

2010 California Green Building Standards Code

*CAL*Green



BACKGROUND

- In 2007 the City of Davis Building Division was directed by Council to Develop GBO
- Starting from zero....



BACKGROUND

Education and Training

- CGBP
- Green Point Rater
- LEED AP
- Sonoma State
- BPI Building Analyst
- PG&E Commissioning Classes
- HERS
- Reviewed existing GBOs



BACKGROUND

- Organized-Sacramento Region Green Building
 - Local Building Officials
 - Worked towards regional consistency
 - Initial steps towards implementation
 - Rating systems
 - Checklists

Green Points Rating System for Remodeling Projects

25 measures have been highlighted to signify that every effort should be made to incorporate them into your projects. These items have been chosen based upon their impact on the environment and the health of the home in coordination with ease of implementation and relative low cost. These measures can be used as a starting point for "greening" your project.

MEASURE	POINTS	REASON	ENERGY	WATER	INDOOR AIR	WASTE
A. Site						
1. Recycle On-Site Construction & Demolition Waste (5% + 1 pt @ 75% + 2 points, 80% + 4 points)	up to 4 Resources pts		0	0	0	0
2. Manage Pesticide/Herbicide Materials	4 Resources pts	1/1/1/1	0	0	0	0
3. Plan to Minimize Use, Adaptive Reuse, and Historic Preservation	4 Resources pts	1/1/1/1	0	0	0	0
4. Protect Native Soil	2 Resources pts	1/1/1/1	0	0	0	0
5. Minimize Disruption of Existing Plants & Trees	1 Resource pt	1/1/1/1	0	0	0	0
6. Implement Construction Site Stormwater Practices	2 Resources pts	1/1/1/1	0	0	0	0
7. Protect Water Quality with Landscape Design	2 Resources pts	1/1/1/1	0	0	0	0
8. Design Recycled (FSC) Landscaping with Suppliers	4 Resources pts	1/1/1/1	0	0	0	0
9. Reuse Materials/Use Recycled Content Materials for Landscape Areas	2 Resources pts	1/1/1/1	0	0	0	0
10. Install High-Efficiency Irrigation Systems	2 Resources pts	1/1/1/1	0	0	0	0
11. Provide for On-Site Water Catchment / Reuse	2 Resources pts	1/1/1/1	0	0	0	0
B. Foundations						
1. Incorporate Recycled Flyash in Concrete (25% Recycled Flyash = 2 points; Add 1 point for every 10% increase of flyash, up to 5 points)	up to 5 Resources pts		0	0	0	0
2. Use Recycled Content Aggregate	2 Resources pts	1/1/1/1	0	0	0	0
3. Install Foundation/Slab before backfill	3 Energy pts	1/1/1/1	0	0	0	0
C. Structural Frame						
1. Substitute Solid Sawn Lumber with Engineered Lumber	3 Resources pts	1/1/1/1	0	0	0	0
2. Use FSC Certified Wood for Siding (for every 10% of FSC Lumber used = 2 points, up to 10)	up to 10 Resources pts		0	0	0	0
3. Use Wood Joists for Floors and Ceilings	2 Resources pts	1/1/1/1	0	0	0	0
4. Use Wide Floor Trusses	2 Resources pts	1/1/1/1	0	0	0	0
5. Design Energy Walls on Trusses (7' or more)	2 Energy pts	1/1/1/1	0	0	0	0
6. Use Triage Joisted Studs for Vertical Applications	2 Resources pts	1/1/1/1	0	0	0	0
7. Use Engineered Studs for Vertical Applications	2 Resources pts	1/1/1/1	0	0	0	0
8. Use Recycled Content Studs for Interior Framing	2 Resources pts	1/1/1/1	0	0	0	0
9. Use Structural Insulated Panels (SIP)	3 Energy pts	1/1/1/1	0	0	0	0
10. Floors	3 Energy pts	1/1/1/1	0	0	0	0
11. Wall	3 Energy pts	1/1/1/1	0	0	0	0
12. Roof	3 Energy pts	1/1/1/1	0	0	0	0
13. Apply Advanced Framing Techniques	4 Resources pts	1/1/1/1	0	0	0	0
14. Use Reclaimed Lumber for Non-Structural Applications	3 Resources pts	1/1/1/1	0	0	0	0
D. Use GBO:						
15. Submittals	1 Resource pt	1/1/1/1	0	0	0	0
16. Scheduling	1 Resource pt	1/1/1/1	0	0	0	0



BACKGROUND

- Green Building Forums
 - Invited Stakeholders
 - Designers
 - Contractors
 - Owners
 - Suppliers
 - Citizens
 - Staff



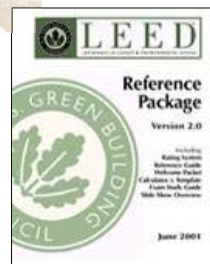
BACKGROUND

- Green Building Forums
 - Developed contact list for future forums and meeting announcements.
 - Sought input and encouraged collaboration
 - Presented and encouraged participation in the Natural Resources Commission meetings



BACKGROUND

- Davis City Council approves mandatory GBO, effective 9/01/2008
- Build It Green for Residential
 - 70-90 points SFD
 - 40 points Room Additions
 - 10 points Remodels
- LEED for Non-Residential
 - 20-28 points for new
 - 8-15 points for Tenant Improvements



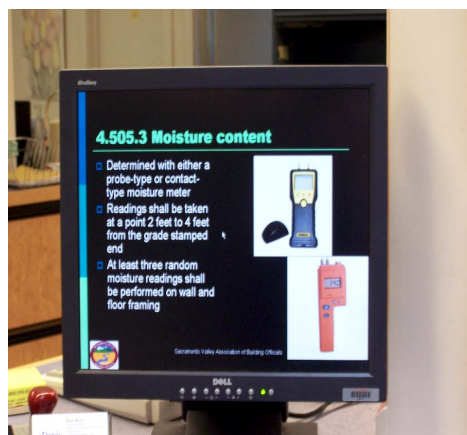
OUTREACH

- Green building info available on website and at public counter
 - Checklists
 - Forms
 - General information



OUTREACH

- Green Building and CALGreen informative power point presentations at counter



Davis
COLLEGE

OUTREACH

- CAL Green and green building presentations and seminars
 - UC Davis
 - Cosumnes River College
 - Sacramento Valley Association of Building Officials (SVABO) classes
 - Construction Specifications Institute Product Show



Davis
COLLEGE

TRAINING

- Expert on Staff
 - Champion of green building
 - Go-to person for questions and info
 - Similar to accessibility, electrical, structural etc..



TRAINING

- Buy-in from staff is necessary
 - Importance of the compliance with CAL Green must be stressed by supervisors
 - Expectations for staff should be clear
 - Follow-up in field



TRAINING

- CGBP training and certification
 - Demonstrate importance with investment in staff training
 - CAL Green seminars and training
 - CGBP certification
 - Staff becomes credible source of information
 - Professional development



IMPLEMENTATION

- Existing ordinances vs. CAL Green
- Coordinate with other Departments or Divisions within the Jurisdiction
 - Waste Diversion
 - SWPPP
 - Landscape Ordinance
 - Dark Sky Ordinance
 - Heat Island/Parking Lot Shading
 - Bicycle Parking



IMPLEMENTATION

- Create a culture within the organization that embraces CALGreen
- State law requires enforcement
- Define staffs roles in implementation
 - What
 - Who
 - When
 - How



PLAN REVIEW

- Primary educator of the public
- Review checklists
- Measures on checklist incorporated into plans
- Complete set of plans eliminates conflicts in the field

CITY OF DAVIS
DEPARTMENT OF COMMUNITY DEVELOPMENT AND SUSTAINABILITY
23 Russell Blvd. Davis CA 95616
530 757-5610 FAX 530 757-5660

CAL-GREEN RESIDENTIAL ROOM ADDITION / REMODEL APPLICATION CHECKLIST

Feature or Measure	Required	N/A	Approval
A4.203.1 Exceed the California Energy Code requirements by 10%.			
4.303.1 Indoor water use shall be reduced by at least 20 percent using one of the following methods. 1. Water saving fixtures or flow restrictors shall be used. 2. A 20 percent reduction in baseline water use shall be demonstrated. (7/1/2011)			
4.303.2 When using the calculation method specified in Section 4.303.1, multiple showerheads shall not exceed maximum flow rates. (7/1/2011)			
4.303.3 Plumbing fixtures (water closets and urinals) and fittings (faucets and showerheads) shall comply with specified performance requirements. (7/1/2011)			
A4.303.1 Kitchen faucets and dishwashers shall comply with this section. Tier 1: The maximum flow rate at a kitchen sink faucet shall not be greater than 1.5 gallons per minute at 60 psi. (7/1/2011)			
A4.403.2 Cement use in foundation mix design is reduced. Tier 1: Not less than a 20 percent reduction in cement use.			
A4.405.3 Postconsumer or preconsumer recycled content value (RCV) materials are used on the project. Tier 1: Not less than a 10 percent recycled content value.			
4.405.1 Joints and openings. Annular spaces around pipes, electric cables, conduits or other openings in plates at exterior walls shall be protected against the passage of rodents by capping such openings with cement mortar, concrete masonry or similar method acceptable to the enforcing agency.			
A4.405.1 Construction waste generated at the site is diverted to recycle or salvage in compliance with the following: 1. Tier 1 at least a 65 percent reduction			
4.503.1 Any installed gas fireplace shall be a direct-vent sealed-combustion type. Any installed woodstove or pellet stove shall comply with US EPA Phase II emission limits where applicable. Woodstoves, pellet stoves and fireplaces shall also comply with applicable local ordinances.			
4.504.1 Duct openings and other related air distribution component openings shall be covered during construction.			



FIELD INSPECTION

- Where the rubber hits the road
- Staff Inspections or Special Inspection
- Dialogue with contractor-no surprises
- Successful implementation requires buy-in from field inspectors



FIELD INSPECTION

- Verifies that measures are actually installed
- Signs checklists
- Collects forms and Self-Certification

CITY OF DAVIS
 Department of Community Development and Sustainability
 23 Russell Boulevard, Davis, CA 95616 (530) 757-5610



VOC COMPLIANCE CERTIFICATION

ADHESIVE (NONE ☐)	MANUFACTURER	CALGreen LMT	ACTUAL VOCs

SEALANT (NONE ☐)	MANUFACTURER	CALGreen LMT	ACTUAL VOCs

ARCHITECTURAL COATINGS (NONE ☐)	MANUFACTURER	CALGreen LMT	ACTUAL VOCs

FORMALDEHYDE COMPLIANCE CERTIFICATION

PRODUCT (NONE ☐)	MANUFACTURER	CURRENT LMT	ACTUAL
Hardwood plywood veneer core		0.05	
Hardwood plywood composite core		0.09	
Particleboard		0.09	
Medium density fiberboard		0.11	
Thin medium density fiberboard		0.21	

All Carpet installed in the building interior meets the testing and product requirements of the following (check one)

Carpet and Rug Institute's Green Label

California Department of Public Health Standard Practice for the testing of VOCs

NSF/ANSI 140 at the Gold Level

Scientific Certification Systems Indoor Advantage™ Gold

No carpet installed on this project

I certify that the information provided on this form is accurate and that the materials used on this project comply with Section 4.504 (Residential) or 5.504 (Non-Residential) of the 2010 California Green Building Standards Code.

Print name _____ Signature _____ Date _____

* See other side of page for VOC limits P:\BLDG\Fermal/VOC Compliance.xls



COSTS TO JURISDICTION

- Training
- Additional staff time for enforcement
- Final verification and QC of 3rd Party Inspections/Special Inspections



COST TO BUILDER/OWNER

- 3rd Party Verification
- Consultants
 - HVAC Design
 - SWPPP
 - Commissioning
 - Water budgets
 - Sub-metering
 - Materials



IMPEDIMENTS TO IMPLEMENTATION

- Staff Buy-in
- Unreasonable expectations
- Timely posting of info on website
- Construction practices
 - New and different methods
 - Learning curve
- Material availability
 - Recycled materials
 - Fixtures
 - Etc.....



QUESTIONS

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