water Efficiency and Conservation

- 20% indoor
- Landscape irrigation
- Energy star
- DWR Water Budget



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■ Chapter 7 Material Conservation and Resource Efficiency

- Material Sources
- Recycled Content
- Recyclable Materials
- Construction Waste



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■ Chapter 8 Environmental Quality

- Ventilate during construction
- Building flush out prior to occupancy
- Tables relating to material VOC limits
- Flooring
- IAQ
- Environmental Comfort



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- **Transition from Voluntary to Mandatory Compliance**
 - 2010 Mandatory CALGREEN Codes
 - Effective January 1, 2011



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- **Nonresidential Mandatory Measures**
 - 2010 Chapter 5
 - Tier 1
 - Tier 2
 - Optional Measures in Appendices



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■ **Planning & Design**

- Storm Water Pollution < One Acre
- Bicycle Parking and Changing Rooms
- Designated Parking
- Light Pollution Reduction
- Grading and Paving



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■ **Energy Efficiency**

- California Energy Commission



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■ Water Efficiency and Conservation

■ Indoor Water Use

- Meters
- 20% Savings
- Wastewater Reduction
- Plumbing Fixtures and Fittings



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■ Outdoor Water Use

- Water Budget
- Irrigation Design
 - Irrigation Controllers
 - Sensors
- Rainwater or stormwater collection systems



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■ **Material Conservation and Resource Efficiency**

- Weather Resistance and Moisture Management
 - Weather Protection
 - Moisture Control
 - Sprinklers
 - Entries and Openings



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■ **Construction Waste Reduction, Disposal and Recycling**

- Waste Diversion
- Management Plan
- Waste Reduction of at Least 50%
- Excavated Soil and Land Clearing Debris



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■ Building Maintenance and Operation

- Recycling by Occupants
 - Sample Ordinance
- Commissioning
 - Owner's Project Requirements (OPR)
 - Basis of Design (BOD)
 - Commissioning Plan
 - Functional Performance Testing
 - Post Construction Documentation and Training
 - Commissioning Report



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■ Environmental Quality

- Fireplaces
 - Woodstoves
- Pollutant Control
 - IAQ Post Construction
 - Covering of Duct Openings and Protection of Mechanical Equipment During Construction
 - Finish Material Pollutant Control





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- Carpet Systems
 - Cushion
 - Adhesive
- Composite Wood Products
 - Documentation
- Resilient Flooring Systems
- Environmental Tobacco Smoke (ETS) Control



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- **Indoor Moisture Control**
- **Indoor Air Quality and Exhaust**
 - Outside Air Delivery
 - Carbon Dioxide (CO₂) Monitoring



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■ Environmental Comfort

- Exterior Noise Transmission
- Interior Sound



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■ Long Term Goals

- Future Code Adoptions
 - Code Adoption Cycles
- Outreach & Education



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■ CALGREEN Building Standards Outreach & Education

- Visit the California Building Standards Commission website, www.bsc.ca.gov for information

- CBSC CALGREEN Outreach & Education Contact
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