

**INITIAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
CALIFORNIA BUILDING STANDARDS COMMISSION (CBSC)**

**REGARDING ADOPTION OF AMENDMENTS TO THE 2007 CALIFORNIA BUILDING STANDARDS
CODE, TITLE 24, CALIFORNIA CODE OF REGULATIONS (CCR), PARTS 2, 3, 4, 5 and 6 in TITLE 24,
CCR, PART 11, CALIFORNIA GREEN BUILDING STANDARDS CODE**

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

STATEMENT OF SPECIFIC PURPOSE AND RATIONALE:

This proposed action by CBSC adopts voluntary green building standards for occupancies within its authority to provide a statewide framework of measures available to builders to (1) reduce greenhouse gas (GHG) emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; and (3) respond to the directives in the Governor's recent legislative veto messages.

(1) GHG reduction has been mandated in recent years by the Governor through executive orders and in his signing into law AB 32 in 2006. AB 32 requires a cap on GHG emissions by 2020, mandatory emissions reporting, and an ongoing market-based compliance program.

Nonresidential green building can make a significant reduction in GHG for the following reasons:

- Nonresidential buildings account for nearly one-half of the energy consumed in California¹;
- Over the next 25 years, GHG emissions from nonresidential buildings are predicted to grow faster than from any other sector, at 1.8% per year through 2030¹;
- Construction investment in nonresidential buildings in California totaled over \$21 billion in 2006²;
- Buildings have a long lifespan of 50 to 100 years over which they consume energy and produce GHG¹; and
- Technology, construction techniques, and various green building points-based programs, utility incentives, local ordinances, and state agency programs already exist to make substantial reductions in GHG.

(2) Furthermore, GHG emissions reduction and environmental sensitivity by buildings may prove to save builders money, though initial costs may be higher.

- An October, 2003 report to California's Sustainable Building Task Force stated that a 2% increase in upfront costs for green building features would result in savings of 20% of construction costs in 20 years.³
- Studies have shown that improved air quality and thermal comfort results in occupant satisfaction and improved worker productivity, and that giving occupants some control over lighting and acoustics may improve them further.⁴

(3) Recent proposed green building legislation (AB 35 concerning state-owned buildings, AB 888 concerning commercial B-occupancy buildings, and AB 1035 concerning residential construction) was vetoed by the Governor. In his veto messages, the Governor expressed his support for development of green building standards, but that they should not be statutory, conflict with current safety standards, and rely on private entities to set standards. He directed CBSC to work with state agencies to develop standards, gleaned from nationally recognized programs⁵, ensuring an open public adoption process.

The proposed standards are amendments to Parts 2, 3, 4, 5, and 6 of Title 24 and are being placed into Title 24, Part 11, the California Green Building Standards Code, to provide clarity to users deigning or constructing to the green building standards. It is the intent of CBSC to integrate these standards into their respective parts at a future date.

The proposed changes to the building standards with statewide application will lead to substantial environmental benefits through reduction in the use of energy, water, and raw materials; improved public and building occupant health due to improved indoor air quality; and overall reduced detrimental environmental impacts.

Specific Proposed Regulatory Actions: CBSC proposes to adopt the 2007 California Green Building Standards Code (CGBC). The rationale for each adoption by chapter and section is listed below.

CHAPTER 1. ADMINISTRATION

CBSC is proposing adoption of this new California chapter, **Sections: 101.1, 101.2, 101.3, 101.3.1, 101.4, 101.5, 101.5.1, 101.5.2, 101.5.3, 101.5.4, 101.5.5, 101.5.6, 101.6, 101.6.1, 101.6.2, 101.6.3, 101.7, 101.7.1, 101.8, 101.9, 101.10, 101.11, 102, 102.1, 102.2, 102.3, and 103.1.**

CBSC is proposing the adoption of a newly developed Chapter 1 for the California Green Building Standards Code with sections specific to the needs of California and each state agency. This new chapter will promote uniform enforcement throughout the state and ensure local enforcement agencies are provided accurate statutory information regarding the enforcement of building standards in the State of California.

The proposed new California Chapter 1 is consistent with the standards and format used in other parts of the California Building Standards Codes.

CHAPTERS 2—9, Sections 201.1, 301.1, 401.1, 501.1, 601.1, 701.1, 801.1, and 901.1 outline the purpose and scope of each chapter to provide clarity and specificity to the user.

CHAPTERS 4—8, Sections 402.1, 502.1, 602.1, 702.1, and 802.1 define for the code user terms specific to each chapter to provide clarity and specificity to the user.

CHAPTER 2. DEFINITIONS

Sections 201.2, 201.3, and 201.4 provide the ground rules for the terms defined within this code.

Section 202 defines for the code user terms found throughout the CGBC.

CHAPTER 3. GREEN BUILDING, Section 302.1 clarifies that different types of occupancies shall comply only with features that are appropriate and intended to apply to the specific occupancy.

CHAPTER 4. PLANNING AND DESIGN

Section 403.1 Site selection lists sites inappropriate for development which are to be avoided as environmentally sensitive. Some of these sites may be valued as carbon sinks for GHG emission reduction.

Section 403.2 Development density and community connectivity is intended to channel development to urban areas with existing infrastructure, to protect greenfields, and to preserve habitat and natural resources.

Sections 404.1 Public transportation access, 406.5 Fuel efficient vehicles, 406.4 Bicycle storage and changing rooms, and 406.6 Parking capacity are to reduce single occupant automobile use and its impacts on development and pollution.

Section 404.3 Brownfield or greyfield site redevelopment or infill area development are to relieve pressure on undeveloped land and make use of existing infrastructure.

Section 404.1 Storm water pollution prevention plan, extended to projects of one acre or less, is to ensure that project are protective of water quality during and after construction.

Sections 404.2 Plan to protect and restore habitat and 404.3 Reduce development footprint and optimize open space in order to conserve natural areas, some of which may act as carbon sinks, and promote biodiversity of habitat and protected species.

Sections 405.1 Existing building structure and 405.2 Existing non-structural elements are maintained to conserve resources and reduce waste and transportation impacts.

406.3 Storm water design replicates pre-project hydrology and pollutant loading.

406.7 Heat island effect means to moderate developed areas' impact on microclimate and, and for roofs and walls, reduce heat gain into buildings.

406.8 Light pollution reduction is to reduce energy demand for outdoor lighting and reduce development's impact on nocturnal environments.

CHAPTER 5. ENERGY EFFICIENCY

The provisions of this chapter were developed in discussion with staff from the California Energy Commission and are designed to provide greater energy savings consistent with the statements in specific purpose and rationale of this document.

503.1 Energy performance reduces energy use and GHG emissions in two tiers of efficiency above the requirements in the 2007 California Energy Code.

504.1 ENERGY STAR equipment and appliances is a prescriptive measure to save energy with builder-installed units.

504.2 Energy monitoring records building energy use to track consumption and increase energy efficiency.

504.3 Demand response uses automated demand response strategies to reduce peak HVAC demand and total lighting load.

504.5 Building orientation and shading describes energy-saving design strategies for passive heating and cooling of a building.

505.4 Commissioning provides guidance for design, installation, testing, training, and ongoing maintenance of building systems to ensure they are appropriate for their use and function at maximum efficiency for their useful lives.

511.1 On-site renewable energy lists means of providing clean energy from sources other than power plants, either on- or off the grid.

511.2 Green power encourages utility customers to participate in local utilities' renewable energy programs.

512.1 Elevators and escalators provides for controls to reduce the electrical demand of these systems during non-peak usage.

CHAPTER 6. WATER EFFICIENCY AND CONSERVATION

The provisions of this chapter were developed in discussion with staff from the Department of Water Resources and are designed to provide greater water savings consistent with the statements in specific purpose and rationale of this document.

603.1 Meters for indoor and outdoor potable water record water use to induce water-conservation in an historically dry state of California.

603.2 20% savings and **603.4 Wastewater reduction** describe methods of achieving reduction in overall indoor potable water use and impact on municipal water supply and wastewater treatment.

603.3 Appliances section specifies water conserving water factors and other features for various appliances.

604.1 Water budget is mandated by the Department of Water Resources or local jurisdictions for water-efficient landscape irrigation.

604.2 Potable water reduction and **604.3 Potable water elimination** include methods to achieve reduction or elimination of potable water for landscape irrigation, conserving potable water for other uses.

604.4 Graywater irrigation system and **604.5 Rainwater or stormwater collection systems** describe strategies for conserving potable water recommended by 604.2 and 604.3.

CHAPTER 7. MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Section 704.2 Wood framing systems provides a web link to the DOE which describes advanced framing systems designed to conserve both materials and labor.

704.3 Steel framing describes techniques for conserving steel in framing while establishing structural and thermal integrity of the envelope.

705.1 Regional materials, **705.2 Bio-based materials**, **705.3 Certified wood products**, and **705.4** through **705.11** outline ways to promote the use of sustainable building materials and decrease their embodied energy.

706.1 Choice of materials promotes the use of durable, ultimately recyclable or reusable building materials that require minimal refinishing, saving cost, indoor air quality, and raw materials.

707.1 Weather protection requires that the building envelope meet current standards to prohibit water intrusion through the envelope, preventing damage to the structure and mold contamination.

707.2 Moisture control provides for additional measures for preventing water from entering the building, preventing mold contamination and damage to the structure and interior finishes.

708.1 Construction waste management plan documents means of diverting construction waste from the landfill through efficient use, recycling, or reuse of building materials, intended to save raw materials and preserve landfill space.

708.2 and **708.3 50%** and **75% construction waste** describe tiers of enhanced compliance to meet the construction waste management plan.

708.4 Excavated soil and land clearing debris intends to eliminate this class of bulky materials from the landfill and promote reuse as appropriate.

709.1 Materials and system assemblies enables code users to access software and information about life cycle assessment of materials to select those with the lowest embodied energy and GHG potentials.

710.1 Recycling by occupants provides for ready access by building occupants to areas for recycling required by the Public Resources Code.

CHAPTER 8. ENVIRONMENTAL QUALITY

803.1 describes fireplace criteria to minimize indoor air pollution.

804.1 and **804.2 Indoor air quality (IAQ) during construction** includes measures for ventilating the construction work site to protect workers and systems from pollutants; measures for storage and installation of materials to reduce contamination by mold or fumes; and post-construction flush-out measures to protect the new building occupants.

804.4 Finish material pollutant control references standards for adhesives and paints and coatings, carpet systems, composite wood and agrifiber products to minimize VOC and other noxious emissions to improve outdoor and indoor air quality.

804.5 Hazardous particulates and chemical pollutants section controls the entry of outdoor pollutants by occupants and contains pollutants generated in specific areas of a building to improve indoor air quality.

804.6 Ozone depletion and global warming reductions are mandatory and voluntary provisions to eliminate the use of CFC refrigerants, HCFCs, and Halons in HVAC and fire suppression systems to reduce ozone depletion and GHG emissions.

805.1 Indoor moisture control points to the California Building Code as a minimum standard to exceed to minimize the growth of mold and mildew for occupant health.

806.1 Outside air delivery requires compliance with the California Energy Code for ventilation for occupant health and economy of HVAC systems.

806.2 Carbon dioxide (CO₂) monitoring provides for permanent CO₂ monitoring and warning systems to protect occupant health and minimize GHG emissions.

807.1 Lighting and thermal comfort controls, 807.2 Verification of indoor environmental quality, 807.3 Daylight, 807.4 Views, and 807.5 Acoustical control, within the parameters of the California Energy Code, would improve the work environments of building occupants to increase their well being and productivity, and potentially save employers, the state, and health insurers money in through healthy work attendance.

TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS:

¹ May 7, 2007 memorandum of understanding among the American Institute of Architects; the American Society of Heating, Refrigerating and Air-Conditioning; Architecture 2030; the Illuminating Engineering Society of North America; and the United States Green Building Council, supported by representatives of the U.S. Department of Energy.

² California Construction Review, August 27, 2007; reports almost \$21 billion in private nonresidential construction (does not include public sector).

³ Third-year report of progress of California's Sustainable Building Task Force in response to Governor Gray Davis' Executive Order D-16-00.

⁴ S. Abbaszadeh, L. Zagreus, D. Lehrer, and C. Huizenga (Center for the Built Environment, U.C. Berkeley), Occupant Satisfaction with Indoor Environmental Quality in Green Buildings, 2006

⁵ Including LEED NC 2.2, Green Globes, the Collaborative for High Performance Schools, Global Green, draft ASHRAE 189P, NAHB/ICC.

CONSIDERATION OF REASONABLE ALTERNATIVES

CBSC considered whether or not to consider mandatory measures for all or part of the proposals as an alternative to voluntary guidelines. Given that the measures are establishing a framework for future green building standards to be developed for the 2009 code adoption cycle, it was agreed to move forward with voluntary measures at this time. This will allow designers, builders, and building inspectors and officials a learning period and flexibility of application.

REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS.

No alternatives were identified to lessen the adverse impact on small businesses, because the guidelines are voluntary and can be selected to meets the needs of individual businesses.

FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE IMPACT ON BUSINESS.

- The third-year report of progress of California's Sustainable Building Task Force in response to Governor Gray Davis' Executive Order D-16-00 indicates that an increase in upfront construction costs for green features, especially in the energy sector, will be paid back during the life of a building.
- It is reasonable to predict that business opportunities will also arise from California's taking the lead in the development of statewide green building standards.
- The guidelines are voluntary and can be selected to meets the needs of individual businesses.

DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

Federal regulations may be adopted for use in California by those state and local agencies with authority for clean air, clean water, water conservation, energy conservation, and waste management. Those regulations may be cited in the proposed guidelines as they are applied in California.