

Santa Clara County
presents

CAL Green



Introductions

California Building Standards Commission

Jane G. Taylor

Senior Architect

The logo for CAL Green features the word "CAL" in a green, cursive script font, followed by the word "Green" in a bold, green, sans-serif font. A thick, green, horizontal brushstroke underline is positioned below the text.

CAL Green

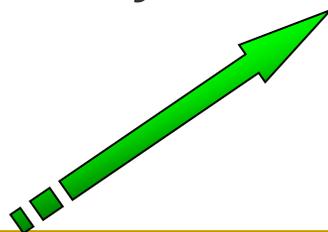
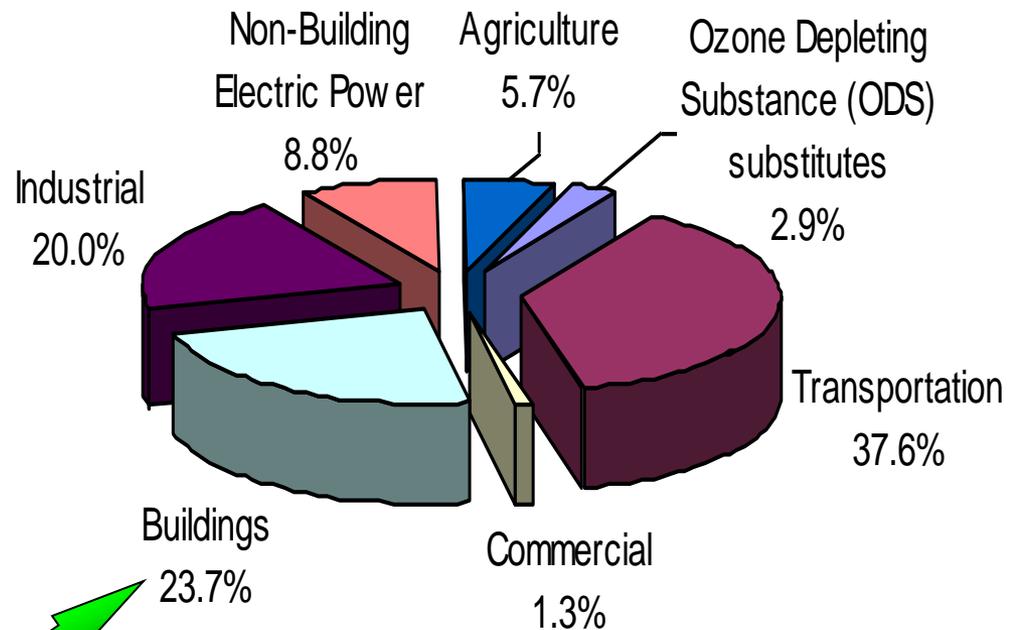
Today's Objectives

- **Why a CALGreen Code**
- **Overview of Mandatory Nonresidential Code Provisions**
- **Construction Waste Management**
 - Provisions Effective January 1, 2011
 - Modifications Effective July 1, 2012
- **Overview of voluntary Nonresidential Code Provisions – Tier 1 and Tier 2**

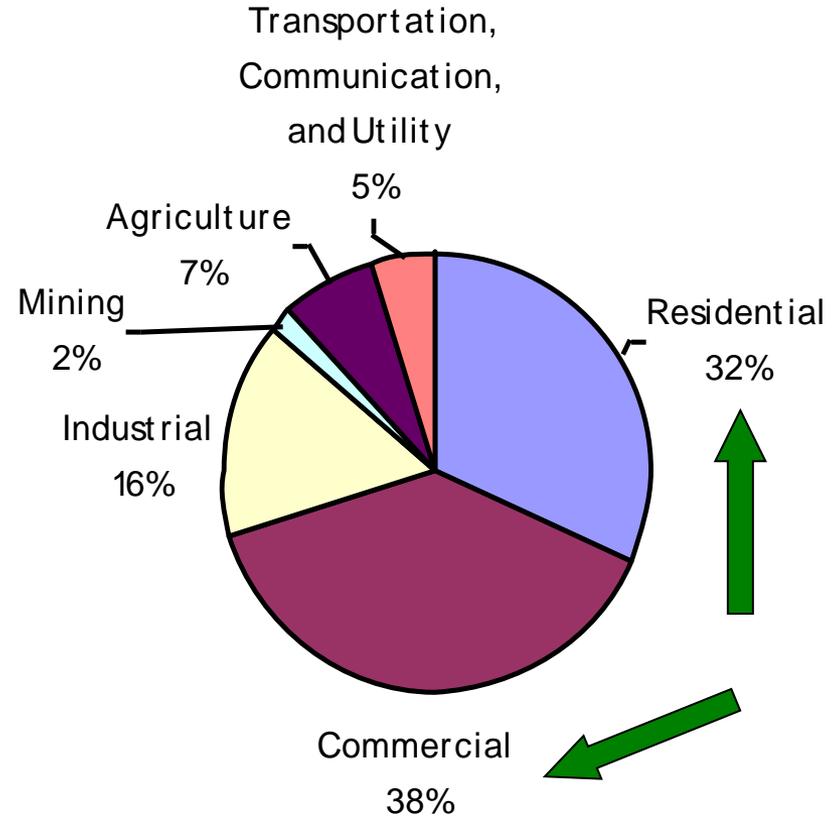
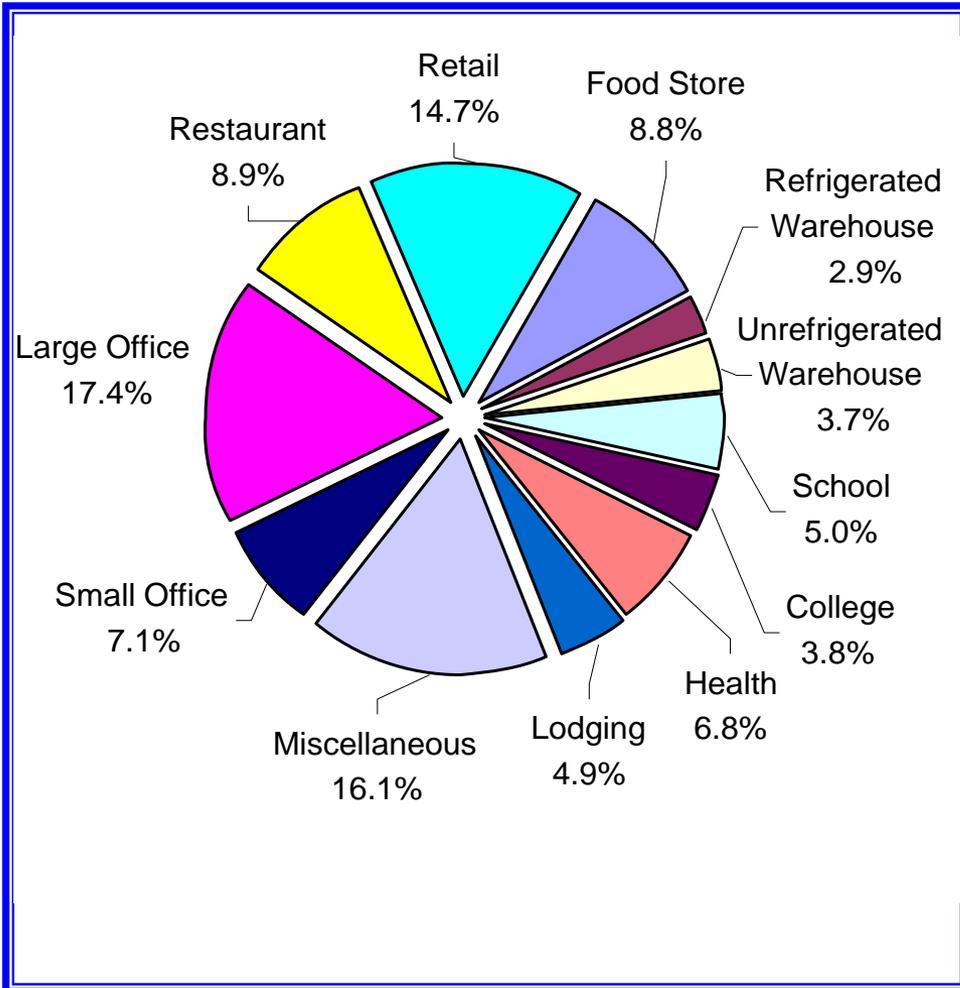
California Green Building Initiative & Global Warming Solutions Act of 2006 (EO S-20-04 & AB32)

- Buildings are 2nd largest contributor (23.7%) to GHG emissions
- EO S-20-04: Reduce grid-based electricity by 20% in state-owned buildings by 2015; reduce associated greenhouse gas emissions
- AB 32: Reduce GHG emissions to 1990 levels by 2020

California GHG Emissions



Energy Use in California



Water Use in California

Executive Order S-06-08

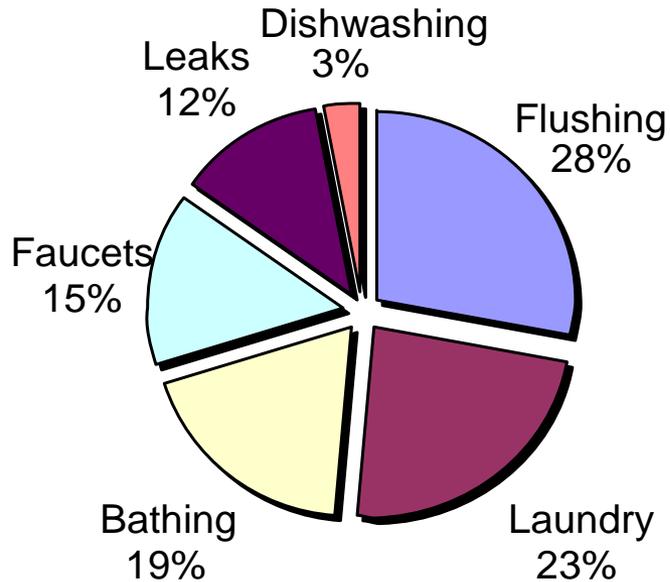
Governor's 2009 Proclamation

Water-related uses account for **19%** of California's electricity, **30%** of its natural gas and **88 billion gallons** of diesel fuel every year.

Water-efficiency measures can reduce water and sewer costs by up to **30 percent**.

Significant savings in energy, chemical and maintenance expenses typically follow.

SOURCE - USGS



Typical Residential Water Use

50 to 300 gpcd - landscape 50%

Source - Water Education Foundation

Why CALGreen

Uniformity and Consistency

- Jurisdictions adopting many different programs
- Works with other California codes
- Sustainability
- **Governor's Directive**

Adopting State Agencies

- ❑ The Department of Housing and Community Development (HCD)
- ❑ Division of the State Architect (DSA)
- ❑ Office of Statewide Health Planning and Development (OSHPD)
- ❑ California Building Standards Commission (CBSC)

California Building Standards Commission



- Independent Commission
- State and Consumer Services Agency

Contributing State Agencies

- ❑ Air Resources Board
- ❑ CalRecycle
- ❑ Department of General Services
- ❑ Department of Water Resources
- ❑ State Water Resources Control Board
- ❑ Energy Resources Conservation and Development Commission
(Energy Commission)
- ❑ Department of Public Health

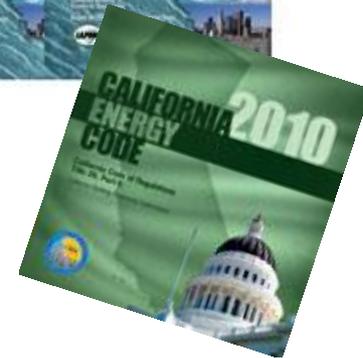
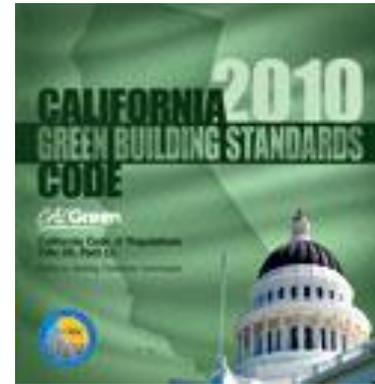
Additional resources utilized in developing California Green Building Standards Code

- ❑ Collaborative for High Performance Schools (CHPS)
- ❑ California Green Builder
- ❑ Leadership in Energy and Environmental Design (LEED)
- ❑ Green Globes
- ❑ Scottsdale Arizona Checklist
- ❑ Build It Green
- ❑ UC Berkeley Green Building Baseline
- ❑ Draft ASHRAE Standard 189P

2010 California Building Standards Code – Title 24

(effective January 1, 2011)

- ❑ Part 1 - California Administrative Code
- ❑ Part 2 - California Building Code
- ❑ Part 2.5 California Residential Code
- ❑ Part 3 - California Electrical Code
- ❑ Part 4 - California Mechanical Code
- ❑ Part 5 - California Plumbing Code
- ❑ Part 6 - California Energy Code
- ❑ *Part 7 - Vacant*
- ❑ Part 8 - California Historical Building Code
- ❑ Part 9 - California Fire Code
- ❑ Part 10 - California Existing Building Code
- ❑ **Part 11 - California Green Building Standards Code**
- ❑ Part 12 - California Referenced Standards Code



CALGreen

California Green Building Standards Code

- **Initial Voluntary Standards**
 - Effective August 1, 2009
- **City and County Adoption**
- **2010 Mandatory Standards**
 - Effective January 1, 2011
- **2010 Code Adoption Cycle**
 - Modifications effective July 1, 2012
- **Next Code Adoption Cycle**

Support for CALGreen

- Laborers International

LiUNA!

Feel the Power



California Building
Industry Association



- AIACC

- NRDC

- CAL Chamber

- EDF

- CBPA



California
Business
Properties
Association



International Council of Shopping Centers

NAIOP

COMMERCIAL REAL ESTATE
DEVELOPMENT ASSOCIATION

NAIOP OF CALIFORNIA

*CAL*Green

California Green Building Standards Code

■ Chapter 1 Administration

- Purpose (101.2)
 - Environmental impact
- Scope (101.3)
 - New construction
 - Not intended to be identified as meeting the requirements of a point rated system
- Local amendments based on findings (101.7)
 - Climate
 - Topography
 - Geology
- Alternate Materials and Methods (101.8)
- Construction Documents (102)
- Application and State Agency Authorities (103 - 106)
- Effective Use of the Code (101.11)

California Green Building Standards Code

- **Matrix Adoption Tables**
- **Chapter 2 Definitions**
 - If used in more than one location in the code a defined term will be located in Chapter 2
 - If only used in one chapter the defined term will be located in the definition section at the beginning of that chapter
 - Matrix adoption tables tell which agency adopts

California Green Building Standards Code

■ Chapter 3 Green Building

□ Scope

- Newly constructed buildings

□ Mixed Occupancy Buildings

- Shall comply with appropriate requirements for each separate occupancy type

□ Phased Projects

□ Voluntary Tiers

- *CALGreen* Tier 1 and Tier 2

California Green Building Standards Code

- **Chapter 4 Residential Mandatory Measures**
- **Chapter 5 Nonresidential Mandatory Measures**
- **Chapter 6 Reference Organizations and Standards**
- **Chapter 7 Installer and Special Inspector Qualifications**
- **Chapter 8 Compliance Forms and Worksheets**

California Green Building Standards Code

■ Chapter A4

- Residential Electives and Tiers
- Residential Checklist

■ Chapter A5

- Nonresidential Electives and Tiers
- Nonresidential Checklists
 - BSC, DSA-SS, OSHPD effective January 1, 2011
 - BSC, OSHPD effective July 1, 2012

California Building Standards Commission

Chapter 5

Nonresidential Mandatory Measures

- Planning and Design – Division 5.1
- Energy Efficiency – Division 5.2
- Water Efficiency and Conservation – Division 5.3
- Material Conservation and Resource Efficiency – Division 5.4
- Environmental Quality – Division 5.5
- Additions and Alterations – Division 5.7
 - Phased in beginning July 1, 2012

PLANNING AND DESIGN –

Chapter 5-Division 5.1

Site Development

- Stormwater soil loss prevention plan January 1, 2011
 - Stormwater pollution prevention July 1, 2012 *
- Bicycle parking *
- Designated parking for fuel-efficient vehicles *
- Light pollution reduction voluntary April 21, 2011
 - IESNA 2011 BUG ratings mandatory July 1, 2012
- Grading and paving *

* Also applies to additions and alterations

ENERGY EFFICIENCY - Chapter 5-Division 5.2

Mandatory Measures are Regulated by the California Energy Commission

- Mandatory provisions are found in Part 6 of Title 24

WATER EFFICIENCY AND CONSERVATION

Chapter 5-Division 5.3

Indoor Water Use – Minor changes from January 1, 2011 to July 1, 2012

- Separate water submeters for high water use *
- 20% reduction in indoor water use *
 - Prescriptive and performance standards *
- Referenced standards*

* Also applies to additions and alterations

WATER EFFICIENCY AND CONSERVATION

Chapter 5-Division 5.3



Outdoor Water Use – Minor changes from January 1, 2011 to July 1, 2012

- Water budget for landscapes 2,500 square feet and over *
- Irrigation design for landscapes between 1,000 to 2,500 square feet *
 - Weather or soil moisture-based irrigation controllers
- Separate submeter for outdoor potable water use for landscape areas between 1,000 & 5,000 square feet *
 - Currently required by DWR for areas over 5000 sq. ft.

* Also applies to additions and alterations

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MATERIAL CONSERVATION AND RESOURCE EFFICIENCY - Chapter 5-Division 5.4

Water Resistance and Moisture Management *

- Exterior weather protection currently in Title 24 or by local ordinance
- Design for moisture control
 - Prevent spray from sprinklers on structures
 - Prevent entries and openings from water intrusion

* Also applies to additions and alterations

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY - Chapter 5-Division 5.4

Construction Waste Reduction, Disposal and Recycling

January 1, 2011

5.408.1 Construction waste diversion. Establish a construction waste management plan for diverted materials, or meet local construction and demolition (C&D) waste management ordinance, whichever is more stringent.

July 1, 2012*

5.408. 1 Construction waste management. Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction waste in accordance with Section 5.408.1.1, 5.408.1.2 or 5.408.1.3; or meet a local C&D waste management ordinance, whichever is more stringent.

* Also applies to additions and alterations

*CAL*Green

Construction Waste Reduction, Disposal and Recycling

5.408.2 Construction waste management plan. Where a local jurisdiction does not have a C&D waste management ordinance, submit a construction waste management plan for approval by the enforcement agency that:

1. Identifies materials to be diverted from disposal and how.
2. Determines if materials will be sorted on-site or mixed.
3. Identifies diversion facilities where material collected will be taken.
4. Specifies calculation by weight or volume, but not both.

5.408.1.1 Construction waste management plan. Where a local jurisdiction does not have a C&D ordinance that is more stringent, submit a construction waste management plan that:

1. Identifies materials to be diverted from disposal and how.
2. Determines if materials will be sorted on-site or bulk mixed.
3. Identifies diversion facilities where material collected will be taken.
4. Specifies calculated by weight or volume, but not by both.

Construction Waste Reduction, Disposal and Recycling

5.408.1.2 Waste management company. Utilize a waste management company that can provide verifiable documentation that the percentage of construction waste material diverted from the landfill complies with this section.

Note: The owner or contractor shall make the determination if the construction waste material will be diverted by a waste management company.

Construction Waste Reduction, Disposal and Recycling

Exceptions follow Section 5.408.3, below.

Exceptions to 5.408.1.1 and 5.408.1.2:

1. Excavated soil and land-clearing debris
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.
3. Demolition waste meeting local ordinance or calculated in consideration of local recycling facilities and markets, where demolition of an existing structure(s) is necessary for the construction of a new structure.

Construction Waste Reduction, Disposal and Recycling

5.408.1.3 Waste stream reduction alternative. The combined weight of new construction disposal that does not exceed 2 lbs/s.f. of building area may be deemed to meet the 50% minimum requirement as approved by the enforcing agency.

Construction Waste Reduction, Disposal and Recycling

5.408.2.1 Documentation.

Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 5.408.2 items 1 thru 4. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

5.408.1.4 Documentation.

Documentation shall be provided to the enforcing agency which demonstrates compliance with Section 5.408.1.1 through 5.408.1.3. The waste management plan shall be updated as necessary and shall be accessible during construction for examination by the enforcing agency.

Construction Waste Reduction, Disposal and Recycling

5.408.2.2 Isolated jobsites. The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.

Notes:

1. Sample forms in Chapter 8 may be used to document compliance with the waste management plan.
2. Mixed C&D processors can be located at CalRecycle.

Notes:

1. Sample forms in the CBSC Guide may be used in documenting compliance with the waste management plan.
2. Mixed C&D processors can be located at CalRecycle.

5.408.2 Isolated jobsites. The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.

Construction Waste Reduction, Disposal and Recycling

5.408.3 Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction and demolition debris, or meet a local construction and demolition waste management ordinance, whichever is more stringent. Calculate the amount of materials diverted by weight or volume, but not by both.

Construction Waste Reduction, Disposal and Recycling

Exceptions:

1. Excavated soil and land-clearing debris;
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.

Exceptions follow Sections 5.408.1.1 and 5.408.1.2, above.

Construction Waste Reduction, Disposal and Recycling

5.408.4 Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

5.408.3 Excavated soil and land clearing debris. 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

Construction Waste Reduction, Disposal and Recycling

Exception (to 5.408.3): Reuse, either on-or off-site, of vegetation or soil contaminated by disease or pest infestation.

Notes:

1. If contamination by disease or pest infestation is suspected, contact the County Agricultural Commissioner and follow its direction for recycling or disposal of the material.
(www.cdfa.ca.gov/exec/county/county_contacts.html)
2. For a map of known pest and/or disease quarantine zones, consult with the California Department of Food and Agriculture (www.cdfa.ca.gov)

MATERIAL CONSERVATION AND RESOURCE EFFICIENCY - Chapter 5-Division 5.4

Building Maintenance and Operation

- Recycling by occupants*
- Building commissioning
- Testing and adjusting *
 - HVAC balancing

* Also applies to additions and alterations

ENVIRONMENTAL QUALITY –

Chapter 5-Division 5.5

- Fireplaces*
- Covering of duct openings and protection of equipment during construction *
- Finish materials*
 - Adhesives, sealants and caulks
 - Paints and coatings
 - Carpet systems
 - Composite wood products
 - Resilient floor systems
 - Filters
 - Environmental tobacco smoke

ENVIRONMENTAL QUALITY –

Chapter 5-Division 5.5

- Indoor moisture control (other codes)*
- Indoor air quality*
 - Ventilation per the energy code
 - CO₂ monitoring for demand control HVAC systems
- Acoustical control*
 - Exterior noise transmission
 - Interior sound
- Outdoor air quality – ozone depleting chemicals*

* Also applies to additions and alterations

2010 California Green Building Standards Code

NONRESIDENTIAL VOLUNTARY MEASURES

■ Appendix A5

- The measures contained in the appendix are not mandatory unless adopted by a city, county, or city and county. Appendix provisions may also be used voluntarily by designers, builders, and property owners.
- *CALGreen* Tier 1 and Tier 2 are intended for adoption by cities, counties, and cities and counties to help California meet its goals for greenhouse gas emission reduction.

NONRESIDENTIAL VOLUNTARY MEASURES

To achieve CALGreen Tier 1 or Tier 2, one must comply with the following:

- Meet all mandatory requirements;
- Exceed 2008 Energy Efficiency Standards by 15% or 30%;
- Employ additional voluntary measures in all the following areas:
 - Parking for clean air vehicles
 - Cool roofs
 - Reduction of indoor and outdoor water use
 - Construction waste diversion of 65% for Tier 1 and 80% for Tier 2
 - Use of materials with recycled content
 - Installation of low-emitting resilient flooring and thermal insulation; and

NONRESIDENTIAL VOLUNTARY MEASURES

To achieve CALGreen Tier 1 or Tier 2, one must comply with the following:

- **Comply with additional elective measures as follows:**
 - 5 electives for Tier 1
 - 15 electives for Tier 2
- **Application Checklist**
 - Mandatory provisions
 - Provisions required for compliance with tiers

Section 5.408 and A5.408

→ **5.408.3 Construction waste reduction of at least 50%.** [BSC, DSA-SS] Recycle and/or salvage for reuse a minimum of 50% of the non-hazardous construction and demolition debris, or meet a local construction and demolition waste management ordinance, whichever is more stringent. Calculate the amount of materials diverted by weight or volume, but not by both.

Exceptions:

1. Excavated soil and land-clearing debris
2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.

5.408.4 Excavated soil and land clearing debris. [BSC, DSA-SS] 100% of trees, stumps, rocks and associated vegetation and soils resulting primarily from land clearing shall be reused or recycled. For a phased project, such material may be stockpiled on site until the storage site is developed.

SECTION A5.408

CONSTRUCTION WASTE REDUCTION, DISPOSAL, AND RECYCLING

→ **A5.408.3.1 Enhanced construction waste reduction** [BSC]. Divert to recycle or salvage non-hazardous construction and demolition debris generated at the site in compliance with one of the following:

Tier 1 At least a 65% reduction.

Tier 2. At least an 80% reduction.

A5.408.3.1.1 Verification of compliance. [BSC] A copy of the completed waste management report shall be provided.

Application Checklist

DRAFT

APPLICATION CHECKLIST FOR BSC	Mandatory	Voluntary CALGreen CALGreen Tier 1 Tier 2		
CONSTRUCTION WASTE REDUCTION, DISPOSAL AND RECYCLING				
5.408.1 Construction waste diversion. Establish a construction waste management plan or meet local ordinance, whichever is more stringent.	<input checked="" type="checkbox"/>			
5.408.2 Construction waste management plan. Submit plan per this section to enforcement authority. 5.408.2.1 Documentation. Provide documentation of the waste management plan that meets the requirements listed in section 5.408.2 items 1 thru 4, and the plan is accessible to the enforcement authority. 5.408.2.2 Isolated jobsites. The enforcing agency may make exceptions to the requirements of this section when jobsites are located in areas beyond the haul boundaries of the diversion facility.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
5.408.3 Construction waste. Recycle and/or salvage for reuse a minimum of 50% of non-hazardous construction and demolition debris or meet local ordinance, whichever is more stringent. Exceptions: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working A5.408.3.1 Enhanced construction waste reduction. Divert to recycle or salvage non-hazardous construction and demolition debris generated at the site in compliance with one of the following: Tier 1. At least a 65% reduction. Tier 2. At least an 80% reduction. A5.408.3.1.1 Verification of compliance. A copy of the completed waste management report shall be provided. Exceptions: 1. Excavated soil and land-clearing debris. 2. Alternate waste reduction methods developed by working with local agencies if diversion or recycle facilities capable of compliance with this item do not exist.	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	 <input checked="" type="checkbox"/>	 <input checked="" type="checkbox"/>	



www.bsc.ca.gov

The screenshot shows the California Building Standards Commission website in a Windows Internet Explorer browser window. The browser title is "California Building Standards Commission - Windows Internet Explorer". The address bar shows "http://www.bsc.ca.gov/default.htm". The website header includes the "CA.GOV" logo, "Building Standards Commission" text, and the "DGS" logo. A search bar is located in the top right corner. The main navigation menu includes links for Home, About BSC, Calendar, Apprvd Chngs, Propstd Chngs, Processes, Questions, CCDA, and CALGreen. Below the navigation menu, there is a "What's New" section with links for Contact Us, Feedback, Related Sites, PEX Approval, Newsletter, and Statewide Initiatives & Campaigns. The main content area features a "Welcome to the California Building Standards Commission Website" heading. A notice states: "Notice: All DGS websites will be down due to building power maintenance. Friday February 18th 5:00 PM - Tuesday February 22nd 7:00 AM. We apologize for any inconvenience this may cause." Below the notice, a welcome message states: "Welcome to the California Building Standards Commission website. CBSC is responsible for administering California's building codes, including adopting, approving, publishing, and implementing codes and standards. This site provides information on:" followed by a list of featured links. The left sidebar contains a "FEATURED LINKS" section with links to DGS Home Page, Related Sites, Feedback, Contact Us, and Site Map. At the bottom of the sidebar, there is a "REPORTING TRANSPARENCY IN GOVERNMENT" logo and the "CALIFORNIA BUILDING STANDARDS COMMISSION" logo. The browser's taskbar at the bottom shows several open applications, including "CBSC Training Cal...", "Microsoft Access -...", "Fresno January", "Microsoft PowerP...", and "California Building...". The system tray shows the time as 9:13 AM.

California Building Standards Commission - Windows Internet Explorer

http://www.bsc.ca.gov/default.htm

File Edit View Favorites Tools Help

California Building Standards Commission

CA.GOV Building Standards Commission DGS

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Office of Governor Jerry Brown Visit his Website

Buildings Standards Commission Executive Director David Walls

Save money, energy and the environment. Flex your POWER

FEATURED LINKS

- DGS Home Page
- Related Sites
- Feedback
- Contact Us
- Site Map

REPORTING TRANSPARENCY IN GOVERNMENT

CALIFORNIA BUILDING STANDARDS COMMISSION

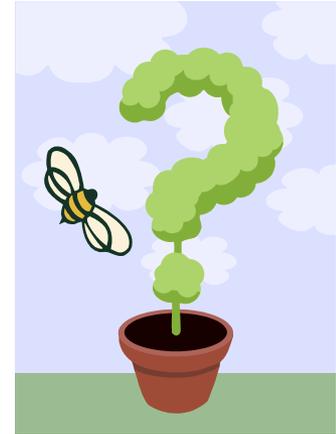
Internet 100%

9:13 AM

CALGreen

Thank you...

Any questions?



Email: cbsctraining@dgs.ca.gov

Phone: (916) 263-0916

***CAL*Green**
