



Division of the  
**State Architect**

CALIFORNIA DEPARTMENT OF GENERAL SERVICES

# 2010 *CAL* Green Code

**DOCUMENT GUIDELINES:** Recommended ways  
to comply with Mandatory Measures



# Mandatory Measures

- Some of the mandatory measures are already required by code
  - **New requirements are highlighted in green on these slides**
- Mandatory measures apply to new construction projects on:
  - New sites
  - Cleared existing sites



# DSA Mandatory Measures: Planning & Design

- Light Pollution Reduction (Title-24)
  - Interior lighting contained within task area
  - Automatically control exterior lighting dusk to dawn to turn off or lower light levels during inactive periods



# How to Comply: Light Pollution Reduction

- Photometric mapping
- Title 24 energy calculations
- Specifications for exterior luminaires
- Product specification sheets (cut sheets)



# DSA Mandatory Measures: Planning & Design

- Grading & Paving
  - The site shall be planned & developed to keep surface water from entering buildings



# How to Comply: Grading & Paving

- Site grading plans
- Storm water control plan
- Flow based or volumetric calculations
- Imperviousness site percentages
- Description of storm water mitigation
- Building sections showing overhangs



# DSA Mandatory Measures: Energy Efficiency

- Title-24, Part 6 Energy Efficiency Standards



# How to Comply: Energy Efficiency

- Title 24 energy calculations
- Specifications
- Product specification sheets (cut sheets)



# DSA Mandatory Measures: Indoor Water Use

- Reduce Indoor Water Use By 20%
  - Based on maximum allowable water use per fixture & fitting



## How to Comply: Indoor Water Use

- Plumbing Plans
- Worksheets available in Chapter 8 of Title 24, Part 11
  - Baseline vs. proposed design for water consumption
- Specifications
- Product specification sheets (cut sheets)



## Example of Worksheet in Chpt 8

WORKSHEET (WS-2)  
 20 PERCENT REDUCTION WATER USE

20 PERCENT REDUCTION WATER USE CALCULATION TABLE									
FIXTURE TYPE	FLOW RATE (gpm) <sup>2</sup>		DURATION		DAILY USES		OCCUPANTS <sup>3, 4</sup>		GALLONS PER DAY
Showerheads		×	5 min.	×	1	×		=	
Showerheads residential		×	8 min.	×	1	×		=	
Lavatory faucets residential		×	.25 min.	×	3	×		=	
Kitchen faucets		×	4 min.	×	1	×		=	
Replacement aerators		×		×		×		=	
Wash fountains		×		×		×		=	
Metering faucets		×	.25 min.	×	3	×		=	
Metering faucets for wash fountains		×	.25 min.	×		×		=	
Gravity tank type water closets		×	1 flush	×	1 male <sup>1</sup> 3 female	×		=	
HET <sup>3</sup> High-efficiency toilet	1.28	×	1 flush	×	1 male <sup>1</sup> 3 female	×		=	
Flushometer tank water closets		×	1 flush	×	1 male <sup>1</sup> 3 female	×		=	
Flushometer valve water closets		×	1 flush	×	1 male <sup>1</sup> 3 female	×		=	
Electromechanical hydraulic water closets		×	1 flush	×	1 male <sup>1</sup> 3 female	×		=	
Urinals		×	1 flush	×	2 male	×		=	
Urinals Nonwater supplied	0.0	×	1 flush	×	2 male	×		=	
Proposed water use								=	
_____ (BWU from WS-1) × .80 = _____ Allowable water use									



# DSA Mandatory Measures: Indoor Water Use

- Reduce Waste Water By 20%



## How to Comply: Waste Water Use

- Plumbing Plans
- Worksheets available in Chapter 8 of Title 24, Part 11
  - Baseline vs. proposed sewage conveyance design
- Specifications of fixtures
- Product specification sheets (cut sheets)



# DSA Mandatory Measures: Indoor Water Use

- Plumbing Fixtures and Fittings



# How to Comply: Plumbing Fixtures and Fittings

- Plumbing Specifications
- Show water consumption of all fixtures on plans or in project manual
- Product specification sheets (cut sheets)



# DSA Mandatory Measures: Water Resistance

- Weather Protection
  - Weather-resistant exterior wall & foundation
- Moisture Control through use of:
  - Sprinklers (prevent spray on structures)
  - Entries & openings (design exterior entries subject to foot traffic or wind-driven rain to prevent water intrusion)



# How to Comply: Water Resistance

- Foundation details showing weather protection
- Irrigation details for sprinkler design
- Exterior elevations/sections and interior floor finishes for entries and openings
- Architectural specifications
- Irrigation specifications
- Product specification sheets (cut sheets)



# DSA Mandatory Measures: Construction Waste Reduction

- **Construction Waste Management Plan**
  - Establish plan and submit documentation to local authority or other enforcement agency
  - Isolated jobsites will be exempted if they are located in areas beyond the haul boundaries of the diversion facility
- **Recycle and/or salvage 50% of non-hazardous construction and demolition debris**



# How to Comply: Construction Waste Reduction

- Worksheet available in Chapter 8 of Title 24, Part 11
  - Construction Waste Management (CWM) Plan
  - CWM Worksheet
- Specifications

## Construction Waste Management (CWM) Plan

Note: This sample form may be used to assist in documenting compliance with the waste manager

Project Name: \_\_\_\_\_  
Job #: \_\_\_\_\_  
Project Manager: \_\_\_\_\_  
Waste Hauling Company: \_\_\_\_\_  
Contact Name: \_\_\_\_\_

...will comply with the project's Construction Waste Management Plan.  
...the CWM Plan Acknowledgment Sheet.

...subject to backcharges or withholding of payment for a single material.



### Construction Waste Management (CWM) Worksheet

Note: This sample form may be used to assist in documenting compliance with the waste management plan.

<b>Project Name:</b> _____			
<b>Job Number:</b> _____			
<b>Project Manager:</b> _____			
<b>Waste Hauling Company:</b> _____			
<b>Construction Waste Management (CWM) Plan</b>			
WASTE MATERIAL TYPE	DIVERSION METHOD:		PROJECTED DIVERSION RATE
	COMMINGLED AND SORTED OFF SITE	SOURCE SEPARATED ON SITE	
Asphalt			
Concrete			
Shotcrete			
Metals			
Wood			
Rigid insulation			
Fiberglass insulation			
Acoustic ceiling tile			



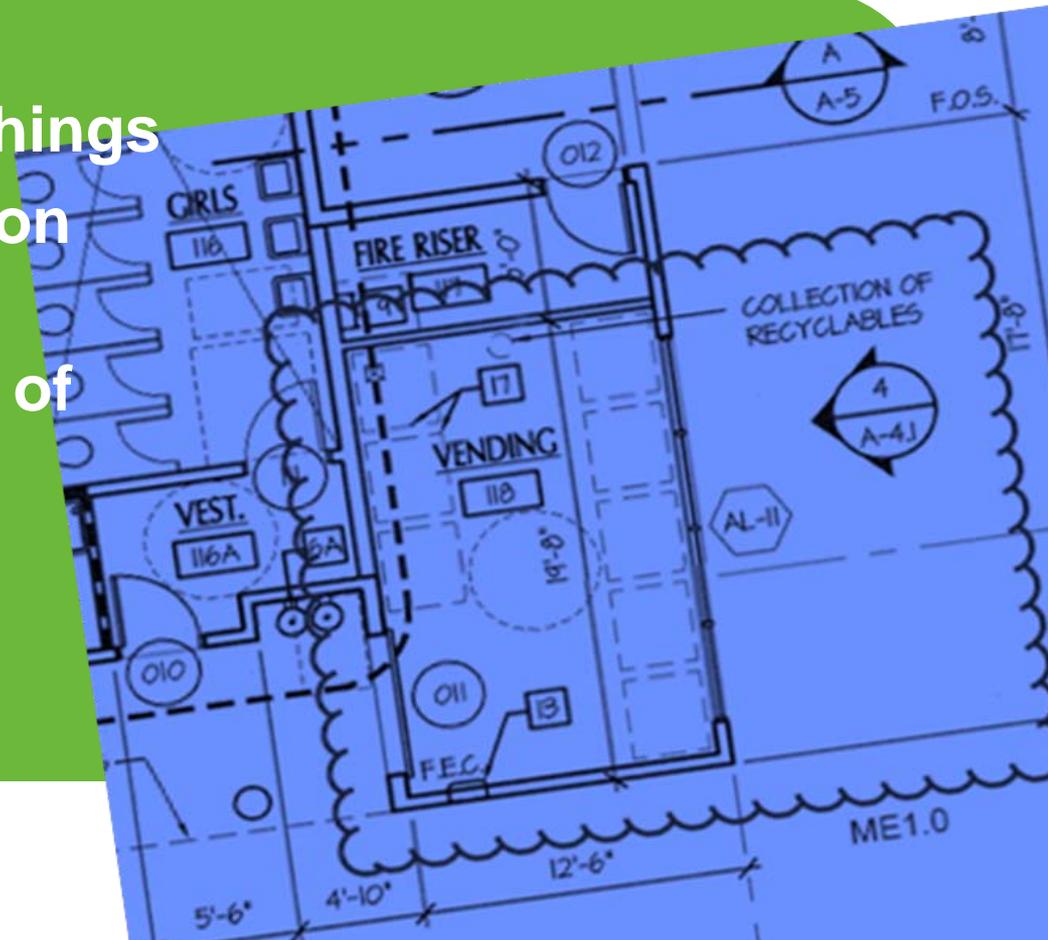
# DSA Mandatory Measures: Building Maintenance/Operations

- Provide readily accessible areas for recycling by occupant



# How to Comply: Recycling by Occupants

- Specifications for signage and furnishings
- Product specification sheets (cut sheets)
- Floor Plan location of recycling areas





# DSA Mandatory Measures: Pollutant Control

- **Covering of duct openings and protection of mechanical equipment during construction**
- **Limits for Volatile Organic Compounds (VOCs) in:**
  - Adhesives, sealants, and caulks
  - Paints and coatings
  - Carpet Systems
  - Carpet Cushions
  - Carpet Adhesive
  - Composite wood products
  - Resilient Flooring Systems
- **Air Filtration to use MERV 8 filters**



# How to Comply: Pollutant Control

- Architectural Specifications
  - Finishes
  - Adhesives
- Mechanical Specifications
  - Construction Indoor Air Quality
  - Filters
- Product specification sheets (cut sheets)



# DSA Mandatory Measures: Indoor Moisture Control and IAQ

- Indoor Moisture Control
  - Ventilation requirements per Title 24, Sections 1203
  - Exterior wall requirements per Title 24, Chapter 14
- Indoor Air Quality (IAQ)
  - Requirements for Ventilation – Title 24, Part 6, Section 121 and California Code of Regulations (CCR) Title 8.



# How to Comply: Indoor Moisture Control & IAQ

- Mechanical specifications
  - Ventilation
- Architectural specifications
  - Exterior wall materials and systems
- Product specification sheets (cut sheets)
- *If building is naturally ventilated:*
  - *Window specifications*
  - *Exterior elevations*



# Outdoor Air Quality

- HVAC, Refrigeration & Fire Suppression Equipment
  - Chlorofluorocarbons (CFCs) are not allowed
  - Halons are not allowed



# How to Comply: Outdoor Air Quality

- Mechanical Specifications
  - HVAC
  - Fire suppression system
  - Refrigeration equipment
  - Chillers
- Product specification sheets (cut sheets)
  - Refrigerants to be used



## Resources

- DSA Project Submittal Guideline for Cal Green Mandatory and Voluntary Measures at [http://www.documents.dgs.ca.gov/dsa/pubs/GL-4\\_CalGreen.pdf](http://www.documents.dgs.ca.gov/dsa/pubs/GL-4_CalGreen.pdf)
- CAL Green Code – Title 24, Part 11 (pdf): California Building Standards Commission (CBSC) website [www.bsc.ca.gov](http://www.bsc.ca.gov)
- Printed Copies available through International Code Council at [www.iccsafe.org](http://www.iccsafe.org)
- Revised DSA-3 form: [www.dgs.ca.gov/dsa/Forms.aspx](http://www.dgs.ca.gov/dsa/Forms.aspx)



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