

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

**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 CBSC 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 CBSC 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.

Specific Proposed Regulatory Actions: CBSC 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 CBSC'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 1. ADMINISTRATION

CBSC is proposing to amend of this chapter as follows:

Section 101.3.1: Add an item 8 to include CBSC's authority for green building standards.

Section 103.1: Describe application for CBSC from 101.3.1 under Health and Safety Code Section 18930.5 to the list of authoritative laws cited by CBSC. This law was added to California Building Standards Law by SB 1473 (Ch. 719, Stats 2008) to grant CBSC authority to develop green building standards for occupancies where no other agency has authority or expertise.

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

CHAPTER 2. DEFINITIONS

CBSC is proposing two new definitions for terms used in more than one chapter to provide clarity for 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.

CHAPTER 3. GREEN BUILDING, Section 303, VOLUNTARY TIERS

Section 304.1.1 Tiers: This section is modified, based on comment from the California Air Resources Board (CARB) to clarify the scope and use of voluntary tiers in Appendices A4 and A5.

CHAPTER 5. NONRESIDENTIAL MANDATORY MEASURES

The following nonresidential mandatory measures in the 2010 version of the code in Chapter 5 are proposed for modification based on public comment received and internal review by CBSC. Some comment was received in the previous code cycle, when the mandatory measures were introduced, but was too substantive for change at the time.

Some has been received since the publication of the code, much of it coming during intensive CBSC training throughout the state in the latter half of 2010 to the use of the code. In addition to response from comment, CBSC is proposing the inclusion of a new mandatory division for additions and alterations containing some of the mandatory

provisions for new construction, modified as necessary for additions and alterations.

Division 5.1 PLANNING AND DESIGN

Section 5.106.1 Storm water pollution prevention.

Currently the State Water Resources Control Board (SWRCB) or local agencies issue permits to ensure a Storm Water Pollution Prevention Plan (SWPPP) in compliance with applicable state regulations for projects one acre and larger. This section applies to nonresidential construction projects which disturb less than one acre which are outside the scope of the SWRCB. This section helps prevent pollution from storm water runoff by retaining soil on site and restricting sedimentation from reaching storm water drainage systems and receiving streams or rivers, but does not require a state permit. It recognizes that a local ordinance may govern, and it adds best management practices that can be used to prevent soil loss.

Section 5.106.4 Bicycle parking. The proposed modification deletes, at the request of the University of California, a reference to the University of California Policy on Sustainable Practices.

Section 5.106.5.2 Designated parking. This section requires that a graduated number of parking stalls be reserved and marked for any combination low-emission, alternative fuel, and carpool vehicles. 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 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 5.303.1 Meters. CBSC is proposing the amendment of this section to provide clarity to the code user regarding the use of meters, submeters, and metering devices. For buildings in excess of 50,000 s.f., the amendments consolidate the language for tenants expected to use more than 100 gal/day, and they add submetering for specified subsystems where it is unfeasible to meter individual tenants. They improve awkward language in the section for meters for excess consumers.

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.

Section 5.304.2 Outdoor potable water use. CBSC is proposing minor modification of this section to identify more clearly the landscape areas subject to the provisions, and to indicate that the requirement is for submeters or metering devices, not separate meter connections by water purveyors, which can be very expensive.

Section 5.304.3 Irrigation design. CBSC is proposing clarification of this section to identify more clearly the landscape areas subject to the provisions.

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. CBSC 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.

Section 5.408.4 Excavated soil and land clearing debris. In response to comment from the building industry, CBSC is proposing to add an exception to exempt certifiably diseased soil and land clearing debris from being reused. This section is also being renumbered to 5.408.2 to coordinate with the format of the previous section and subsections.

Section 5.410.2 Commissioning. In response to comments received during the 15-day comment period last code cycle for substantive changes, CBSC is proposing modifications to simplify this complex section for code users and enforcing agencies. Builders and local officials will be implementing these provisions for all new buildings over 10,000 s.f., which, for a city like Los Angeles, will mean hundreds of projects. 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 5.410.4 Testing and adjusting. These 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 5.504.1.3 Temporary ventilation. This is a new section proposed for mandatory compliance, taken from Section A5.504.1.1, Item 3, which allows limited use of the permanent heating and cooling system during construction and requires the use of air filters with a Minimum Efficiency Reporting Value (MERV) of 8. It is intended to control air pollutants for workers during construction and ensure good air quality for occupants when the building is turned over to the owner.

Section 5.504.3 Covering of duct openings of mechanical equipment during construction. CBSC is proposing to modify this section in concert with HCD, 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. CBSC 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 5.504.4.4.2 Documentation [for composite wood products]. CBSC is proposing modification of this section in response to comments by CARB to clarify for the code user the qualifying product certifications.

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

Section 5.504.5.3 Filters. CBSC 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.

Section 5.504.7 Environmental tobacco smoke (ETS) control. CBSC is proposing a minor change in response to comment from CARB to recognize that other laws and regulations may apply to smoking in and around buildings.

Section 5.507.4 Acoustical control. This section is proposed for modification in response to comment to include performance and prescriptive measures to achieve compliance with exterior noise transmission, using measurements recognized in acoustical industry practice.

Division 5.7 ADDITIONS AND ALTERATIONS TO EXISTING NONRESIDENTIAL BUILDINGS

As outlined in general for Chapter 5 above, this is a new division proposed to include standards for additions and alterations to existing nonresidential buildings. The reason for this proposal is to extend the benefits of reduction in greenhouse gas emissions, water use, and polluting finish products to a larger class of buildings than newly constructed buildings. It is modeled after similar provisions recently adopted locally by the City of Los Angeles for its considerable body of construction projects.

5.701 Administration

Section 5.701.1 Scope. CBSC is proposing thresholds for compliance of 1000 s.f. for additions and \$200,000 for alterations, and clarification that only the portions of a building being added or altered must comply. The intent is to exempt small renovation projects which might be disproportionately affected by costs.

5.702 Definitions

Section 5.702.1 Definitions. CBSC is including definitions of addition and of alteration, which are exclusive of each

other, taken from the building code.

5.703 Green Building

Section 5.703.1 Scope. CBSC is proposing that the mandatory provisions in this division be found in the checklists in the appendix in the code.

Section 5.703.2 Phased projects and 5.703.2.1 Tenant improvements. CBSC is proposing to clarify for the code user the application of the provisions of this division to shell buildings and tenant improvements.

5.710 Planning and Design

Section 5.710.1 General. CBSC is proposing scoping language for planning and design.

Section 5.710.6.1 Stormwater pollution prevention. CBSC is proposing this section to prevent pollution from storm water runoff similar to that for new construction, where an addition disturbs less than one acre of soil. It recognizes that a local ordinance may govern, and it adds best management practices that can be used to prevent soil loss. This brings renovation projects in line with new construction projects disturbing similar amounts of soil to prevent soil and sediment from entering receiving waters.

Section 5.710.6.2 Bicycle parking. The proposed section and subsections proposes additional bicycle parking when 10 or more parking spaces are added as part of an addition or alteration project, thus encouraging additional building occupants to use alternate forms of transportation to standard automobiles.

Section 5.710.6.3 Designated parking. The proposed section and subsections proposes additional designated parking stalls when 10 or more parking spaces are added as part of an addition or alteration project, thus encouraging additional building occupants to use alternate forms of transportation to standard automobiles.

Section 5.710.8 Light pollution reduction. CBSC proposes to adopt this section for additions or alterations that affect exterior light levels, using the same language proposed for new construction in Section 5.106.8.

Section 5.710.10 Grading and paving. This section, including BMP aligned with the Department of Housing and Community Development's (HCD), has been included for compliance where grading and paving occur as part of an addition or alteration project altering the drainage path, protecting those structures from surface water.

5.712 Water efficiency and conservation

Section 5.712.3.1 Meters. CBSC is proposing the adoption of this section and subsections from the 2010 code to provide clarity to the code user regarding the use of meters, submeters, and metering devices. For buildings in excess of 50,000 s.f., additions that result in high water-using tenancy or new subsystems would be subject to these provisions. For smaller projects, additions that project very high water use would also need to have separate submeters. The meters are intended as a means of water conservation, a high priority for California, where water is scarce.

Sections 5.712.3.2 20% savings, 5.713.3.3 Multiple showerheads and 5.713.3.5 Plumbing fixtures and fittings. CBSC is proposing the adoption of these sections for 20% reduction in water use and for referenced standards for newly installed fixtures in additions and alterations. Again, the purpose is to enhance water conservation in buildings.

Section 5.712.4.1 Water budget. CBSC is proposing this section for developing a water budget for landscape irrigation installed in conjunction with additions or alterations.

Section 5.712.4.2 Outdoor potable water use. CBSC is proposing this section for submeters or metering devices when additions or alterations require upgraded water service for landscaped areas between 1000 and 5000 s.f. The purpose is primarily to alert building owners and operator to excess dry season irrigation and thus conserve water.

Sections 5.712.4.3 Irrigation design and 5.712.4.3.1 Irrigation controllers. In another water conservation measure, CBSC is proposing use of weather- or soil moisture-based irrigation controllers and rain sensors where additions or alterations increase landscaped area to between 1000 and 2500 s.f. These controllers are designed to direct the right amount of water to landscape plants and prevent excess dry season irrigation.

5.713 Material conservation and resource efficiency

Section 5.713.7.1 Weather protection. CBSC is proposing the adoption of this section from the new construction section provide clarity to the code user regarding weather protection, preventing damage to the structure and mold contamination. The section refers to regulations already in place.

Sections 5.713.7.2 Moisture control, 5.713.7.2.1 Sprinklers, and 5.713.7.2.2 Entries and openings. CBSC is proposing the adoption of these sections from the new construction section to provide clarity to the code user regarding moisture control as it applies to additions and alterations, preventing mold contamination and damage to the structure and interior finishes.

Sections 5.713.8.1 Construction waste management. CBSC is proposing this section and subsections as modified for the new construction division, to provide clarity to the code user. The pounds-per-square-foot alternative is not included here, because more demolition waste is expected with additions or alterations than with new construction; however, there is more potential for reuse of materials. Other than that, this proposal recognizes that waste generated from additions and alterations should be recycled at the same rate as for new construction. The exception for demolition debris is maintained for those circumstances where, due to local facilities and markets, demolition may be recycled at other than a 50% rate.

Section 5.713.8.3 Excavated soil and land clearing debris. In the event of land clearing for an addition or a renovation, CBSC is proposing this section, including an exception to exempt certifiably diseased soil and land clearing debris from being reused, as for new construction.

Sections 5.713.10.1 Recycling by occupants and 5.713.10.1.1 Sample Ordinance. CBSC is proposing the adoption of this section from the new construction division to provide clarity to the code user regarding the establishment of recycling areas for occupants, if not provided on site, in the event of an addition or alteration. This conforms to the California Solid Waste Reuse and Recycling Access Act of 1991.

Section 5.410.4 Testing and adjusting. These provisions for means of achieving quality control for building systems are being proposed additions and alterations where a new system is installed or an existing one upgraded to serve a new or renovated space. This promotes energy and water savings as systems are installed, tested, and adjusted for maximum efficiency when the project is turned over to the owner. Operation and maintenance information is to be provided to the owner to assist with continued efficiency beyond certificate of occupancy.

5.714 Environmental quality

Sections 5.714.3 Fireplaces and 5.714.3.1.1 Woodstoves. CBSC is proposing the adoption of this section from the new construction division to provide clarity to the code user regarding the use of gas and wood burning appliances listed in this section for additions or alterations. As rarely-used amenities in new nonresidential construction, they are not required for heat but are typically installed for effect.

Section 5.714.4.1 Temporary ventilation. This new section proposed for mandatory compliance for newly constructed buildings, taken from Section A5.504.1.1, Item 3, allows limited use of the permanent heating and cooling system during construction of additions and areas of alteration as well. It requires the use of air filters with a Minimum Efficiency Reporting Value (MERV) of 8 and is intended to control air pollutants for workers during construction and ensure good air quality for occupants.

Section 5.714.4.3 Covering of duct openings of mechanical equipment during construction. CBSC is proposing to adopt this section as modified for new construction. The purpose is to protect building occupants from indoor pollution from HVAC equipment operation and to protect the equipment against damage.

Sections 5.714.4.4 Finish material pollutant control, 5.714.4.4.1 Adhesives and sealants and 5.714.4.3 Paints and coatings; and Tables 5.504.4.1, 5.504.4.2 and 5.504.4.3 in Division 5.5. CBSC is proposing the adoption of these sections additions and alterations to provide clarity to the code user regarding indoor air quality. Most indoor air pollution comes from sources inside the building. Paints, stains, adhesives, carpeting, upholstery, manufactured wood products, pesticides, and cleaning agents may emit volatile organic compounds (VOCs), including formaldehyde. CBSC is proposing adoption of VOC limits applicable statewide developed by CARB and is referring the code user to tables in Division 5.5 to assist the code user in identification of the VOC limits for adhesives, sealants, paints and other coatings.

Sections 5.714.4.4.4 Carpet systems, 5.504.4.4.4.1 Carpet cushion and 5.714.4.4.4.2 Carpet adhesive. CBSC is proposing adopting these standards for additions and alterations for the reasons noted above for finish materials.

Section 5.744.4.4.5 Composite wood products. CBSC is proposing the adoption of this section and subsections to provide clarity to the code user regarding the use of formaldehyde in interior finish materials in additions or alterations. In buildings, the most significant sources of formaldehyde are likely to be pressed wood products made using adhesives that contain urea-formaldehyde (UF) resins. Formaldehyde exposure at elevated levels (above 0.1 parts per million) may cause a wide range of health related issues.

Sections: 5.714.4.4.5.2 Documentation [for composite wood products]. CBSC is proposing this section as modified for new construction in response to comments by CARB to clarify for the code user the qualifying product certifications.

Section 5.714.4.4.6 Resilient flooring systems. CBSC is proposing adoption of this section and subsection for additions and alterations as proposed for modification for new construction response to comments by CARB to update referenced standards. The reason is noted above in Section 5.714.4.4.

Section 5.714.4.5.3 Filters. CBSC is proposing adoption of this section and exception as applicable to additions and alterations as modified for new construction to provide 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. It proposes the same exception for highly energy-efficient ductless HVAC equipment.

Section 5.714.4.7 Environmental tobacco smoke (ETS) control. CBSC is proposing adopting this section where it may apply to an addition or alteration, including a minor amendment for new construction in response to comment from CARB to recognize that other laws and regulations may apply to smoking in and around buildings.

Section 5.714.5.1 Indoor moisture control. CBSC is proposing the adoption of this section to provide clarity to the code user regarding moisture control. CBSC is proposing to include references to direct the code user to the California Building Code for general ventilation and moisture control requirements, which are intended to protect occupants from harmful molds and mildews.

Section 5.714.6.1 Outside air delivery. CBSC is proposing the adoption of this section to provide clarity to the code user regarding the mechanical or natural delivery of outdoor air to additions or areas of alteration. CBSC is proposing

to include references to direct the code user to the California Energy Code, Title 24, Part 6 and Title 8, Chapter 4 for requirements.

Section 5.714.6.2 Carbon dioxide (CO₂) monitoring. CBSC is proposing the adoption of this section to provide clarity to the code user regarding carbon dioxide monitoring systems to protect occupant health and minimize GHG emissions. It is limited to additions and alterations to buildings equipped with demand control ventilation and as provided in the California Energy Code, Part 6, Title 24.

Sections 5.714.7.4 Acoustical control, 5.714.7.4.1 Exterior noise transmission, and 5.714.7.4.2 Interior sound. CBSC is proposing the adoption of these sections as modified for new construction to provide clarity to the code user regarding environmental acoustics. When installed as part of an addition or alteration, new exterior walls and roof-ceiling assemblies in buildings located near specified noise-producing neighbors, as well as new wall and floor-ceiling assemblies separating tenants inside the building, shall comply. The proposed provisions are intended to have a positive health and psychological impact on building occupants and promote healthy work attendance and increased productivity.

Section 5.714.8 Ozone depletion and greenhouse gas reductions; Sections 5.714.8.1 CFCs, and 5.714.8.2 Halons. CBSC is proposing the adoption of these sections to provide clarity to the code user regarding the installation of HVAC, refrigeration, and fire suppression systems that use chlorofluorocarbons (CFCs) and halons. Currently, federal law prohibits the use of CFCs and halons in new installations, but they are still available for use in existing systems. Since most contracts for construction require new equipment installed as part of additions or alterations, building owners and contractors are predisposed to comply and assist with the reduction of greenhouse gas emissions from structures, one of the primary goals of the CALGreen Code.

CHAPTER 6. REFERENCED STANDARDS

Section: 601.1 General. CBSC 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 HCD, are being proposed for withdrawal from the code and relocation in the agencies' guideline documents, recently completed.

APPENDIX A5. NONRESIDENTIAL VOLUNTARY MEASURES

The voluntary provisions in the appendices are included to provide cities and counties with "reach" standards, including the tiers, that they can adopt for their communities. 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. CBSC 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.

Section A5.104.2 Bird-safe building design and subsections. CBSC initially proposed a voluntary section for the 2010 code to provide clarity to the code user regarding measures recommended when a building is sited in an area where it poses a hazard to migratory songbirds. Millions of protected species of birds die each year flying into glass buildings and perish when buildings lighted at night cause them to stray from their paths. This measure would reduce the decline of bird populations, which are already impacted by loss of habitat, and promote wildlife protection and human appreciation of wildlife as valid environmental goals that buildings can impact.

In the last code cycle, CBSC withdrew a similar provision for further study in response to comments from the American Institute of Architects, California Chapter (AIACC) about potential professional liability and from the Green Building Code Advisory Committee. For this submittal, CBSC staff consulted various bird-safe building guidelines, including those of the City and County of San Francisco¹, and consulted with experts in bird-safe design in New York to clarify suggested means of compliance. The measure is narrowly scoped to certain sites that pose the most risk to low-flying migratory birds. It has been submitted both to the AIACC and to the California Building Industry Association for comment.

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.

Sections A5.106.5.1 Designated parking for fuel efficient vehicles (Tier 1 and 2). In coordination with DSA-SS, CBSC proposes formatting changes to provide clarity to the code user and accommodate DSA-SS' partial adoption of this section and its subsections.

Section A5.106.7 Exterior wall shading. CBSC 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. CBSC is proposed 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. CBSC 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. CBSC also proposes modifications to coordinate with CEC's regulations for cool roofs, coordinating also with 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. CBSC proposing modifying this voluntary section regarding reduction of energy use and greenhouse gas emissions in two tiers 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.

Sections A5.204.4 Commissioning through A5.210 Appliances. CBSC, exercising its authority for code format, is proposing adding a banner to identify these sections that are adopted by the Office of Statewide Health Planning and Development (OSHPD) for acute care facilities, skilled nursing facilities, and correctional treatment centers. In addition to the information in the Matrix Adoption Table at the beginning of this division, this action is intended to provide clarity to the code user regarding state agency adoption for specific occupancies.

A5.211.4 Pre-wiring for future solar. CBSC 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.

Sectionss 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, CBSC 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. 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 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. CBSC 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, CBSC 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.

Section A5.304.1.1 Water budget. CBSC is proposing adding a banner to identify this section as adopted by the Division of the State Architect (DSA-SS) for public schools for clarity to the code user.

Section A5.304.2.1 Outdoor potable water use. CBSC is proposing minor modification of this section to identify more clearly the landscape areas subject to the provisions, is it has for Section 5.304.2, the mandatory provision for landscape submeters.

Section A5.304.4.4 Potable water reduction. CBSC is proposing adding a banner to identify this section as adopted by the Division of the State Architect (DSA-SS) for public schools for clarity to the code user.

Division A5.4 MATERIAL CONSERVATION AND RESOURCE EFFICIENCY

Section A5.402.1 Definitions. CBSC 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.

Sections A5.405.4, Reused and recycled materials, subsection A5.405.4.2 Determination of recycled content value (RCV). CBSC is proposing modification of the subsection to provide clarity to the code user regarding calculation of recycled content in recycled materials, which are part of the tier structure that may be adopted by a local jurisdiction as mandatory. 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 A5.405.5 Cement and concrete and subsections. CBSC is amending these sections to provide clarity to the code user regarding conservation of material through utilization of supplementary cementitious materials (SCM) in the manufacture of cement and concrete. Comments were received from CNCA on the 2010 standards, and CBSC met with its cement and concrete focus subgroup to discuss CNCA's proposed changes. Comments were submitted on CNCA's proposals by engineers at CalTrans and Structural Engineers Association of California (SEAOC) as well as concrete and SCM industry representatives. Consensus was reached on final changes to update standards references, eliminate all references to CalTrans specifications, add provisions for high-strength concrete, and provide consistency of terms throughout the sections.

Section A5.408.3.1 Enhanced construction waste reduction and A5.408.3.1.1 Verification of compliance. CBSC 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. CBSC 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 A5.410.6 Recycling by occupants. CBSC is proposing adding a banner to this section that is adopted by the Office of Statewide Health Planning and Development (OSHPD) for acute care facilities, skilled nursing facilities, and correctional treatment centers for clarity to the code user.

Division A5.5 ENVIRONMENTAL QUALITY

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

Sections A5.504.1 Indoor air quality during construction and A5.504.1.1 Temporary ventilation. CBSC is proposing amending this Section A5.504.1.1 to omit Item 2, which concerns sealing HVAC ducts and openings, mandatory under Section 5.504.3; and Item 3, which is proposed in this rulemaking for mandatory compliance in new Section 5.504.1.3. It will require that, in the event the HVAC system is used during construction, filters with Minimum Efficiency Reporting Value (MERV) of 8 shall be used, consistent with mandatory Section 5.504.5.3 Filters.

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, Tier 1 and Section A5.504.4.5.2 Early compliance with formaldehyde limits, Tier 2. 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.

Sections A5.504.4.7 Resilient flooring systems Tier 1 and A.504.4.7.1 Resilient flooring systems, Tier 2. CBSC 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, Tier 1 and A5.504.8.1 Thermal Insulation, Tier 2. CBSC 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.

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

Section A5.504.8 Finish material pollutant control. CBSC is proposing adding a banner to this section that is adopted by the Office of Statewide Health Planning and Development (OSHPD) for acute care facilities, skilled nursing facilities, and correctional treatment centers for clarity to the code user. CBSC is also correcting numbering errors within the section.

Section A5.504.9 Environmental tobacco smoke (ETS) control. CBSC is proposing adding a banner to this section that is adopted by the Office of Statewide Health Planning and Development (OSHPD) for acute care facilities, skilled nursing facilities, and correctional treatment centers for clarity to the code user. CBSC is also coordinating the language with the mandatory section for ETS control that it adopts.

SSECTION A5.505 INDOOR MOISTURE CONTROL. CBSC is proposing adding a banner to this section that is adopted by the Office of Statewide Health Planning and Development (OSHPD) for acute care facilities, skilled nursing facilities, and correctional treatment centers for clarity to the code user.

Division A5.6 VOLUNTARY TIERS

Sections A5.601.2 and A5.601.3, CALGREEN TIER 1 and TIER 2. CBSC proposes modifications to align language with the changes proposed for Section A5.203 and subsections, the energy performance tiers that are repeated here. It also proposes minor changes recommended by CARB to clarify for the code user the criteria for the companion requirements to the energy tiers. CBSC additionally proposes adding a table to illustrate the elements of each tier and provide additional clarity for code users, including cities and counties adopting tiers for their communities.

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

¹ “Bird-safe Building”, City of Chicago, Revised 2007; “Bird-friendly Development Guidelines”, City of Toronto, March 2007; “Bird-safe Building Guidelines”, New York City Audubon Society, May 2007; “Standards for Bird-safe Buildings”, San Francisco Planning Department, Draft, October 2010; and “Avoiding bird collisions with glass surfaces”, a study by Martin Roessler, Wolfgang Laube and Philipp Weihs, Austria, March 2007.

CONSIDERATION OF REASONABLE ALTERNATIVES

The modifications that CBSC 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 starting in 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.