Green Building Code Requirements For Non-Residential Construction

County of Orange

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In order to facilitate sustainable construction practices, all projects must comply with the State of California Green Building Standards Code (CGBSC) at both the design and construction phases of development. Before preparing plans for submittal, please be aware of the following information.

Site Development – CGBSC 5.106

1. Bicycle parking.
1.1. Short term parking for visitor parking: provide anchored bike racks within 100 feet of visitor entrance with a capacity of 5 percent of vehicle parking capacity with a minimum of a two-bike capacity rack.
1.2 For buildings with over 10 tenant occupants, provide secure bike parking for 5 percent of vehicle parking capacity, with a minimum of one space. Acceptable parking facilities shall be convenient from the street and may include:
1.2.1 Covered, lockable enclosures with permanently anchored bike racks.
1.2.2 Lockable bicycle rooms with permanently anchored racks.
1.2.3 Lockable bike lockers.

2. Designated parking for low-emitting, fuel efficient and carpool/van pool vehicles. Provide designated parking for any combination of low-emitting, fuel efficient and carpool/van vehicles per Table 5.106.5.2 (attached). Paint, in the paint used for stall striping, the following characters such that the lower edge of the last word aligns with the end of the stall striping and is visible beneath a parked vehicle:

Clean Air Vehicle

3. Light pollution reduction. Comply with lighting power requirements in the California Energy Code, CCR, Part 6, and design interior and exterior lighting such that zero direct-beam illumination leaves the building site. Meet or exceed exterior light levels and uniformity ratios for lighting zones 1-4 as defined in Chapter 10 of the California Administrative Code, CCR, Part 1, using the following strategies:
3.1 Shield all exterior luminaires or provide cutoff luminaires per Section 132 (b) of the California Energy Code.
3.2 Contain interior lighting within each source.
3.3 Allow no more than .01 horizontal lumen foot candles to escape 15 feet beyond the site boundary.
3.4 Automatically control exterior lighting dusk to dawn to turn off or lower light levels during inactive periods.
Exceptions:
Part 2, Chapter 12, Section 1205.6 for campus lighting requirements for parking facilities and walkways.
Emergency lighting and lighting required for nighttime security.

Indoor Water Use - CGBSC 5.303

1. Indoor water fixtures must incorporate the fixture flow rates of table 4.303.2

Fixture Type	Flow Rate
Lavatory faucets	.4 gpm@60 psi
Kitchen faucets	1.8 gpm @ 80 psi
Metering faucets	.2 gallons/cycle
Urinals	.5 gallons/flush
Water Closets (toilets)	1.28 gallons/flush
Showerheads	2 gpm @ 80 psi

Outdoor Water Use - CGBSC 5.304

1. A water budget shall be developed for landscape irrigation use that conforms to the County of Orange Water Efficient Landscape ordinance (Ordinance No. 09-010) http://www.ocplanning.net/Documents/pdf/LandscapeIrrigationCodeImplementationGuidelines.pdf, OR
2. For new water service for landscaped areas between 1000 square feet and 5000 square feet, separate meters or submeters shall be installed for indoor and outdoor potable water use.
3. In new construction with between 1000 and 2500 square feet of landscaped area, install irrigation controllers and sensors which include the following criteria, and meet manufacturer's recommendations:
3.1 Controllers shall be weather- or soil moisture-based controllers that automatically adjust irrigation in response to changes in plants' needs as weather conditions change.
3.2 Weather-based controllers without integral rain sensors or communication systems that account for local rainfall shall have a separate wired or wireless rain sensor which connects or communicates with the controller(s). Soil moisture-based controllers are not required to have rain sensor input.

Construction Waste Reduction – CGBSC 5.408

1. A construction waste management plan shall be submitted at plan check.
1.1 Identifies the materials to be diverted from disposal by recycling, reuse on the project, or salvage for future use or sale.
1.2 Specify if materials will be sorted on-site or mixed for transportation to a diversion facility.
1.3 Identifies the diversion facility where the material collected will be taken.
1.4 Specifies that the amount of materials diverted shall be calculated by weight or volume, but not by both.
2. Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris. Amount to be calculated by weight or volume. Forms are available for documenting waste reduction. 100% of trees, stumps, rocks, vegetation, and soils from land clearing shall be reused or recycled.

Building Maintenance and Operation – CGBSC 5.410

1. Provide areas that serve the entire building for collection of non-hazardous materials for recycling.
2. New buildings over 10,000 square feet in area must comply with Sections 5.410.2 through 5.410.2.6 of the California Green Building Standards Code. The final commissioning report required by Section 5.410.2.6 must be provided to the building owner and to the City's Building Division prior to Certificate of Occupancy.

3. New buildings under 10,000 square feet in area
3.1 Systems. Develop a written plan of procedures for testing and adjusting systems. Systems to be included are:
3.1.1 HVAC systems and controls
3.1.2 Indoor and outdoor lighting and controls
3.1.3 Water heating systems
3.1.4 Renewable energy systems
3.1.5 Landscape irrigation systems
3.1.6 Water reuse systems
3.2 Perform testing and adjusting procedures in accordance with industry practices and applicable standards on each system.
3.3 The system must be balanced in accordance with procedures defined by approved national standards. After completion of testing, adjusting and balancing, a final report of testing signed by the testing agency must be completed.
3.4 An operation and maintenance manual with operating and maintenance instructions and copies of warranties for each system in the building must be provided to the building owner.
3.5 All inspection reports and certification that the operation and maintenance manual has been provided for the building owner must be submitted to the Building Division prior to Certificate of Occupancy.

Fireplaces – CGBSC 5.503

1. Fireplaces must be of the direct-vent sealed-combustion chamber type.

Pollution Control – CGBSC 5.504

1. All duct and related distribution component openings must be covered with tape or other approved means to prevent dust accumulation.
2. Adhesives, sealants, and caulks must be meet minimum VOC limits (see VOC Limits Handout).
3. Paints and coatings must meet minimum VOC limits (see VOC Limits Handout).
4. Aerosol Paints and coatings shall meet the Product-Weighted MIR Limits for ROC in Section 94522(a)(3) and other requirements, including prohibitions on use of certain toxic compounds and ozone depleting substances, in Sections 94522(c)(2) and (d)(2) of California Code of Regulations, Title 17, commencing with Section 94520.
5. All carpet installed in the building interior shall meet the testing and product requirements of one of the following:
5.1 Carpet and Rug Institute's Green Label Plus Program.
5.2 California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350).
5.3 NSF/ANSI 140 at the Gold Level.
5.4 Scientific Certifications Systems Indoor Advantage Gold.
6. All carpet cushion installed in the building interior shall meet the requirements of the Carpet and Rug Institute Green Label program.
7. All carpet adhesive shall meet minimum VOC limits (see VOC Limits Handout).
8. Where resilient flooring is installed, at least 50 percent of floor area receiving resilient flooring shall comply with the VOC emission limits defined in Collaborative for High Performance Schools (CHPS) Low-emitting Materials List or certified under the Resilient Floor Covering Institute (RCFI) Floor Score program.
9. Hardwood plywood, particleboard and medium density fiberboard composite wood products used on the interior or exterior of the building shall meet the requirements for formaldehyde as specified in ARB's

Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections, as shown in Table 4.504.5

FORMALDEHYDE LIMITS IN PARTS PER MILLION

Product	Current Limit	January 1, 2012	July 1, 2012
Hardwood ply veneer core	.05		
Hardwood ply composite core	.08		.05
Particleboard	.09		
Medium Density Fiberboard	.11		
Thin med. density fiberboard	.21	.13	

10. Filters in outside and return air paths must provide Minimum Efficiency Reporting Value (MERV) of 8.
11. Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings. Post signage to inform building occupants of the prohibitions.
12. Documentation for the items listed above must be made available to your inspector upon request.

Environmental Comfort – CGBSC 5.507

1. Building assemblies and components must have Sound Transmission
Coefficient (STC) values as determined in accordance with ASTM E90 and ASTM
2. E413 where required below
2.1 Exterior noise transmission. Wall and roof-ceiling assemblies making up the building envelope have an STC of at least 50, and exterior windows have a minimum STC of 30 where sound levels at the property line regularly exceed 65 decibels.
Exception: Buildings with few or no occupants and where occupants are not likely to be affected by exterior noise, such as factories, storage, parking, and utility buildings.
2.2 Interior sound. Wall and floor-ceiling assemblies tenant spaces and tenant spaces and public places shall have an STC of at least 40.

Outdoor Air Quality 5.508

1. Installations of HVAC, refrigeration and fire suppression equipment must comply with below.
1.1 Chlorofluorocarbons (CFCs). CFCs have not been used for HVAC equipment.
1.2 Halons have not been installed in HVAC, refrigeration, or fire suppression systems.