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Reducing the Waste Stream for Alameda County



November 16, 2009

Mr. Dave Walls
Executive Director
California Building Standards Commission
2525 Natomas Park Drive, Suite 130
Sacramento, CA 95833

Mr. Doug Hensel
Assistant Deputy Director
California Department of Housing and Community Development
1800 Third Street, Room 450
Sacramento, CA 95811

SUBJECT: California Green Building Code Comments

Dear Messrs Walls and Hensel:

Thank you for the opportunity to comment on the current draft of the California Green Building Code. We appreciate your work on the draft code and the time you have spent in discussions with us and other stakeholders. We offer the following comments on the proposed draft:

Local Government Findings (Section 101.7):

We strongly support the Building Standard Commission’s intent in clarifying that “climatic conditions” include “environmental conditions” for local government findings in support of amendments, additions or deletions to the code. This language is important to ensure that local jurisdictions may adopt additional standards necessary to meet climate change and other environmental goals. However, we recommend removing the qualifier “local” before “environmental conditions.” This term may have the unintended result of preventing local jurisdictions from including the impacts of global climate change in their findings.

Water Efficiency (Sections 5.303.1, 5.303.2, A5.303.3):

Section 5.303.1: We strongly support the metering requirements for water set forth in this section. Separate submeters for individual tenants will help to provide occupants the information they need to voluntarily reduce their water usage and help them get rewarded for their water conservation. These metering requirements also will go a long way to creating much needed water savings and making sensible water rate structures more common.

Section 5.303.2: We also support the mandatory 20% water reductions. This is an important step forward in addressing the need for water conservation in our state.

Section A5.303.3.3: We recommend following the current Energy Star guidelines for water use for commercial dishwashers. These levels of efficiency are widely available and economical. They are as follows:

Undercounter dishmachine high temp = 1 gal/rack

Undercounter dishmachine low temp = 1.7 gal/rack

Door type dishmachine high temp = 0.95 gal/rack

Door type dishmachine low temp = 1.18 gal/rack

Single rack conveyor dishmachine high temp = 0.7 gal/rack

Single rack conveyor dishmachine low temp = 0.79 gal/rack

Multi-tank rack conveyor dishmachine high temp = 0.54 gal/rack

Multi-tank rack conveyor dishmachine low temp = 0.54 gal/rack

For ice machines, it is not necessary or desirable to ban all water-cooled ice machines as many are on chilled loop systems which conserve water and energy. Sometimes (such as in hospitals) that is the only way to get the ice machine in the space.

We recommend the following language:

Ice machines shall be air-cooled or, if water-cooled, shall use a closed-loop system.

No ice machines shall incorporate once-thru cooling using potable water.

We further recommend the amended sections be moved to the mandatory body of the code.

Commissioning (Section 5.4.10.2):

We commend the CBSC for including commissioning in the mandatory section of the draft code. Commissioning is critical to ensuring that a new building operates as intended and that building staff are ready to operate and maintain the systems and equipment. We offer the following suggestions for this section (please see attachment for specific word changes):

- 1) The commissioning section should not be organized as a subsection of the “materials” section of the code. Commissioning has little to do with materials - it is primarily an energy issue, and should be organized as such.
- 2) National certifications are relatively new, and many, if not most, highly qualified commissioning agents are not yet certified. We therefore recommend eliminating the requirement of a nationally recognized organization, at least for this code cycle.
- 3) The words “post construction” in 5.410.2 can be removed with regards to training, because it may be appropriate to do training before all construction activities are complete. Review and demonstration of servicing/preventative maintenance should be included in the training requirements to ensure that the benefits of commissioning persist over time.
- 4) Documenting the programming and expected usage of the building is an important part of the OPR in 5.410.2.1. This is important to understand how the building should be controlled.
- 5) HVAC systems are typically the only system that would require adjusting and balancing in section 5.410.3.2.

Formaldehyde Limits (5.504.4.5 and 4.5.4.6):

We support mandatory limits on formaldehyde. Formaldehyde has been declared a human carcinogen by the World Health Organization, is irritating, and based on a considerable body of research, may exacerbate allergy and asthma outcomes. These limits are an important step forward in reducing the use of formaldehyde.

Acoustical Control (Section 5.507.4):

We are pleased to see the addition of acoustical controls in the draft code. We note a minor correction that is needed: In the first sentence of 5.507.4, “Sound Transmission Coefficient (STC)” should read “Sound Transmission *Class* (STC).” We also recommend increasing the STC from 40 to 50 in 5.507.4.2. STC40 is an exceptionally low performance for a demising partition between two tenants. A minimum of STC50 should be required to provide a better acoustical environment for adjacent tenant spaces.

Voluntary Tiers (Divisions A4.6 and A5.6):

The performance based measures included in the voluntary tiers in the latest draft are a significant improvement and we applaud these changes. However, the draft continues to lack an adequate verification mechanism for the tiers. In our previous comments, we stated that if voluntary tiers are included in the state code, they must be strong performance based tiers with a system for meaningful verification approximately equal to or better than leading private sector and municipal green building programs with independent verification mechanisms. Anything less would undermine the state’s leadership on green building, as well as progress being made by municipalities and private sector programs.

Without adequate verification, these improved performance based measures, along with the other voluntary measures cannot be enforced effectively. Many of the measures are not simple or easy to verify which makes the verification process all the more important. Particularly in the current economic climate, many local building officials do not have the resources to adequately enforce a new and complicated structure. For the goal of bringing uniform standards to the state, the process of verification will be as important to the industry as the requirements to be verified. For example, a number of the current measures could be interpreted vastly differently by the localities that adopt them thereby undermining the goal of providing uniformity for cities that want to go above the state minimum. For these reasons, we recommend providing an adequate verification mechanism for the tiers or delaying adoption of the tiers until this can be developed.

Use of the Term CalGreen (Division A5.6):

We continue to be concerned about the use of the term “CalGreen” which is likely to increase the level of market confusion caused by the tiers and is not in the public interest. “CalGreen Tier I” or “CalGreen Tier II” creates the perception that attainment of these tiers meets a state sanctioned “green” building standard. The use of the label “CalGreen” could result in significant market confusion with the building community and the general public. Moreover, it undermines the efforts of municipalities and the private sector to promote more rigorous and verifiable standards for environmental performance. We commend the Department of Housing and Community Development (HCD) for removing the term “CalGreen” from its draft code and encourage the California Building Standards Commission (CBSC) to do the same.

Thanks again for the opportunity to comment. Please feel free to contact any one of us if you have any questions regarding this letter.

Sincerely,



Dennis Murphy, Chair
California Advocacy Coalition
U.S. Green Building Council



Andrea Traber, President
U.S. Green Building Council
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Tina Andolina
Legislative Director
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Attachment: Recommended Amendments to Mandatory Commissioning Section:

5.410 Commissioning. For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction processes of the building project to verify that the building systems and components meet the owner's project requirements. Commissioning shall be performed in accordance with this section by trained personnel trained with experience on projects of comparable scale and complexity ~~and certified in commissioning by a nationally recognized organization~~. Commissioning requirements shall include as a minimum:

1. Owner's Project Requirements.
2. Basis of Design.
- ~~3. Commissioning measures shown in the construction documents.~~
4. Commissioning Plan.
5. Functional Performance Testing.
- ~~6. Post Construction Documentation & Training.~~
7. Commissioning Report.

All building systems and components covered by Title 24, Part 6, as well as process equipment and controls, and renewable energy systems shall be included in the scope of the Commissioning Requirements.

5.410.2.1 Owner's Project Requirements (OPR). The expectations and requirements of the building shall be documented before the design phase of the project begins. At a minimum, this documentation shall include the following:

1. Environmental and Sustainability Goals.
2. Energy Efficiency Goals.
3. Indoor Environmental Quality Requirements.
4. Project program including the number of people, departments, facility functions and hours of operation by department and function, and the need for after hours operation.
5. Equipment and Systems Expectations.
6. Building Occupant and O&M Personnel Expectations.

5.410.2.2 Basis of Design (BOD). A written explanation of how the design of the building systems meets the Owner's Project Requirements shall be completed at the design phase of the building project, and updated as necessary during the design and construction phases. At a minimum, the Basis of Design document shall cover the following systems:

1. Heating, Ventilation, Air Conditioning (HVAC) Systems and Controls.
2. Indoor Lighting System and Controls.
3. Water Heating System.
4. Renewable Energy Systems.
5. Landscape Irrigation Systems.
6. Water Reuse Systems.

5.410.2.3 Commissioning plan. A commissioning plan shall be completed to document the approach to how the project will be commissioned and shall be started during the design phase of the building project. The Commissioning Plan shall include the following at a minimum:

1. General Project Information.

2. Commissioning Goals.
3. Systems to be commissioned. Plans to test systems and components shall include at a minimum:
 - a. A detailed explanation of the original design intent,
 - b. Equipment and systems to be tested, including the extent of tests,
 - c. Functions to be tested,
 - d. Conditions under which the test shall be performed,
 - e. Measurable criteria for acceptable performance.
4. Commissioning Team Information.
5. Commissioning Process Activities, Schedules & Responsibilities – plans for the completion of Commissioning Requirements listed in A5.410.4.4 through A5.410.4.6 shall be included.

5.410.2.4 Functional performance testing. Functional performance tests shall demonstrate the correct installation and operation of each component, system, and system-to-system interface in accordance with the approved plans and specifications. Functional performance testing reports shall contain information addressing each of the building components tested, the testing methods utilized, and include any readings and adjustments made.

5.410.2.5 Post construction documentation and training. A Systems Manual and Systems Operations Training are required.

5.410.2.5.1 Systems manual. Documentation of the operational aspects of the building shall be completed within the Systems Manual and delivered to the building owner and facilities operator. At a minimum, the Systems Manual shall include the following:

1. Site Information, including facility description, history and current requirements.
2. Site Contact Information.
3. Basic Operations & Maintenance, including general site operating procedures, basic troubleshooting, recommended maintenance requirements, site events log
4. Major Systems.
5. Site Equipment Inventory and Maintenance Notes.
6. A copy of all special inspection verifications required by the enforcing agency or this code.
7. Other Resources & Documentation.

5.410.2.5.2 Systems operations training. The training of the appropriate maintenance staff for each equipment type and/or system shall include, as a minimum, the following:

1. System/Equipment overview (what it is, what it does and what other systems and/or equipment it interfaces with).
2. Review of the information in the Systems Manual.
3. Review of the record drawings on the system/equipment.
4. Review of required preventative maintenance.
5. Demonstration of how to service equipment and systems.

5.410.2.6 Commissioning report. A complete report of commissioning process activities undertaken through the design, construction and post-construction phases of the building project shall be completed and provided to the owner.

Section 5.410.3 Testing, adjusting and balancing. Testing, adjusting and balancing of systems shall be required for buildings less than 10,000 square feet.

5.410.3.2 Systems. Develop a written plan of procedures for testing, adjusting and balancing systems. Systems to be included for testing, adjusting and balancing shall include at a minimum, as applicable to the project:

1. HVAC systems ~~and controls~~
2. ~~Indoor and outdoor lighting and controls~~
3. ~~Water heating systems~~
4. ~~Renewable energy systems~~
5. ~~Landscape Irrigation Systems~~
6. ~~Water Reuse Systems.~~

5.410.3.3 Procedures. Perform testing, adjusting and balancing procedures in accordance with industry best practices and applicable national standards on each system.

5.410.3.3.1 HVAC balancing. Before a new space-conditioning system serving a building or space is operated for normal use, the system should be balanced in accordance with the procedures defined by the Testing Adjusting and Balancing Bureau National Standards (2003); the National Environmental Balancing Bureau Procedural Standards (1983); or Associated Air Balance Council National Standards (1989).

5.410.3.4 Reporting. After completion of testing, adjusting and balancing, provide a final report of testing signed by the individual responsible for performing these services.

5.410.3.5 Operation and maintenance manual. Provide the building owner with detailed operating and maintenance instructions and copies of guaranties/warranties for each system prior to final inspection.

5.410.3.5.1 Special inspections. Include a copy of all special inspection verifications required by the enforcing agency or this code.