

**INITIAL STATEMENT OF REASONS
FOR
PROPOSED BUILDING STANDARDS
OF THE
DIVISION OF THE STATE ARCHITECT- STRUCTURAL SAFETY (DSA-SS)**

**REGARDING ADOPTION OF AMENDMENTS TO THE 2010 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 DSA adopts and amends mandatory and voluntary green building standards for occupancies within its authority. The proposed actions further build upon a framework of voluntary measures adopted by DSA in 2008 and make minor modifications and clarifications to the 2010 code, which became effective on January 1, 2011. The intent of the code continues to be to (1) reduce greenhouse gas emissions from buildings; (2) promote environmentally responsible, cost-effective, healthier places to live and work; and (3) respond to the directives by the Governor in 2008 to develop a green building code for 2010.

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 designing 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.

The DSA is not proposing to make any of the current voluntary provisions mandatory; nor make any substantive changes to the mandatory provisions. The proposed amendments are for clarification and formatting revisions. DSA is proposing to add banners to identify sections adopted by the Division of the State Architect (DSA-SS) for public schools and community colleges for clarity to the code user.

Specific Proposed Regulatory Actions: DSA proposes to amend the 2010 California Green Building Standards Code (CGBC) in an intervening supplement. The rationale for each adoption by chapter, division, and section is listed below.

It is further DSA's intent to provide clarity to the code user in consistent reference nomenclature to other parts of Title 24, for example, the 2010 California Energy Code, which was requested by that agency. Not all such reference changes are shown in the express terms and none is justified below, because they are editorial in nature, having no regulatory effect, and will be coordinated in the codification of the supplement.

CHAPTER 2. DEFINITIONS

DSA is proposing two new definitions for terms used in more than one chapter to provide clarity to the code user. At the request of the California Air Resources Board, an agency which has its regulations cited in this code, a definition of their acronym, ARB or CARB, is included. Moved from Division A5.2 is the definition for Time Dependent Valuation (TDV) Energy, which is also proposed for adoption this code cycle by HCD in Division A4.2.

Division 5.1 PLANNING AND DESIGN

Section 5.106.8 Light pollution reduction. Several comments have been received on this section, which cites energy code requirements and specified ones from Illuminating Engineers Society of North America recommended practice for dark skies. Some of the comments were picked up as editorial changes in January 1, 2011 errata to the code. Proposed modifications provide clarity for the code user:

- Omit the term "zero direct-beam illumination" in recognition that some light will always leave the site;
- Clarify that interior lighting "contained within each source" should say "contained within each structure";
- Modify the amount of vertical and horizontal light permitted at the site boundary to a number that can be achieved with parking lot lighting at an optimum 1 footcandle;
- Clarify that controls should be programmable but their actual use cannot be dictated by this code;
- Change the phrase "dawn to dusk" to "sunset to sunrise" to use accepted nomenclature;
- Add an option for meeting local dark sky ordinance;
- Add a list of exceptions for lighting which falls into task or process categories, similar to the energy code and ASHRAE 189.1

Section 5.106.10 Grading and paving. This section to move surface water away from buildings to prevent mold and structural damage in the building is being modified slightly to emphasize means of compliance. Grading and paving plans, typically required by enforcing agencies, will show how this is to be accomplished, and a list of methods for managing flows, aligned with the Department of Housing and Community Development's (HCD) section, has been added.

Division 5.3 WATER EFFICIENCY AND CONSERVATION

Section 5.303.2 20% savings, 5.302.2.1 Multiple showerheads, **Table 5.303.2.2,** and **Table 5.303.2.3.** CBSC is proposing the modification of these sections and tables in response to comments from CARB and to coordinate language with HCD. Changes include clarifications to prescriptive and performance measures, controls for multiple showerheads serving one shower, identification of baseline flow rates in the tables, and deletion of the word "Indoor" from the title of Table 5.303.2.2. Proposed also for deletion is footnote 2 to Table 5.303.2.2, which referenced the California Energy Commission Appliance Efficiency Standards in Title 20 as the source of most baseline flow rates, as superfluous, since the baseline flow rates are shown in the tables.

Table 5.303.6. This table for referenced standards for plumbing fixtures and fittings is being proposed for amendment to include the standards for showerheads to provide clarity to the code user, in coordination with HCD.

Division 5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Sections 5.408.1 Construction waste diversion, 5.408.2 Construction waste management plan and 5.408.3 Construction waste. DSA is proposing combining these three sections into one, **5.408.1 Construction waste management,** to provide clarity to the code user. Terms are being coordinated to mean the same things. Options for utilization of an approved waste management company and a waste stream reduction alternative for efficient construction methods are added to provide more methods of compliance. Exceptions are broadened to recognize that 50% of demolition waste may not be recyclable locally.

Division 5.5 ENVIRONMENTAL QUALITY

Most of the changes proposed for this division resulted from comments received from CARB. They are intended to provide clarity and accuracy for the code user, as in the definition in Section 5.502 for Composite Wood Products, which adds a reference to CARB's Title 17 standards, and adds new definitions for terms introduced in a proposed revision of the sound transmission provisions.

Section 5.504.3 Covering of duct openings of mechanical equipment during construction. DSA is proposing to modify this section in concert with HCD and CBSC, in response to comments made by CARB, to clarify for the code user when protection is needed, which equipment to protect, and against what pollutants ducts should be sealed.

Sections 5.504.4.4 Carpet systems and 5.504.4.3.1 Carpet cushion. DSA is proposing updating the referenced standards as suggested by CARB to their current names. The standard for NSF/ANSI 140 "Gold" is also tagged as a minimum standard, not an absolute, for clarity.

Section 5.504.4.6 Resilient flooring systems. DSA is proposing updating the referenced standards as suggested by CARB to their current names.

Section 5.504.5.3 Filters. DSA is proposing modification of this section providing clarity for the code user to emphasize that MERV 8 filters are to be installed prior to occupancy and that their replacement with like filters should be a recommendation for operation of a building. (See also Section 5.504.1.3, above.) Also, in response to comment, an exception has been added for certain ductless HVAC equipment which is incompatible with the MERV 8 filter requirement, but which is highly efficient and provides other benefits to a building operator.

CHAPTER 6. REFERENCED STANDARDS

Section: 601.1 General. DSA is proposing amendment of this section to provide clarity to the code user regarding ASTM standards which have been added as references in other changes.

CHAPTER 8. Compliance Forms and Worksheets. Modification of Footnote 2 in Water use Worksheets WS-2 and WS-3 are proposed for coordination with changes made to the prescriptive tables, noted above. Guidance documents for construction waster management, in coordination with CBSC and HCD, are being proposed for withdrawal from the code and relocation in the agencies' guideline documents.

APPENDIX A5. NONRESIDENTIAL VOLUNTARY MEASURES

The voluntary provisions in the appendices are included to provide public schools and community colleges with "reach" standards. They are also intended for code users that they may want to incorporate into the design and construction of new nonresidential buildings or in additions or alterations. Appendix A5 for nonresidential construction is being proposed for amendment as follows.

Division A5.1 SITE PLANNING AND DESIGN

Section A5.102.1 Definitions. DSA is proposing definitions of several words and phrases concerning reflectance of solar energy and heat that are used in suggested revisions in this division. It is adding a definition for "vegetated space" that is used in a new voluntary proposal for bird-safe building design. Definitions are intended to provide clarity to the code user as to the exact meanings of terms used in the regulations.

Sections A5.106.4 Bicycle parking and changing rooms. In coordination with CBSC's proposed modification for the mandatory measure, it deletes, at the request of the University of California, a reference to the University of

California Policy on Sustainable Practices. It also adds a banner to identify subsections that are adopted by the Division of the State Architect (DSA-SS) for public schools for clarity to the code user.

Section A5.106.5.1 Designated parking for fuel efficient vehicles. This section requires that a graduated number of parking stalls be reserved and marked for any combination low-emission, alternative fuel, and carpool vehicles. In coordination with CBSC, DSA proposes formatting changes to provide clarity to the code user and accommodate DSA-SS' partial adoption of this section and its subsections.

Section A5.106.5.1.3 Parking stall marking. The changes, proposed by CARB, are to delete the definition for a PZEV vehicle, which does not qualify, and change the stall marking designation more accurately to reflect qualifying vehicles that shall be permitted to park there.

Section A5.106.7 Exterior wall shading. DSA is proposing minor changes to this voluntary section in response to comments from the California Energy Commission (CEC) to provide clarity to the code user. The changes include re-formatting the section to show more clearly different shading options for each side of a building and coverage required.

Section A5.106.9 Building orientation. DSA is proposing a minor modification in response to a comment from CEC to have this provision align with a similar provision HCD adopts for residential new construction. This will provide clarity and consistency for the code user.

Section A5.106.11 Heat island effect. DSA is proposing to amend this voluntary section and subsections which are a recognized method for reducing global warming. CBSC received comment on these provisions from the California Nevada Cement Association (CNCA) to include standards for reflective surfaces and options for hardscape materials supported by the industry. CARB provided technical assistance on applicable definitions and standards. DSA also proposes modifications to coordinate with CEC's regulations for cool roofs, coordinating also with CBSC and HCD. These minor changes are intended to provide clarity and consistency for the code user, especially those adopting a tier, of which the cool roof provisions are an element.

Division A5.2 ENERGY EFFICIENCY

Section A5.203.1 Energy performance. DSA is proposing to modify this voluntary section regarding reduction of energy use and greenhouse gas emissions into two voluntary measures of efficiency above the requirements in the California Energy Code. In addition to deleting a duplicative sentence and making reference and syntax corrections, CBSC is responding to comments from energy consultants regarding calculation of the "15 and 30 percent better than" numbers to provide clarity to the code user.

A5.211.4 Pre-wiring for future solar. DSA proposes modification of these provisions and their format in response to comments from the CEC to provide clarity to the code user concerning future installation of and accommodation for commercial rooftop solar. Changes distinguish between installations that will require battery storage and those that will not.

Sections A5.212.1 Elevators and escalators, A5.212.1.1 Elevators and A5.212.1.2 Escalators. In response to comment concerning a potential conflict with Title 8 for escalators, DSA is proposing reworking this voluntary section to promote the use of regenerative drive systems in elevators and escalators. These systems are designed to return electricity into the building grid when the conveyances are loaded going down and making use of gravitational force. Somewhat more expensive than those with conventional drives, regenerative drive elevators in high-rise buildings can reduce elevator energy use by about 15% and pay back the additional cost in around 5 years.

Division A5.3 WATER EFFICIENCY AND CONSERVATION

Section A5.303.2.1 30% Savings, Table A5.303.2.2, and Table A5.303.2.3.1. DSA is proposing the modification of these sections and tables in response to comments from CARB and to coordinate language with CBSC and HCD. Changes include clarifications to prescriptive and performance measures and identification of baseline flow rates in the tables, and addition of a reference to national standards for fixtures not regulated by the Energy Commission in Title 20.

Section A5.503.3 Appliances. DSA is proposing modifications to provide clarity to the code user regarding indoor water use conservation of appliances. After reviewing provisions in ASHRAE 189.1, the International Association of Plumbing and Mechanical Officials' 2010 Green Plumbing and Mechanical Code Supplement, and credits in LEED, DSA proposes adding combination ovens and commercial pre-rinse spray valves with standards for their compliance. It also is including metric equivalencies in liters to each of the gallon metrics in this section.

Division A5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Section A5.402.1 Definitions. DSA is proposing for definition several words and phrases concerning life cycle assessment, which is also being proposed for modification. These definitions provide guidance to the user on the meaning of words used within this chapter.

Section A5.405.4.2 Determination of recycled content value (RCV). DSA is proposing modification of the subsection to provide clarity to the code user regarding calculation of recycled content in recycled materials. CBSC has received questions on this section during training on the CALGreen Code and saw the need for explanation, including equations that may be used in the calculations.

Section A5.408.3.1 Enhanced construction waste reduction. DSA is proposing modifications to provide clarity to the code user regarding increased construction waste diversion that align with proposed changes to the mandatory

standards in Section 5.408.1 and subsections. CBSC also proposes numbering and formatting changes to facilitate coordination with other agency adoptions.

SECTION A5.409 LIFE CYCLE ASSESSMENT [LCA], Section A5.409.1 General and subsections. DSA is renumbering, reformatting and revising this voluntary section in response to changes proposed by CNCA. A small focus subgroup of the cement and concrete subgroup was convened to discuss the proposed changes. Included in the group was Wayne Trusty of the Athena Institute, which develops and markets LCA calculators. Wayne is an expert on LCA, as far as it has been developed for common use, and has participated in the development of the International green Construction Code of the International Code Council. Also participating was Martha VanGeem, an LCA expert from CTLGroup, an engineering consulting and materials testing firm specializing in cement and concrete.

This section is being revised to standards for whole building life cycle assessment as a preferred option to assessment of individual building assemblies or components. It includes the impacts to be measured for a target of 10% improvement in environmental performance compared to a referenced building. A subsection, A5.409.2, provides an option for LCA of materials and system assemblies if whole building LCA is deemed unfeasible. LCA is a relatively new tool for measurement of environmental performance of buildings and the options are intended to introduce it to code users at whatever level they feel comfortable.

Section A5.410.3 Commissioning. DSA is proposing modifications to correct and simplify this complex section for code users. Implementing this voluntary provision is for all new buildings over 10,000 square feet. These changes, along with the recent publication of a guideline for building commissioning, are intended to clarify the process and ease verification of compliance while the number of personnel certified in commissioning grows.

Section A5.410.5 Testing and adjusting. These voluntary provisions for means of achieving quality control for building systems in projects under 10,000 are being proposed for minor changes in coordination with the changes proposed for commissioning, above.

Division 5.5 ENVIRONMENTAL QUALITY

Most of the changes proposed for this division resulted from comments received from CARB. They are intended to provide clarity and accuracy for the code user, as in the definition in Section 5.502 for Composite Wood Products, which adds a reference to CARB's Title 17 standards, and adds new definitions for terms introduced in a proposed revision of the sound transmission provisions.

Section A5.502.1 Definitions. DSA is proposing minor modification to two definitions at the request of CARB, concerning primarily references to CCR, Title 17.

Section A5.504.2 IAQ Post-construction. Item 5 of this section is proposed for minor clarification of non-continuous flush-out calculations recommended by CARB.

Section A5.504.4.5.1 Early compliance with formaldehyde limits. DSA in coordination with CBSC is renumbering and reformatting this Section A5.504.4.5.1 at the recommendation of CARB to provide clarity for the code user concerning the Tier 1 and Tier 2 criteria and the voluntary measure for public schools and community colleges.

Sections A5.504.4.7 Resilient flooring systems. DSA proposes these voluntary reach standards be modified at the recommendation of CARB and California Department of Public Health (CDPH), in coordination with HCD, to update referenced standards and provide clarity for the code user.

Sections A5.504.4.8. Thermal insulation and A5.504.4.8.1. Thermal insulation, No-Added Formaldehyde. DSA proposes these voluntary reach standards be modified at the recommendation of CARB and CDPH to update referenced standards to provide clarity for the code user. The changes are also intended to provide clarity to the code user concerning the Tier 1 and Tier 2 criteria, both adopted as voluntary measures by the DSA.

Section A5.504.4.9 Acoustical ceilings and wall panels. DSA proposes to modify this voluntary standard at the recommendation of CARB and CDPH to update referenced standards to provide clarity for the code user.

Division A5.7 NONRESIDENTIAL CHECKLISTS. DSA proposes to delete the Application Checklist for DSA-SS.

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

None to list.

CONSIDERATION OF REASONABLE ALTERNATIVES

The modifications that DSA proposes during this rulemaking are intended to clarify and correct as necessary the provisions of a new mandatory code being used in California for the first time which started in January 2011. They are responsive to comments received in the previous and current code adoption cycles and to concerns raised at various training events held by CBSC across the state in 2010. No alternatives to this responsive action were considered.

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 business, because the modifications to the code are proposed for facilitation of understanding and compliance by the code user.

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

There is no evidence of significant adverse impact on business, because the modifications to the code are proposed for facilitation of understanding and compliance by the code user.

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.