TITLE 24 PART 11 - CALIFORNIA GREEN BUILDING CODE

The California Green Building Code (CALGreen) is the nation’s first set of state-wide green building regulations, it’s intention is to reduce construction waste, make buildings more efficient in the use of materials and energy, and reduce environmental impact during and after construction. The Code covers both residential and non-residential buildings, as well as special use buildings such as hospitals and schools. It contains both mandatory requirements and optional improved “tiers” that can be adopted by local jurisdictions. The mandatory requirements are separated into the following divisions:

1. Planning and Design
2. Energy Efficiency
3. Water Efficiency and Conservation
4. Material Conservation and Resource Efficiency
5. Environmental Quality

Planning and Design

This division includes different requirements in site development:

- Storm water-soil lost prevention plan required for newly constructed projects of less than one acre in order to prevent the discharge of surface water pollutants from construction sites into receiving waters.
- For new projects or additions and alterations that add 10 more vehicular parking spaces designate parking is required for any combination of low-emitting, fuel efficient, or car pool/van pool vehicles.
- Short Term Bicycle Parking – If a new project or an addition or alteration is anticipated to generate visitor traffic, provide permanent anchored bicycle rack within 200 ft. of visitor’s entrance, for 5% of new visitor motorized vehicle parking spaces being added, with a minimum of one two-bike capacity rack.
- Long Term Bicycle Parking – For new buildings with over 10 tenant-occupants or for additions or alterations that add 10 more tenant vehicular parking spaces, provide secure bicycle parking for 5% of tenant vehicular parking spaces being added, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and shall be permanently anchored bicycle lockers.
- Light pollution reduction that meets the requirements of the California Energy Code and reduces both light and glare from interior and exterior light source leaving any building site.
- Grading and paving are required to be planned and developed to keep surface water from entering buildings.

Energy Efficiency

The code recognizes the California Energy Commission as the agency with the authority to develop energy efficiency standards for the state. (refer to Energy Code for requirements)

Water Efficiency and Conservation

For indoor water usage:

- A separate water meter is required for each individual tenant within buildings of more than 50,000 sq. ft. where tenants use more than 100 gal/day, and in any building within a project
or any space within a building that consumes more than 1,000 gal/day.

- 20% saving for potable water from all plumbing fixtures in any building.
- Waste Water Reduction – Each building shall reduce wastewater by 20% by one of the following methods:
  - The installation of water conserving fixtures meeting water usage criteria listed in the Code.
  - Utilizing nonpotable water systems complying with the current edition of the California Plumbing Code.

For outdoor water usage:

- Water budgets are required to be developed for landscape and irrigation uses.
- Separate water meters are required for outdoor potable water use for landscape areas between 1,000 to 5,000 sq. ft.
- Irrigation designs are required to incorporate weather or soil moisture-based controllers and rain sensors.

Material Conservation and Resource Efficiency

Requirements on construction waste:

- Establish construction Waste Management Plan (WMP) to ensure that construction waste is diverted from landfills and re-used or recycled.
- Construction waste is to be reduced through recycle and/or salvage for reuse of a minimum of 65% of non-hazardous construction and demolition debris.
- 100% of excavated soil and land clearing debris is required to be reused or recycled.

Requirements on building maintenance and operation:

- Commissioning is required to be included in the design and construction process for building 10,000 sq. ft. and over.
- Testing and adjusting of systems is required for building less than 10,000 sq. ft.

Environmental Quality

Pollution control requirements:

- Finish materials and products are required to be low VOC emitting.
- Duct openings are required to be covered and mechanical equipment to be protected during construction.
- Where outdoor smoking areas are provided, smoking is not allowed within 25 ft of building entries, outdoor air intakes and operable windows.

Environmental comfort requirements:

- Acoustical control is required for buildings in locations where outdoor sound level distracts and discomforts building occupants.

Outdoor air quality requirements:

- Eliminates use of ozone depleting chemicals in fire suppression, HVAC and refrigeration systems.

CALGreen also provides two additional sets of voluntary measures; Tier 1 and Tier 2, to be adopted
by local jurisdictions on their own volition to further reduce green house gas.

For new construction - Tier 1 measures are generally 15% over base code requirements. Tier 2 measures are generally 30% over base code requirements.

For additions and alterations - Tier 1 measures are generally 5-10% over base code requirements. Tier 2 measures are generally 10-15% over base code requirements.

The following are some of the voluntary provisions:

**Planning and Design**

Reduce Parking Capacity – With the approval of the enforcement authority, employ strategies to reduce on site parking area by:

1. Use of on street parking or compact spaces, illustrated on the site plan or
2. Implementation and documentation of programs that encourage occupants to carpool, ride share or use alternate transportation.

**Energy Efficiency**

On-site Renewable Energy – Use on-site renewable energy source such as solar, wind, geothermal, low-impact hydro, biomass and bio-gas for at least 1% of the electric power calculated as the product of the building service voltage.

**Water Efficiency and Conservation**

Graywater Irrigation Systems – Install a graywater collection system for onsite subsurface irrigation using graywater collected from bathtubs, showers, bathroom wash basins and laundry water.

**Material Conservation & Resource Efficiency**

Regional Materials – Compare to other products in a given product category, select building materials or products for permanent installation on the project that have been harvested or manufactured in California or within 500 miles of the project site. Regional materials shall make up at least 10%, based on cost, of total materials value. If regional materials make up only part of a product, their values are calculated as percentages base on weight. Provide documentation of the origins, net projected energy savings and value of regional materials.

**Environmental Quality**

Daylight – Provide daylight spaces as required for toplighting and sidelighting in the Energy Code. In constructing a design, consider the following:

1. Use of light shelves and reflective room surfaces to maximize daylight penetration.
2. Use of means to eliminate glare and direct sun light, including through skylights.
3. Use of photosensor to turn off electric lighting when daylight is sufficient.
4. Not using diffuse daylighting glazing where views are desired

**2016 Calgreen Changes**

**Material conservation & resource efficiency**

*Construction Waste Management - Construction waste is to be reduced through recycle and/or salvage for reuse of a minimum of 65%*

*Universal Waste- In additions and alterations, universal waste are required to be disposed of properly and diverted from landfills. Universal waste includes: Batteries, electronic devices, mercury-containing devices, lamps, cathode ray tubes, cathode ray tube glass, aerosol cans.*