

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

Introduction

In January 2010, California adopted the first statewide mandatory green building code in the country. In January 2011, the California Green Building Standards Code (or CALGreen) will go into effect. The new code establishes minimum green building standards for most new construction projects.

Purpose

The purpose of this document is to provide users a quick reference between CALGreen and the rating systems used in LEED for Building Design and Construction. This document does not provide extensive analysis of the similarities or differences between the rating systems or CALGreen. For full information on CALGreen see: www.bsc.ca.gov/CALGreen, for more information on LEED see: www.usgbc.org.

Verification

CALGreen is part of the California Building Standards Code and is enforced by local jurisdictions and building officials (see CALGreen Chapter 1). LEED is a voluntary rating system that is interpreted by its author, the U.S. Green Building Council, and applications are reviewed by the Green Building Certification Institute. Some California local jurisdictions have local ordinances that require use of LEED for some commercial buildings.

Legend & Notes

CALGreen		Note	LEED		Note
Black	Mandatory Measure	This will be required in all jurisdictions.	Prerequisite	A project must meet all LEED prerequisites to qualify for any level of LEED certification.	
Blue	Tier 1 & 2 Prerequisite	If a Tier is adopted, this will be a mandatory measure in that jurisdiction.	n/a		
Green	Elective Measure	If a Tier is adopted, a set number of elective measures must be met, but the choice of measures is up to the applicant. Separately, local jurisdictions may make specific elective measures mandatory at their discretion. Tier requirements and the full text of CALGreen measures can be found on the Building Standards Commission website.	Credit	Different LEED measures are worth varying numbers of LEED points. Higher point totals are required to meet Silver, Gold and Platinum levels of certification. LEED credits are described in the LEED reference guide.	
"Earns Credit / Points in LEED"		Indicates if meeting the required CALGreen measure also meets a prerequisite or earns point(s) for the related measure in LEED. "Maybe" indicates that the CALGreen measure meets part but not all of the comparable LEED prerequisite or credit. key: n/a = not applicable, Yes Maybe No	"Meets CALGreen"		Indicates whether completing the GPF prerequisite or point meets the requirements of the related CALGreen measure. "Maybe" indicates that the LEED measure meets part but not all of the comparable CALGreen measure. key: n/a = not applicable, Yes Maybe No

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009 version 1.0, September 1, 2010

CALGreen Non-residential Building Code			Earns LEED Credit/Pts	LEED Building Design & Construction 2009 Rating System			Meets CALGreen
CALGreen Section	CALGreen Requirements Summary			LEED Credit	LEED Requirements Summary		
Mandatory measures							
5.1 Planning and Design							
5.106.1	Storm water pollution prevention (SWPP) plan	All projects must have a SWPPP plan that meets State National Pollution Discharge Elimination System (NPDES).	Y	SSp1 Construction Activity Pollution Prevention	Prerequisite: All projects must have a SWPPP plan that meets State NPDES.		Y
5.106.4	Bicycle parking	Provide bike racks for 5% of projected visitors within 200' of building entrance and secure bicycle parking for 5% of motorized parking capacity.	N	SS 4.2 Bicycle Storage & Changing Rooms	Provide bike parking for 5% of all building users within 200 yards of building entrance, plus showers and changing rooms for 0.5% of FTE's.		M
5.106.5	Designated parking	Provide stall marking for low-emitting, fuel efficient, and carpool/van pool vehicles; approximately 8% of total spaces.	M	SS 4.3 Low Emitting & Fuel Efficient Vehicles	Provide preferred parking and signage for low-emitting vehicles for 5% of spaces; alternately provide alternative-fuel stations, vehicles, or vehicle-sharing.		N
5.106.8	Light pollution reduction	Exterior lighting power density limited by exterior lighting zone to California Energy Code limits. Contain lighting within each source. No more than .01 horizontal footcandles 15 beyond site.	N	SS 8 Light Pollution Reduction	Interior lighting automatic reduction / shut-off overnight; exterior lighting power density limited by exterior lighting zone to IESNA 90.1-2007 limits. Horizontal & vertical footcandle limits at property line.		Y
5.106.10	Grading and paving	Grading and paving must keep surface water from entering buildings, and be shown on plans.	n/a	none		n/a	
5.2 Energy Efficiency							
5.201	Energy efficiency (minimum standard)	Meet California Energy Code (Title 24, Part 6-2008).	N	EAp2 Minimum Energy Performance	Prerequisite: Minimum 10% reduction compared to Title 24-2005, Title-24-2008, or ASHRAE 90.1-2007.		Y

CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

version 1.0, September 1, 2010

CALGreen Non-residential Building Code			Earns LEED Credit/Pts	LEED Building Design & Construction 2009 Rating System			Meets CALGreen
CALGreen Section	CALGreen Requirements Summary			LEED Credit	LEED Requirements Summary		
5.3	Water Efficiency and Conservation			Water Efficiency			
5.303.1.1	Water meters: buildings over 50,000 sq. ft.	Separate submeters required for individual tenant spaces projected to consume more than 100 gal/day.	n/a	none			n/a
5.303.1.2	Water meters: excess consumption	Submeter buildings or individual tenant spaces projected to consume more than 1,000 gal/day.	n/a	none			n/a
5.303.2	Indoor water use: 20% savings	Reduce overall use of potable water within the building by 20% for showerheads, lavatories, kitchen faucets, wash fountains, water closets, and urinals.	M	WEp1	Water Use Reduction	Prerequisite: Minimum 20% water use reduction for lavatories, kitchen faucets, water closets, urinals, pre-rinse spray valves, and residential showers.	M
5.303.2.1	Multiple showerheads serving one shower	Multiple showerheads in any single shower shall equal the maximum flow rate of a single showerhead.	Y	WE p1	Water Use Reduction	Water use of a residential shower compartment is measured in total for each 2500 sq. in. of floor area.	M
5.303.4	Wastewater reduction	Reduce generation of wastewater by 20% through installation of water-conserving fixtures meeting the criteria established in 5.303.2 or utilizing non-potable water systems.	N	WE 2	Innovative Wastewater Technologies	Reduce generation of wastewater by 50% or provide on-site wastewater treatment to tertiary standards.	Y
5.303.6	Plumbing fixture standards	High-efficiency fixtures and fittings must meet specific referenced standards.	n/a	none			n/a
5.304.1	Outdoor water use: Water budget	Water consumption in landscape irrigation must meet local water efficient landscape ordinance or CA Model Water Efficient Landscape Ordinance (30% reduction in ETo times landscape area).	N	WE 1	Water Efficient Landscaping	50% reduction compared to average water use for irrigation.	Y
5.304.2	Outdoor potable water use	Submeter landscaping separately where landscaping covers 1,000-5,000 sq. ft. (over 5,000 sq. ft. already required.)	n/a	none			n/a
5.304.3	Irrigation controllers	Provide weather or soil moisture based controllers that automatically adjust in response to plants' needs as weather conditions change.	M	Smart controllers would contribute to WE 1.			M
5.4	Material Conservation and Resource Efficiency			Materials & Resources			
5.407.1	Weather protection	Protect building envelope from irrigation sprinkler spray; weather protect entries and openings.	n/a	none			n/a
5.407.2	Moisture control	Prevent irrigation spray on structures and design entries and openings to prevent water intrusion.	n/a	none			n/a
5.408.1-2	Construction waste diversion and management plan	Establish a construction waste management plan or meet local ordinance, whichever is more stringent.	M	MR 2	Construction Waste Management	Develop and implement a construction waste management plan that identifies the materials to be diverted from disposal and how.	M
5.408.3	Construction waste reduction, disposal and recycling	Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris.	Y	MR 2	Construction Waste Management	Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris.	Y
5.408.4	Excavated soil and land clearing debris	100% of trees, stumps, rocks and associated vegetation and soils to be reused or recycled.	n/a	none	Soil and land clearing debris not counted in LEED MR 2 calculation		N
5.410.1	Recycling by occupants	Provide areas for the depositing, storage, and collection of non-hazardous materials for recycling.	Y	MRp1	Storage Collection of Recyclables	Prerequisite: Provide areas for the depositing, storage, and collection of non-hazardous materials for recycling.	Y
5.410.2	Commissioning	For new buildings 10,000 square feet and over, building commissioning shall be included in the design and construction of the building project to verify that the building systems and components meet the owner's project requirements.	M	EAp1	Fundamental Commissioning	Prerequisite: Verify that the project's energy-related systems are installed, calibrated, and perform according to the owner's project requirements, basis of design, and construction documents. Commissioning agent must be independent of design team.	Y
5.410.3	Testing and adjusting	Testing and adjusting of systems shall be required for buildings less than 10,000 square feet.	N	EAp1	Fundamental Commissioning	Prerequisite: Fundamental Commissioning is required for all projects, regardless of size.	Y



CALGreen Non-residential Building Code			Earns LEED Credit/Pts	LEED Building Design & Construction 2009 Rating System			Meets CALGreen
CALGreen Section	CALGreen Requirements Summary			LEED Credit	LEED Requirements Summary		
5.5 Environmental Quality				Indoor Environmental Quality			
5.503.1 Fireplaces and woodstoves	Install only direct-vent or sealed-combustion appliances; comply with US EPA Phase II limits.		n/a	none			n/a
5.504.3 Covering of duct openings and protection of mechanical equipment during construction	Cover duct openings and protect mechanical equipment during construction.		M	EQ 3.1 Construction Indoor Air Quality Management Plan	Meet SMACNA guidelines for Occupied Buildings Under Construction, protect materials from moisture damage, protect return air grills.		Y
5.504.4.1 Finish material pollutant control: Adhesives, sealants, and caulks	Comply with VOC limits in SCAQMD Rule 1168 VOC limits and California Code of Regulations Title 17 for aerosol adhesives.		Y	EQ 4.1 Low-Emitting Materials: Adhesives and Sealants	Adhesives and Sealants meet SCAQMD Rule 1168 VOC limits, aerosol adhesives meet Green Seal standard GS-36.		Y
5.504.4.3 Finish material pollutant control: Paints and coatings	Comply with VOC limits in the Air Resources Board Architectural Coatings Suggested Control Measure and California Code of Regulations Title 17 for aerosol paints.		Y	EQ 4.2 Low-Emitting Materials: Paints and Coatings	Architectural paints and coatings meet Green Seal standard GS-11, anti-corrosive paints meet Green Seal standard GC-03, other coatings meet VOC limits in SCAQMD Rule 1113.		M
5.504.4.4 Finish material pollutant control: Carpet systems	Carpet shall meet the requirements of one of the following: 1. Carpet and Rug Institute's Green Label Plus Program 2. California Department of Public Health Standard Practice for the testing of VOCs (Specification 01350) 3. NSF/ANSI 140 at the Gold level 4. Scientific Certifications Systems Sustainable Choice Carpet cushion shall be CRI Green Label. Carpet adhesive shall meet a VOC limit of 50 g/L.		M	EQ 4.3 Low-Emitting Materials: Flooring Systems	All carpet installed must meet Carpet and Rug Institute's Green Label Plus program. Carpet cushion shall meet the requirements of the Carpet and Rug Institute Green Label program. Carpet adhesive shall meet the requirements of EQ 4.1.		Y
5.504.4.5 Composite wood products	Meet CARB Air Toxics Control Measure for Composite Wood.		M	EQ 4.4 Low-Emitting Materials: Composite Wood	Composite wood and agrifiber products must contain no added urea-formaldehyde resins.		Y
5.504.4.6 Finish material pollutant control: Resilient flooring systems	For 50% of floor area receiving resilient flooring, install resilient flooring complying with the VOC-emission limits defined in the 2009 Collaborative for High Performance Schools (CHPS) criteria or certified under the Resilient Floor Covering Institute (RFCI) FloorScore program.		N	EQ 4.3 Low-Emitting Materials: Flooring Systems	All hard surface flooring (vinyl, linoleum, laminate, wood, ceramic, and/or rubber) must be FloorScore certified.		Y
5.504.5.3 Filters	In mechanically ventilated buildings, provide regularly occupied areas of the building with air filtration media for outside and return air prior to occupancy that provides at least a Minimum Efficiency Reporting Value (MERV) of 8.		N	EQ 5 Indoor Chemical and Pollutant source Control	In mechanically ventilated buildings, provide MERV 13 filters; employ walk-off mats or grills at least ten feet long at regularly used building entrances; exhaust spaces where hazardous gases or chemicals may be present; provide containment where chemical concentrate mixing occurs.		Y
5.504.7 Environmental tobacco smoke (ETS) control	Where outdoor areas are provided for smoking, prohibit smoking within 25 feet of building entries, outdoor air intakes and operable windows and in buildings.		M	EQp2 Environmental Tobacco Smoke (ETS) control	Prerequisite: Prohibit on-property smoking within 25 feet of entries, outdoor air intakes and operable windows. All buildings must be non-smoking or provided designated smoking areas.		Y
5.505.1 Indoor moisture control	Meet or exceed Ventilation and Exterior Wall requirements in California Building Code.		n/a	none			n/a
5.506.1 Outside air delivery	Meet Ventilation requirements in California Energy Code or local code, whichever is more stringent.		Y	EQp1 Minimum Indoor Air Quality Performance	Prerequisite: Meet requirements of ASHRAE standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality.		Y
5.506.2 Carbon dioxide monitoring	For buildings with demand control ventilation, install systems in accordance with California Energy Code.		N	EQ 1 Outdoor Air Delivery Monitoring	Monitor CO2 concentrations within all densely occupied spaces; provide a direct airflow measurement device for mechanical ventilation systems serving non-densely occupied spaces.		M

CALGreen Non-residential Building Code		Earns LEED Credit/Pts
CALGreen Section	CALGreen Requirements Summary	
5.507.4 Acoustical control	Employ building assemblies and components with Sound Transmission Coefficient (STC) values determined in accordance with ASTM E90 and ASTM E413.	n/a
5.507.4.1 Exterior noise transmission	Wall and roof-ceiling assemblies shall have an STC of at least 50, and exterior windows shall have a minimum STC of 30 for noisy building locations.	n/a
5.507.4.2 Interior sound	Wall and floor-ceiling assemblies separating tenant spaces and tenant spaces and public places shall have an STC of at least 40.	n/a
5.508.1 Ozone depletion and greenhouse gas reductions	Do not install equipment that contains CFCs or Halons.	Y N

LEED Building Design & Construction 2009 Rating System		Meets CALGreen
LEED Credit	LEED Requirements Summary	
none		n/a
none		n/a
none		n/a
EAp3 EA 4 Refrigerant Management Enhanced Refrigerant Management	Prerequisite: Do not install equipment with CFCs. Credit: do not install equipment that contains Halons, HFCs & HCFCs based on combined ozone-depletion and global-warming potential.	M Y

Tier 1 additional prerequisites		
5.1 Planning and Design - all measures below plus one elective		
A5.106.5.1.1 Designated parking	Tier 1: Provide stall marking for 10% of total spaces.	M
A5.106.11.2.1 Cool roof	Tier 1: Use roofing material with minimum solar reflectance index (SRI) of between 10-64 depending on climate zone & roof slope.	N
5.2 Energy Efficiency - all measures below		
A5.601.2.2 Energy Efficiency: Performance Approach	Tier 1: 15% reduction compared to Title 24, Part 6-2008.	Y
5.3 Water Efficiency and Conservation - all measures below plus one elective		
A5.303.2.3.1 Indoor water use	Tier 1: 30% reduction in potable water consumption.	Y
A5.304.4.1 Potable water reduction	Tier 1: 40% reduction in landscape water use.	N
5.4 Material Conservation - all measures below plus one elective		
A5.405.4 Recycled content	Tier 1: 10% of total materials cost.	Y
A5.408.3.1 Enhanced construction waste reduction	Tier 1: 65% diversion rate.	N
5.5 Environmental Quality - all measures below plus one elective		
A5.504.4.7 Resilient flooring systems	Tier 1: 80% of resilient flooring FloorScore certified.	N
A5.504.4.8 Thermal insulation	Tier 1: Comply with VOC limits in 2009 CHPS criteria.	n/a

Comparable LEED credits		
Sustainable Sites		
SS 4.3 Low Emitting Vehicles	Provide preferred parking for 5% of spaces.	N
SS 7.2 Heat Island Effect: Roof	Use roofing material with minimum SRI 29 steep slope, 78 low slope, or use vegetated roof.	M
Energy and Atmosphere		
EA 1 Optimize Energy Performance	15% reduction compared to Title 24-2005, Title 24-2008, or ASHRAE.	M
Water Efficiency		
WE 3 Water Use Reduction	30% reduction in potable water consumption.	Y
WE 1 Water Efficient Ldscp	50% reduction in landscape water use.	Y
Materials and Resources		
MR 4 Recycled content	10% of total materials cost.	Y
MR 2 Construction Waste Management	75% diversion rate.	Y
Indoor Environmental Quality		
EQ 4.3 Flooring Systems	All hard surface flooring must be FloorScore certified.	Y
none		n/a

Tier 2 additional prerequisites (Tier 1 prerequisites also apply)		
5.1 Planning and Design - all measures below plus three electives		
A5.106.5.1.2 Designated parking	Tier 2: Provide stall marking for 12% of total spaces.	N
A5.106.11.2.2 Cool roof	Tier 2: Minimum SRI 20 steep slope, 78 low slope.	Y
5.2 Energy Efficiency - all measures below		
A5.601.3.3 Energy Efficiency: Performance Approach	Tier 2: 30% reduction compared to Title 24, Part 6-2008.	Y
5.3 Water Efficiency and Conservation - all measures below plus three electives		
A5.303.2.3.2 Indoor water use	Tier 2: 35% reduction in potable water consumption.	M
A5.304.4.2 Potable water reduction	Tier 2: 45% reduction in landscape water use.	N
5.4 Material Conservation - all measures below plus three electives		
A5.405.4.1 Recycled content	Tier 2: 15% of total materials cost.	Y
A5.408.3.1 Enhanced construction waste reduction	Tier 2: 80% diversion rate.	Y
5.5 Environmental Quality - all measures below plus three electives		
A5.504.4.7.1 Resilient flooring systems	Tier 2: 90% of resilient flooring FloorScore certified.	N
A5.504.4.8.1 Thermal insulation	Tier 2: No-added formaldehyde requirement in addition to Collaborative for High Performance Schools (CHPS).	n/a

Comparable LEED credits		
SS 4.3 Low Emitting Vehicles	Provide preferred parking for 5% of spaces.	Y
SS 7.2 Heat Island Effect: Roof	Minimum SRI 29 steep slope, 78 low slope, or vegetated roof.	M
Energy and Atmosphere		
EA 1 Optimize Energy Performance	305% reduction compared to Title 24-2005, Title 24-2008, or ASHRAE.	M
Water Efficiency		
WE 3 Water Use Reduction	35% reduction in potable water consumption.	M
WE 1 Water Efficient Ldscp	50% reduction in landscape water use.	Y
Materials and Resources		
MR 4 Recycled content	10% or 20% of total materials cost.	Y
MR 2 Construction Waste Management	75% diversion rate.	N
Indoor Environmental Quality		
EQ 4.3 Flooring Systems	All hard surface flooring must be FloorScore certified.	Y
none		n/a



CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

version 1.0, September 1, 2010

CALGreen Non-residential Building Code			Earns LEED Credit/Pts	LEED Building Design & Construction 2009 Rating System			Meets CALGreen
CALGreen Section	CALGreen Requirements Summary			LEED Credit	LEED Requirements Summary		
Elective measures				Comparable LEED credits			
5.1 Planning and Design (choose one for Tier 1, three for Tier 2)				Sustainable Sites			
A5.103.1	Community connectivity	Site is within 1/2 mile of 10 basic services.	N	SS 2	Development density and community connectivity	Previously developed site and in area of 60,000 sq.ft./acre density, or within walkable 1/2 mile of residential zone and 10 basic services.	Y
A5.103.2	Brownfield or greyfield redevelopment	Site contaminated per Phase 2 Assessment, or previously developed site with 50% impervious area.	M	SS 3	Brownfield redevelopment	Site contaminated per Phase 2 Assessment.	Y
A5.104.1	Site preservation	Provide 25% more open space than required by zoning, or equal to bldg footprint, or 20% of total site.	Y	SS 5.2	Maximize open space	Provide 25% more open space than required, or equal to bldg footprint, or 20% of total site.	Y
A5.105.1.1	Reuse of existing building structure	Maintain 75% of existing structure and envelope.	Y	MR 1.1	Building reuse	Maintain 75% of existing structure and envelope.	Y
A5.105.1	Reuse of existing nonstructural elements	Maintain 50% of non-structural elements.	Y	MR 1.2	Building reuse	Maintain 50% of non-structural elements.	Y
A5.105.1	Deconstruction and salvage	Salvage items in good condition; record amount salvaged.	M		Contributes to MR 2.		N
A5.106.2.1	Storm water runoff rate and quantity	No net increase in runoff rate and quantity, or 25% decrease for sites over 50% impervious.	Y	SS 6.1	Stormwater quantity control	No net increase in runoff rate and quantity, or 25% decrease for sites over 50% impervious.	Y
A5.106.2.2	Storm water runoff quality	Treat 85th percentile 24 hour rain event with BMPs.	M	SS 6.2	Stormwater quality control	Treat 90% of average annual rainfall to remove 80% of Total Suspended Solids using BMPs.	M
A5.106.3	Low impact development	Manage 40% of average annual rainfall with LID strategies.	N	SS 6.2	Stormwater quality control	See above.	M
A5.106.4	Bicycle parking and changing rooms	Provide changing rooms with 1 shower per 200 occupants.	Y	SS 4.2	Bicycle parking	Provide bike parking for 5% of all building users, plus showers and changing rooms for 0.5% of FTE's.	M
A5.106.5.3	Electric vehicle charging	Provide capacity and conduit for future vehicle charging outlets approx. 1 per 50 parking spaces.	N	SS 4.3	Low Emitting & Fuel Efficient Vehicles	Provide charging devices for 3% of total vehicle parking capacity of the site.	Y
A5.106.6	Parking capacity	Do not exceed local zoning minimum.	Y	SS 4.4	Parking capacity	Do not exceed local zoning minimum.	Y
A5.106.7	Exterior wall shading	Shade 20% of east-, west-, and south walls to 20' or us SRI >25 for 75% of opaque area.	M		Avoided cooling load contributes to EA 1.		n/a
A5.106.9	Building orientation	Long sides face north/south; protect from wind, snow, etc.	M		Orientation contributes to EA 1.		n/a
A5.106.11.1	Heat island effect: hardscape alternatives	Shade 50% of hardscape or put 50% of parking underground.	Y	SS 7.1	Heat island effect: non-roof	Shade 50% of hardscape or put 50% of parking underground.	Y
5.2 Energy Efficiency (prescriptive approach)				Energy and Atmosphere			
A5.204.1	ENERGY STAR equipment and appliances	All equipment and appliances to be ENERGY STAR if applicable.	n/a		none		n/a
A5.204.2	Energy monitoring	Provide submetering to record data for each major energy system.	M	EA 5	Measurement & Verification	Develop an M&V plan for building operations, including instrumentation and metering equipment, and implement for at least 1 year post-occupancy.	M
A5.204.3	Demand response	Provide pre-programmed demand response strategies for HVAC systems with DDC and centralized lighting systems.	n/a		none		n/a
A5.211.1	On-site renewable energy	Generate 1% of energy on-site using renewables.	Y	EA 2	Renewable Energy	Generate 1-13% of energy on site with renewables.	Y
A5.211.3	Green power	Participate in renewable energy portfolio program of local utility, if available, that provides minimum 50% renewable power.	N	EA 6	Green power	Purchase Green-e certified renewable energy certificates for 35% of total energy demand.	N
A5.212.1	Reduce energy demand of elevator and escalators	Provide controls to reduce energy demand during part of the day or when no traffic is detected.	n/a		none		n/a
A5.213.1	Steel framing	Design steel framing to avoiding thermal bridging.	n/a		none		n/a
5.3 Water Efficiency and Conservation (choose one for Tier 1, three for Tier 3)				Water Efficiency			
A5.303.2.2	Indoor water use	Voluntary - 40% reduction in potable water consumption.	M	WE 3	Water Use Reduction	40% reduction in potable water consumption.	Y
A5.304.4.4	Potable water reduction	Voluntary - 50% reduction in landscape water use.	Y	WE 1	Water Efficient Ldscp	50% reduction in landscape water use.	Y
A5.304.5	Potable water reduction	Voluntary -Outdoor potable water use elimination.	Y	WE 1	Water Efficient Ldscp	100% reduction in landscape water use.	Y
A5.303.3	Water efficient appliances	Various standards for clothes washers, dishwashers, ice makers, food steamers.	n/a		none		n/a
A.5.303.5	Dual plumbing for recycled water use for toilet flushing	Applicable when recycled water is available.	M		Recycled water use would contribute to WE 3.		n/a
A5.304.6	Construction area restoration	Replant all disturbed landscape areas w/ native plants.	n/a		Native plants would contribute to SS 5.1.		n/a
A5.304.7	Previously developed sites	Restore 50% of previously developed site with native vegetation.	Y	SS 5.1	Protect habitat	Restore greater of 50% of previously developed site or 20% of total site with native vegetation.	Y
A5.304.8	Graywater irrigation system	Graywater system for onsite subsurface irrigation collected from bathtubs, showers, bathroom sinks, and laundry.	M	WE 2	Innovative Wastewater Technologies	Reduce generation of wastewater by 50% or provide on site wastewater treatment to tertiary standards.	M



CALGreen Non-Residential comparison to LEED for Building Design & Construction 2009

version 1.0, September 1, 2010

CALGreen Non-residential Building Code			Earns LEED Credit/Pts	LEED Building Design & Construction 2009 Rating System			Meets CALGreen
CALGreen Section	CALGreen Requirements Summary			LEED Credit	LEED Requirements Summary		
5.4	Material Conservation (choose one for Tier 1, three for Tier 2)			Materials & Resources			
A5.404.1	Advanced wood framing techniques	Use advanced wood framing techniques (must maintain structural and fire resistive integrity).	n/a	none			n/a
A5.405.1	Regional materials	10% of total materials cost harvested or manufactured in California or within 500 miles of project site.	M	MR 5	Regional materials	10% of total materials cost harvested and manufactured within 500 miles of project site.	Y
A5.405.2.1	Certified wood	Standard in development.	M	MR 7	Certified Wood	FSC-certified wood is 50% of total wood cost.	M
A5.405.2.2	Rapidly renewable materials	Materials from plants with a maximum ten-year harvest cycle are 2.5% of total materials cost.	Y	MR 6	Rapidly renewable materials	Materials from plants with a maximum ten-year harvest cycle are 2.5% of total materials cost.	Y
A5.405.3	Reused materials	Salvaged, refurbished, refinished, or reused material is 5% of total materials cost.	Y	MR 3	Reused materials	Salvaged, refurbished, or reused materials are 5% of total materials cost.	Y
A5.405.5	Cement and concrete	Use cement and concrete made with recycled products and/or alternative sources of energy.	n/a	Recycled content would contribute to MR 4.			n/a
A5.406.1	Choice of materials	If comparable, select materials for longevity, reduced maintenance, and recyclability.	n/a	none			n/a
A5.409.1	Life cycle assessment	Select materials assemblies based on life cycle assessment.	n/a	none			n/a
5.5	Environmental Quality (choose one for Tier 1, three for Tier 2)			Indoor Environmental Quality			
A5.504.1.1	Indoor air quality during construction: temporary ventilation	Use fans in openings in building shell producing a minimum of 3 ACH; protect HVAC openings from dust; use MERV 8 filters on return air grills; meet SMACNA Guidelines for Occupied Buildings Under Construction.	Y	EQ 3.1	Construction Indoor Air Quality Management Plan: During Construction	Meet SMACNA guidelines for Occupied Buildings Under Construction, protect materials from moisture damage, protect return air grills.	N
A5.504.1.2	Indoor air quality during construction: additional measures	Use clean temporary generators; protect on-site materials from moisture; store odorless materials off-site and allow VOCs to disperse; sequence installation of high-VOC materials before absorbent materials; clean oil and dust from ducts prior to use.	M	EQ 3.1	Construction Indoor Air Quality Management Plan: During Construction	Meet SMACNA guidelines for Occupied Buildings Under Construction, protect materials from moisture damage, protect return air grills.	N
A5.504.2	Post construction air flush-out	Supply continuous ventilation with all air handling units at maximum outdoor air rate for at least 14 days; occupancy may start after 4 days.	M	EQ 3.2	Construction Indoor Air Quality Management Plan: Before Occupancy	After construction ends, supply a total volume of outdoor air of 14,000 cubic feet per square foot of floor area; occupancy may start after the first 3,500 cubic feet are delivered.	M
A5.504.2.1	IAQ testing	Using test protocols recognized by US EPA, maximum concentrations shall not exceed 9 ppm CO ₂ ; 27 ppb Formaldehyde; 50 ug/m ³ PM ₁₀ ; 6.5 ug/m ³ 4-PCH; 300 ug/m ³ TVOC.	Y	EQ 3.2	Construction Indoor Air Quality Management Plan: Before Occupancy	Conduct baseline IAQ testing using protocols consistent with the US EPA, maximum concentrations shall not exceed 9 ppm CO ₂ ; 27 ppb Formaldehyde; 50 ug/m ³ PM ₁₀ ; 6.5 ug/m ³ 4-PCH; 500 ug/m ³ TVOC.	M
A5.504.4.5.1	Early compliance with formaldehyde limits	Meet requirements before dates required by CARB.	M	EQ 4.4	Low-Emitting Materials: Composite Wood	Composite wood and agrifiber products must contain no added urea-formaldehyde resins.	Y
A5.504.4.9	Acoustical ceiling and wall panels	Comply with the VOC-emission limits defined in the 2009 CHPS criteria.	M	EQ 4.6	Low-Emitting Materials: Ceiling and Wall Panels (Schools only)	All gypsum board, insulation, acoustical ceiling systems and wall coverings must meet the requirements of California Department of Health Services Standard Practice for the Testing of Volatile Organic Emissions.	Y
A5.504.5.1	Entryway systems	Install permanent entryway systems measuring at least six feet in the primary direction of travel.	N	EQ 5	Indoor Chemical and Pollutant Source Control	Among other criteria, employ walk-off mats or grills at least ten feet long at regularly used building entrances.	Y
A5.504.5.2	Isolation of pollutant sources	Exhaust and isolate rooms where activities produce hazardous fumes or chemicals.	M	EQ 5	Indoor Chemical and Pollutant Source Control	Among other criteria, exhaust spaces where hazardous gases or chemicals may be present.	Y
A5.507.1	Lighting controls	Provide task lighting for 90% of building occupants.	Y	EQ 6.1	Controllability of Systems: Lighting	Provide task lighting for 90% of building occupants.	Y
A5.505.1.1.2	Thermal comfort controls	Provide individual thermal comfort controls for at least 50% of building occupants.	Y	EQ 6.2	Controllability of Systems: Thermal Comfort	Provide individual thermal comfort controls for at least 50% of building occupants.	Y
A5.507.1.2	Multi-occupant space lighting and thermal comfort controls	Provide lighting and thermal comfort controls systems for all shared multi-occupant spaces.	Y	EQ 6.1 & 6.2	Controllability of Systems	Provide lighting and thermal comfort controls systems for all shared multi-occupant spaces.	Y
A5.507.2	Daylight	Provide daylit spaces as required for toplighting and sidelighting in the 2007 California Energy Code.	M	EQ 8.1	Daylight and Views: Daylight	At least 75% of spaces achieve daylighting illuminance levels of 25-500 footcandles in clear sky conditions.	Y
A5.507.3	Views	Achieve direct line of sight to the outdoor environment for 90% of all regularly occupied spaces.	Y	EQ 8.2	Daylight and Views: Views	Achieve direct line of sight to the outdoor environment for 90% of all regularly occupied spaces.	Y
A5.508.1.3	HCFCs and HFCs in refrigeration equipment	Install equipment without HCFCs and HFCs.	Y	EA 4	Enhanced Refrigerant Management	Limit use of HFCs & HCFCs based on combined ozone-depletion and global-warming potential.	M



CALGreen Non-residential Building Code		Earns LEED Credit/Pts
CALGreen Section	CALGreen Requirements Summary	

Note: this column is intentionally left blank as there are no CALGreen measures comparable to the remaining LEED measures listed here.

LEED Building Design & Construction 2009 Rating System		Meets CALGreen
LEED Credit	LEED Requirements Summary	
Additional LEED credits not in CALGreen		
Sustainable Sites		
SS 1	Site selection	Avoid sensitive sites, e.g. farmland, flood plain.
SS 4.1	Public transportation access	Locate within 1/2 mile of rail or 1/4 mile of bus lines.
Energy & Atmosphere		
EA 1	Optimize Energy Performance	48% reduction (maximum points).
Materials & Resources		
EA 3	Enhanced commissioning	In addition to EAp1, Commissioning Agent must be independent of design team and has larger scope.
Indoor Environmental Quality		
EQ 2	Increased ventilation	Increase outdoor air ventilation rates at least 30% above the minimum in ASHRAE 62.1-2007.
EQ 7.1	Thermal comfort - design	Meet ASHRAE standard 55-2004: Thermal Environmental Conditions for Human Occupancy.
EQ 7.2	Thermal comfort - verification	Achieve EQ 7.1 and conduct a thermal comfort survey of building occupants 6-18 months after occupancy; provide a plan for corrective action if dissatisfaction is reported.