



COUNTY OF SANTA CRUZ

PLANNING DEPARTMENT

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TOM BURNS, PLANNING DIRECTOR

February 21, 2008

AGENDA: March 4, 2008

Board of Supervisors
 County of Santa Cruz
 701 Ocean Street
 Santa Cruz CA 95060

SUBJECT: GREEN BUILDING CHECKLIST

Members of the Board:

On December 4, 2007, your Board accepted a status report on the Department's progress towards integrating Green Building concepts into land use and building practices in the unincorporated area of the County. One of the actions recommended in that report was for the department to initiate an educational program that would require all building permit applicants to review and submit a checklist of possible Green Building features in their plans. The Department was directed to report back to your Board on this date with a status report on the checklist.

Staff has developed a Green Building checklist for residential buildings generally based on the City of Santa Cruz's Green Building Program. The checklist (attached) includes a list of possible Green Building features that should be considered in the course of developing building submittals. As was discussed in the December report, we are distributing the checklist to all prospective residential building permit applicants and requiring that they complete the checklist and submit it with their building permit application. We are hoping that this exercise will not only help the public understand the terminology of green building but also get owners and designers thinking in those terms as early in the design process as possible.

In addition to this effort, staff will be working with the Commission on the Environment in the coming months to define a more focused approach for proceeding with further Green Building measures, including a possible regulatory approach for building permit applications. We are scheduled to return with a further status report on those efforts during budget hearings.

It is therefore **RECOMMENDED** that your Board accept and file this report.

Sincerely,


 Tom Burns
 Planning Director

RECOMMENDED:


 Susan Mauriello
 County Administrative Officer

Attachment



County of Santa Cruz

Green Home Checklist New Construction, Major Remodels & Additions

Building Permit Application No. _____
(by staff)

APN: _____

Description of Project: _____

Project or Owner's Name: _____

Address: _____

E-mail: _____

Background

The Planning Department has developed the following green building checklist for inclusion with all building permits that require plans. The purpose of the checklist is to get you thinking about green building and to illustrate the variety of green building features that can be incorporated into the design of a residence. Currently, the checklist does not include a point system or specific requirements for the use of green building techniques, but such requirements may be adopted in the future. **The only requirement is that you complete this checklist and submit it with your Building Permit Application.**

Instructions

Complete the following checklist by indicating whether or not the listed green building components have been incorporated into the project to be submitted. All items should be completed. If any of the listed items are unfamiliar, please review the Green Building Glossary on the Planning Department's website (<http://www.sccoplanning.com/>) or check out some of the other green building websites (search "green building").

Thank you for your cooperation.

A. Community Design Issues

	YES	NO
1. Reduce light pollution from site lighting by shielding fixtures or directing light downward		
2. Orient living rooms and porches to streets and public spaces		
3. Design smaller homes ** (Is the dwelling 70% or more below the maximum lot coverage and floor area ratio?)		
4. Design entry on same level as street access		
5. Design buildings and landscapes to deter crime and promote safety through casual observation and community interaction		
6. Design, provide and install compost bin		
7. Locate buildings to preserve open space and wildlife habitat		
8. Orient buildings on ENV axis for solar access		
9. Covered front yard/porch/patio to encourage use (minimum 50 sq. ft.)		

****An efficient space produces smaller homes and uses less energy.****

B. Site

	YES	NO
1. Recycle job site construction and demolition waste (50% required)		
2. Donate unused materials		
3. Protect native soil, protect native topsoil from erosion and reuse after construction		
4. Minimize disruption of existing plants/trees		
5. Implement construction site storm water practices		
6. Protect water quality with landscape design		
7. Design resource and water-efficient landscapes		
8. Reuse materials/use recycled content materials for landscape areas		
9. Install high efficiency irrigation system		
10. Provide on-site water catchment/ retention		
11. Utilize permeable paving for 50% of non-structural site paved area		

C. Foundation

	YES	NO
1. Incorporate recycled flyash in concrete		
2. Reuse form boards		
3. Use re-usable metal forms		
4. Use recycled content aggregate for building pads, pathways, driveways, etc.		
5. Insulate foundation/slab before backfill		
6. Install rigid foam, insulated concrete forms (ICF's)		
7. Rammed earth foundation (must meet engineering requirements for Seismic Zone 4)		
8. Use non-toxic release agents on concrete forms		
9. Seal crawl space with vapor barrier and install sump pump		
10. Create drainage plane for 3' away from foundation		

D. Structural Frame

	YES	NO
1. Substitute solid sawn lumber with engineered lumber		
A. Floors		
B. Headers (non-structural)		
C. Structural beams and headers		
2. Use Forest Stewardship Council (FSC) certified wood for framing		
3. Use Wood I-Joists for floor and ceilings		
4. Use steel interior web trusses		
5. Use energy heels on trusses		
6. Use OSB (oriented strand board)		
A. Sub-floors		
B. Sheathing		
7. Use finger-jointed studs for non-structural vertical applications		
8. Use engineered studs for vertical applications		
9. Use recycled content steel studs for interior framing		
10. Reduce lumber framing and improve thermal performance* with alternative wall construction such as:		
- Insulated concrete forms**		
- Rammed-earth and pressed earthen block**		
- Straw bale		
- Structural bamboo**		
* <i>Steel framing is not eligible due to thermal performance</i>		
** <i>Must meet code requirements for Seismic Zone 4</i>		
11. Design with 8 foot high plate		
12. Design using 2' modules		
13. Apply advanced framing techniques		
14. Use reclaimed lumber for non-structural applications		

E. Exterior Finish

	YES	NO
1. Use sustainable decking materials		
A. Recycled content		
B. FSC certified wood		
2. Use non-CCA treated wood		
3. Install house wrap under siding		
4. Use alternative siding materials		
A. Recycled content		
B. Fiber-cement		
C. Earth and/or plaster		
5. Use low/no VOC exterior paint such as silicate		

F. Plumbing

	YES	NO
1. Insulate all hot water pipes		
2. Install flow reducers to reduce flow		
A. Faucets		
B. Showerheads		
3. Install dual flush toilets		
4. Install chlorine filter on showerhead		
5. Install tankless water heater		
6. Pre-plumb for grey water conversion		
7. Install grey water system (per Appendix G of the CPC)		
8. Install water filtration units as faucets		
9. Install on-demand hot water circulation pump		
10. Install zero-water urinals		
11. Install rainwater collection and storage		
A. 2500 gallon capacity		
B. 5000 gallon capacity		
12. Install drain water heat recovery fixtures		

G. Electrical

	YES	NO
1. Install compact fluorescent light bulbs – CFL’s		
2. Install air-tight insulation-compatible recessed fixtures for CFL’s (T-24 required)		
3. Install lighting controls		
4. Install high efficiency ceiling fans with CFL’s		

H. Appliances

	YES	NO
1. Install ENERGY STAR dishwasher		
2. Install horizontal axis washing machine		
3. Install ENERGY STAR refrigerator		

I. Insulation

	YES	NO
1. Upgrade insulation to exceed Title 24 requirements by 20%		
A. Walls		
B. Ceilings		
2. Install recycled-content, formaldehyde-free fiberglass insulation		
3. Use advanced infiltration reduction practices		
4. Use environmentally preferable insulation materials (wool, foamed concrete, soy-based polyurethane)		
A. Walls		
B. Ceilings		
5. Install straw bale insulation at least 18" thick		

J. Windows

	YES	NO
1. Install energy-efficient windows		
A. Double-paned	Required	
B. Triple-paned		
C. Low-emissivity (Low-E)	Required	
D. Low conductivity frames		

K. Heating Ventilation and Air Conditioning

	YES	NO
1. Use duct mastic on all duct joints		
2. Install ductwork within conditioned space		
3. Vent range hood to the outside		
4. Clean all ducts before occupancy	Required	
5. Install attic ventilation system		
6. Install whole house fan		
7. Install sealed combustion units		
A. Furnaces		
B. Water heaters		
8. Install 13 Seer/11 EER or higher AC with TXV		
9. Install AC with non-HCFC refrigerants (or don't install AC)		
10. Install 90% annual fuel utilization efficiency (AFUE) furnace		
11. Eliminate wood burning fireplaces		
12. Install zoned hydronic radiant heating		
13. Install high efficiency particulate air filter (MERV 6+)		
14. Install heat recovery ventilation unit (HRV)		
15. Install separate garage exhaust fan		

L. Renewable Energy and Roofing

	YES	NO
1. Pre-plumb for solar hot water		
2. Install solar hot water heating system		
3. Pre-wire for future photovoltaic installation		
4. Install photovoltaic panels –2.4 kw or –3.6 kw		
5. Install solar walkway lights		
6. Select safe and durable roofing material, (Class 'A', 40 year)		
7. Install radiant barrier roof sheathing material		
8. Select EPA ENERGY STAR cool roofing material		
9. Use roofing materials with at least 33% recycled content		
10. Install a green roof (sod or other living roof)		

M. Natural Heating and Cooling

	YES	NO
1. Incorporate passive solar heating		
2. Install subterranean cooling tubes (ground coupled heat exchangers)		
3. Overhangs or awnings on south facing walls sized to maximize solar heat gain for building		
4. Oversized overhangs around entire structure for increased weather proofing: 16" or 24"		
5. Plant deciduous trees on the west and south sides		

N. Indoor Air Quality and Finishes

	YES	NO
1. Install whole house vacuum system		
2. Use low / no VOC paint		
3. Use low VOC, water based wood finishes		
4. Use solvent-free adhesives		
5. Formaldehydefree particleboard		
6. Use exterior grade plywood for interior uses		
7. Use formaldehyde-free MDF and materials		
8. Seal all exposed particleboard or MDF		
9. Use FSC certified materials for interior finish		
10. Use finger-jointed or recycled content trim		

O. Flooring

	YES	NO
1. Select FSC certified wood flooring		
2. Use rapidly renewable flooring materials		
3. Use salvaged or at least 20% recycled content ceramic tiles		
4. Install natural linoleum in place of vinyl		
5. Install recycled content carpet with low VOC's		
6. Use finished or exposed concrete for 50% or more of the project floor area on the ground floor		
7. Use earthen flooring for 50% of the floor area on the ground floor		

P. Other

	YES	NO
1. Incorporate listing of green features into cover of blueprints		
2. Develop Homeowner Manual of Green Features and Benefits		
3. Energy ratings: Every 1% reduction in whole house energy beyond Title 24 . Use energy software to show improvement over California Residential Energy Standards (Title 24)		
4. These approaches must meet environmental goals identified in the Residential Green Building Guidelines		
a. Turf less than 10% of total lot area minus building footprint, decking, patios, driveways		
b. After installation of finishes, indoor air tests show formaldehyde level <27 ppb		
c. Conduct and pass a duct blower test		
d. Install mudroom with bench, shoe rack, and hard floor to protect IAQ		
e. Install permanent clothes line		
f. Increased damp proofing of bathrooms		