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California Really Goes Green: An Assessment of the California Green Building Standards Code and Its Impact on Third-Party Certifications

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In 2008, the California Green Building Standards Commission (Commission) promulgated the current California Green Building Standards Code (Code) as a supplement to the 2007 California Building Standards Code.[1] The Code, which officially went into effect on August 1, 2009, is the first state-wide effort to adopt "green" development standards. The Code sets baseline—mostly voluntary—green building standards that leave local governments with the discretion to enact more stringent requirements. As such, many local governments in California have either required some level of LEED®[2] certification as part of its permitting process or incorporated LEED® concepts into the local Building Code.

The Commission recently released the CALGREEN Code,[3] a mandatory code applicable to all residential, commercial, hospital and school buildings in the state which becomes effective on January 1, 2011. The mandatory nature of the CALGREEN Code will require local governments to review their current building codes and revise them to meet the new CALGREEN standard. Although municipalities may still implement more stringent regulations, and require third-party certifications, such revisions may discourage the continued adoption of LEED® requirements and may cause some municipalities to abandon LEED® requirements in favor of the new CALGREEN Code.

Given that the CALGREEN Code does not take effect until 2011, we will begin with a discussion of the Code currently in effect, before moving on to an explanation of the CALGREEN Code and how its provisions may impact the green development landscape.

The California Green Building Standards Code (effective August 1, 2009)

The current Code applies to the operation, construction, maintenance and removal of *every* building or structure and any appurtenances connected or attached thereto throughout California. Only those standards that are effective *at the time* an application for a building permit is submitted apply to the consideration thereof.

To determine which provisions of the Code are applicable, a developer should refer to §§ 103–106 of the Code, which list types of occupancies and the corresponding state agency with authority over enforcement. For example, the Code lists the local building department or the Department of Housing and Community Development as the enforcing agency for residential construction. The developer should then refer to the application matrix in Chapter 11 of the Code which lists the specific green building measures applicable to its type of occupancy. This will enable the developer to submit complete construction documents (required to be submitted with the permit application) by indicating proposed green building features and how those features will conform to the provisions of the Code. For mixed occupancy buildings, each portion of the building must comply with the specific green building measures applicable to each type of occupancy.

The provisions of the Code affect every stage of the development process, from design to materials selection to recycling requirements for building occupants. Specifically, the Code divides the concepts it encourages into the following five categories: (1) planning and design, (2) energy efficiency, (3) water efficiency and conservation, (4) material conservation and resource efficiency, and (5) environmental quality.

Planning and Design

In the site development stage, the Code encourages developers to preserve natural resources by minimizing negative effects on the site and adjacent areas. Projects that disturb less than one acre of soil and are not part of a larger development plan are to develop a storm water drainage plan to be implemented during construction. Such a plan should prevent flooding, runoff and erosion through the use of retention basins and/or wattles (hay or straw formed in tubes and placed on downflow slopes). Projects must also comply with any applicable storm water management ordinances.

Energy Efficiency

The energy efficiency provisions of the Code outline two means of achieving enhanced building energy efficiency: the performance approach and the prescriptive approach. The performance approach encourages buildings to achieve a 15 or 30 percent reduction in energy usage (depending on which "tier" the project falls into) in comparison to the State's mandatory energy efficiency standards as adopted by the California Energy Commission.[4]

The prescriptive approach encourages the use of ENERGY STAR[5] labeling on all applicable equipment and/or appliances and the monitoring of energy use (and the storage of such

data) for each major energy system in the building. This approach incorporates demand response by requiring that HVAC systems and centralized lighting systems are preprogrammed with demand response strategies. Building orientation and shading requirements are also outlined. A major feature of the prescriptive approach is commissioning: building commissioning is to be included in all stages of development to ensure that an owner's project requirements—including, among other things, environmental and sustainability goals, energy efficiency goals and building occupant expectations—are met. Project goals are to be documented even before the design phase of the project begins. A commissioning plan, outlining these goals and corresponding testing requirements, should then be completed and started during the design phase. A systems manual and systems operation training will ensure compliance therewith post-construction. A commissioning report will detail these activities throughout the design, construction and post-construction phases of the project and be provided to the owner.

General energy efficiency requirements outlined in this section include the use of on-site renewable energy sources (solar, wind, geothermal, low-impact hydro, biomass and bio-gas) for at least 1 percent of electric power and 1 percent of natural gas or propane use.

Water Efficiency and Conservation

The major water-related standard of the Code is the goal of reducing the overall use of potable water within the building by 20 percent. This is to be achieved by the introduction of appliances conforming to various criteria and the installation of water-conserving fixtures or the use of nonpotable water systems (captured rainwater, graywater, recycled water) to reduce wastewater generation. As for outdoor water use, a "water budget" for landscape irrigation should be developed to reduce the use of potable water by 50 percent or eliminate it altogether. These requirements are best achieved through the use of native vegetation, drought-tolerant landscaping and other features.

Material Conservation and Resource Efficiency

The Code encourages material conservation and resource efficiency through reuse and recycling. Developers should use materials harvested or manufactured in California or within 500 miles of the project site. Regional materials must make up at least 10 percent (based on cost) of the total materials value. Bio-based materials—made from solid wood, bamboo, wool, cotton, cork, straw, natural fibers, etc.—should be used where possible. Salvaged, refurbished or reused materials should account for at least 5 percent of the total value of materials and recycled materials should account for a minimum of 10 percent. All cement

and concrete should be made with recycled products. In general, chosen materials should be characterized by longer service life, reduced maintenance or recyclability and should be selected based on life cycle assessment of their embodied energy and/or green house gas emission potentials.

The building should feature a weather-resistant exterior wall and foundation envelope and employ moisture control measures (sprinklers or entries designed to prevent water intrusion). If there is no local construction and demolition waste ordinance that applies, a developer should submit to the enforcement authority a construction waste management plan that identifies materials to be diverted from disposal by recycling or reuse. A minimum of 50 percent of construction waste and 100 percent of excavated soil and land clearing debris should be recycled or reused.

In terms of building operation and maintenance, readily accessible areas should be provided to encourage recycling by occupants, and an operation and maintenance manual detailing "green" features and operation thereof should be placed on-site.

Environmental Quality

This section of the Code outlines various means of reducing odorous, irritating and/or harmful air contaminants. Use of specified types of fireplaces, duct openings, adhesives, paints and coatings, carpets and flooring will reduce the quantity of such pollutants. The Code also includes indoor moisture control and ventilation requirements.

CALGREEN Code (effective January 1, 2011)

The CALGREEN Code (CALGREEN) will make all of the previously-voluntary provisions of the Code mandatory, and therefore may supplant existing municipal codes that require compliance with third-party certifications such as LEED®. CALGREEN, like the current Code, gives municipalities the discretion to adopt more stringent standards.

CALGREEN offers municipalities a familiar code-type system to ensure compliance with its requirements. Many third-party systems, such as LEED®, are point-based. Point-based systems are often viewed as somewhat arbitrary in their assignment of points and fail to recognize the cost or environmental value of certain building attributes. One of the most often cited criticisms of LEED®, for example, is that a point is awarded for bicycle racks and showers and an equal point is awarded for building on a brownfield site.

The CALGREEN code is enforced by municipal building officials who are subject to state and federal laws relating to timing, discrimination, court review and appeal. Many legal professionals have raised the specter that requiring third-party certification by regulation or ordinance is unconstitutional because the third-party is not subject to the same legal safeguards that overlay the municipal permitting process. Furthermore, there may be no oversight for a denial of certification by a disinterested court.

The CALGREEN code was developed in an open and familiar democratic process that included private and public input and is the same process by which all other regulations are adopted. Third-party certification requirements are often developed by partisan organizations with agendas and which may not include all of the stakeholders. Thus, some stakeholders may not have the same level of input in a third-party certification standard as they do in a regulatory rulemaking process.

Another positive aspect of CALGREEN is that it mandates field inspections by government agencies to ensure that its provisions are followed, whereas point-based systems often feature paper-based audit systems used to award points. Once a certification is issued, there may not be real-world experience data to ensure that projections are met and that systems are maintained properly to continue meeting the certification requirements, although third-party certification organizations are working towards ongoing monitoring of building systems. Finally, while compliance with CALGREEN will undoubtedly raise the cost of development, there is no additional cost to become CALGREEN-certified. Most point-based systems charge high fees for obtaining certification and may require that projects hire certain experts to guide them through the certification process.

Given that a number of municipalities,[6] including San Francisco, San Jose, San Diego and Los Angeles, have already adopted green building standards—sometimes incorporating certification via established point-based systems—as part of their building codes, they may now review these standards to determine whether they comply with CALGREEN. San Francisco, for example, has adopted green building requirements[7] that use a combination of LEED® and GreenPoint[8] standards as benchmarks. Once CALGREEN is effective, San Francisco and other municipalities may abandon point-based systems as a marker of success given that CALGREEN standards are not only mandatory but also potentially less expensive for developers.

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[1] See Cal. Code Regs. tit. 24, pt. 11 (2009).

[2] LEED® refers to the Leadership in Energy and Environmental Design certification, which has been established and implemented by the United States Green Building Council.

[3] The CALGREEN Code is accessible at http://www.documents.dgs.ca.gov/bsc/documents/2010/Draft-2010-CALGreenCode.pdf.

[4] California Energy Commission, *2008 Building Energy: Efficiency Standards for Residential and nonresidential Buildings*, CEC-400-2008-001-CMF (Effective Jan. 1, 2010), available at http://www.energy.ca.gov/2008publications/CEC-400-2008-001/CEC-400-2008-001-CMF.PDF.

[5] ENERGY STAR is a joint program of the U.S. Environmental Protection Agency and the U.S. Department of Energy. Energy STAR Homepage, http://www.energystar.gov/.

[6] The U.S. Green Building Council (USGBC) maintains a database of municipal efforts to adopt LEED® requirements. *See* USGBC, *Summary of Government LEED® Incentives—March, 2009*, http://www.usgbc.org/ShowFile.aspx?DocumentID=2021.

[7] San Francisco Building Code (2007), Ch. 13C: Green Building Requirements, *available at* http://www.sfenvironment.org/downloads/library/sf_green_building_ordinance_2008.pdf.

[8] GreenPoints is the residential green building rating system and certification methodology developed by the non-profit organization, Build It Green.