

# CODE GREEN

SANTA FE, NEW MEXICO

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RESEARCH AND ANALYSIS OF GREEN BUILDING PROGRAMS, REGULATIONS AND  
TECHNOLOGIES

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RESEARCH CONDUCTED BY:  
J. MATTHEW THOMAS  
mail@jmthomas.net

RESEARCH COORDINATORS:  
KATHY MCCORMIK  
RON QUARLES

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## WHAT IS GREEN BUILDING?

"... The earth belongs to each generation during its course, fully and in its own right, no generation can contract debts greater than may be paid during the course of its own existence".

*-Thomas Jefferson, Sept. 6, 1789*

“Green Building”...relates to land use, building design and construction strategies that reduce impacts on the environment. Green buildings minimize waste of natural resources, use recycled materials, reduce the amount of debris in local landfills, incorporate water and energy conservation, decrease pollution, and offer healthier air and lighting for the occupants.”

*-City of Pasadena, California*

“Green Building practices promote construction of buildings that are healthier for the occupants and healthier for the environment...Sustainable or “green” building practices can reduce the tremendous impact that building design, construction and maintenance has on both people and nature. According to the U.S. Department of Energy's Center for Sustainable Development, buildings consume 40% of the world's total energy, 25% of its wood harvest and 16% of its water. The building industry is the nation's largest manufacturing activity, representing more than 50% of the nation's wealth and 13% of its Gross Domestic Product. Energy and material consumption in buildings can contribute significantly to global climate change...”

*-San Jose, California*

“...The built environment has a profound impact on our natural environment, economy, health and productivity...Breakthroughs in building science, technology and operations are available to designers, builders and owners who want to build green and maximize both economic and environmental performance... Environmental benefits: Enhance and protect ecosystems and biodiversity; Improve air and water quality; Reduce solid waste; Conserve natural resources... The Economic benefits: Reduce operating costs; Enhance asset value and profits; Improve employee productivity and satisfaction; Optimize life-cycle economic performance... Health and community benefits: Improve air, thermal and acoustic environments; Enhance occupant comfort and health; Minimize strain on local infrastructure; Contribute to overall quality of life...”

*-United State Green Building Council*

# INTRODUCTION

The green building movement is undergoing a rapid evolution in this country. With the establishment of the US Green Building Council and their LEED program, builders, architects, cities and even the national government and military are implementing green building techniques into new construction and renovations. By going green with this high performance technology people are learning that energy, health costs and money can be saved.

This research project was compiled during a three month research contract with the City of Santa Fe, under the Department of Affordable Housing. This work is being presented for the preparation of the “North West Quadrant” of Santa Fe, in the desire to create a more environmentally sound development utilizing the latest green building legislation and building technologies. This information will be included in the planning and development strategy for the North West Quadrant.

The research findings, compiled in: *Code Green: Santa Fe*, is to serve as a guide to understanding the current state of the Green Building Movement. This report looks at seven operating Green Building Programs in progressive cities of the western half of the United States. These cities were selected based on their regional, economical and environmental similarities or have set precedents for their program and operating history. The research also provides incite into the costs of green components, available funding and what is working and what is not working.

The research was conducted by contacting individual Green Building Programs or Building Departments, as well as nonprofit organizations specializing in green building, financial institutions and builders actually utilizing these programs. In gathering information while attending regional and national green building events, interviewing green building practitioners from around the country and sifting through the abundant information growing on the internet an attempt is made to present as much information in as simple and as easy to digest format.

The data collected within is from August 2006 to November 2006 and is only an indicator of the present green building movement in the western half of the United States. At the time of research several green building programs were in the process of updating their programs and the USGBC is constantly updating and releasing new programs. Research notes are provided, allowing one to view websites and contact information for obtaining the latest developments. The information within should not be substituted for the actual program. To learn more about these programs as well as implementing a green building program, it is encouraged to contact the individual programs for detailed descriptions and the most up-to-date information. If you find any of the information within in error please contact the author.

It is the hope, in conducting this research, that the following information will be utilized in its fullest potential in informing, educating and representing what has been achieved thus far in the Green Building Movement. It's time for Santa Fe to take a position, and go green.

J. Matthew Thomas

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About the Author:

J. Matthew Thomas received his degree in Architecture from Kansas State University in 2001. He has been working with architects and builders specializing in sustainable development in Northern New Mexico for the past four years. He is a founding member of the Emerging Green Builders Committee of the USGBC and is currently a LEED-Homes Pilot Program Project Manager for a condominium development in Taos. Matt is a LEED Accredited Professional and is currently in the process of achieving his New Mexico Architecture license. He can be reached at [mail@jmthomas.net](mailto:mail@jmthomas.net)

## KEY OBSERVATIONS

In conducting this research it was no surprise to find that the green building movement is evolving fast. In discovering the number of established green building programs, some in operation for over a decade, it was reassuring to know the path has been laid. As you will find in the following information, the City of Santa Fe and the state of New Mexico are not leaders in green building and are behind in a number of simple steps to become more environmentally and energy efficient in their building construction practices.

In looking at the selected cities one element in their success was the implementation of a Green Building Program. These programs were either run thru an existing city department, the local utility or a specific created “environmental” department and became a clearing house for green building implementation, information and education.

A number of these programs have utilized consultants and non-profits within in the green building sector to create their municipal green building programs. These experienced organizations guide the cities in creating a program geared to their needs one step at a time.

As shown in the following matrices, simple steps can be implemented to encourage green building. The programs show innovative strategies in code writing, guidelines, checklists, incentives and funding that have allowed the programs to be successful and grow. By setting up a simple outline, or checklist, of green building tools and techniques “points” can be determined in achieving a “rating”. Over time these criteria can evolve by adding additional requirements, increasing the minimum standards and establishing them as a mandatory building requirement.

The following list of recommendations was gathered after research was conducted. These tasks are recommended for the implementation of a more sustainable North West Quadrant for the City of Santa Fe.

## RECOMMENDATIONS

### **1. Plan Smart from the Start**

Creating the initial planning for smart growth in the Northwest Quadrant is essential in maintaining a successful sustainable development. Several organizations are working to create better planning ([www.newurbanism.org](http://www.newurbanism.org)) while the USGBC is in the process of releasing their LEED for Neighborhood Developments ([www.usgbc.org](http://www.usgbc.org)). Several developments in the Santa Fe area, as well as nationally are working to create better planning ([www.osharavillage.com](http://www.osharavillage.com)). It is encourage that the design team consider “smart” planning in the development of the North West Quadrant that includes: mixed use, affordable housing, open space, connection to transportation routes, road alignment for maximum solar gain, waste/recycle management and centralized/independent energy/utility potential.

## **2. Create a Green Building Program**

All of the cities researched in this study had established Green Building Programs. The enactment of policies, guidelines and education were directly established through these full-time programs. I would recommend the program be within a respected city department for maximum efficiency. A Green Building Program creates a full-time clearing house for research, education and training. For the initial NW Quadrant development, it is encouraged that a committee or commission is formed to address key green building issues until a full program is developed.

## **3. Utilize National Organizations**

There are a number of not-for-profit and for-profit organizations that work with communities in creating a viable green building program. The non-profit, Global Green ([www.globalgreen.org](http://www.globalgreen.org)) works with cities in implementing green building guidelines. They have published “Developing Green Building Programs: A Step-By-Step Guide for Local Governments”. This book provides a straight forward approach in getting a city prepared for green building. A representative from Global Green has been contacted and would be willing to make a presentation. The same is true for the For-Profit organization EcoMedia ([www.ecomedia.us/](http://www.ecomedia.us/)), who work with local governments in securing local business donations for public environmental works.

## **4. Utilize the Local Resources**

A number of green building programs around the country had the direct support of local non-profit green building organizations, boards and commissions. Many cities work directly with local groups in creating guidelines and educational opportunities. Here in New Mexico and Santa Fe, many organizations are already in existence and have been working to green our building environment. National organizations such as the National Home Builders Association and US Green Building Council already have green building guidelines in place. This eliminates the need for Santa Fe to write the book on green building guidelines and policy. See NEW MEXICO GREEN BUILDING STATUS REPORT, Local Organizations and Programs, for additional local groups working in the green building trades.

## **5. LEED “Equivalent” Checklists**

With the emergence of the USGBC and their LEED program, a nationally recognized “checklist” for greening buildings is becoming more common for municipal use. Green Building Programs have either modeled their checklist from the LEED standard, or simply adopted them outright. I recommend the NW Quadrant adopt a checklist for green building that is in the format of the LEED checklist but that is current with regional characteristics. A number of builders and architects are becoming familiar with such a layout and there will be less of a learning curve. Depending on cost, an “equivalency” to LEED could be adopted until experience and cost become more manageable to require LEED certification.

## **6. Get Incentives**

Incentive based programs are found across the board, and with varying success. Time and money are essential in the construction business. It was discovered that in many cases, having an “expedited plan review” for green projects is more attractive to builders, saving them money. Other incentives include reduced or eliminated permit fees, tax incentives, marketing and education. Incentives success rate varies on how and where the program operates. For example, programs offering an “expedited planning review” for green rated buildings find more success in achieving this incentive when the program is within the Building Department.

## **7. Funding**

The biggest push in green building came when it was realized that you can save money by going green. Green building demands higher efficiency and better building, thus creating LESS maintenance over time and lower energy bills. It has been shown as well that occupant health and productivity increases in these high performance buildings. There is money out there for green building. Contained in this research is a listing of funds available for green building (see Green Building Fundraising). As Santa Fe and other cities begin to make the bold move to encourage high performance building the market will transform and the industry will react bringing prices down.

**MATRIX A: GREEN PROGRAMS AND REGULATIONS**

CITY	PROGRAM	OPERATIONAL STAFF	POLICY	APPLIES TO:				PERFORMANCE STANDARD	MANDATORY	VOLUNTARY	JURISDICTION	INCENTIVES	COMMENTS
				MUNICIPAL	COMMERCIAL	RESIDENTIAL	MULTI-FAMILY						
AUSTIN, TEXAS	City of Austin		City Res. <sup>6</sup>	☀				LEED-Silver minimum <sup>1</sup>	☀		City buildings		
	Austin Energy Green Building Program <sup>2</sup>	Austin Energy	City		☀	☀	☀	5-star rating system <sup>3</sup>		☀	New or remodeled	Resource and tech. assistance, marketing, expedited review	Manage it Green <sup>8</sup> Zero-Energy Capable <sup>9</sup>
	Austin Energy Green Building Program <sup>2</sup>	Austin Energy		☀	☀	☀	☀	1-star rating <sup>3</sup>	☀		Central Business District <sup>7</sup>	See above	Traditional Neighborhood District <sup>10</sup>
	University Neighborhood Overlay	Austin Energy	City				☀	1-star rating <sup>3</sup>	☀		New multi-family	See above	
	Dept. of Water Conservation <sup>4</sup>	City Dept.	City		☀	☀	☀			☀	New or remodel	Rebates, tax exempt.	
	Mueller Municipal Airport Re-Dev. <sup>5</sup>	Austin Energy	Dev. Agreement			☀		3-star rating <sup>3</sup>	☀		New Buildings	Resource and tech. assistance, marketing, expedited review	
Scottsdale AZ	City of Scottsdale		City	☀				LEED-Gold <sup>1</sup>	☀		City Buildings		5-year payback <sup>2</sup>
	Scottsdale Green Building Program <sup>3</sup>	Building Department	City		☀	☀		Rating System: Entry level and advanced level <sup>4</sup>		☀ <sup>5</sup>	New and remodel	Resource and tech. assistance, marketing and expedited review <sup>6</sup>	Green Building Advisory Comm. <sup>7</sup> Green Building Events <sup>8</sup>

CITY	PROGRAM	OPERATIONAL STAFF	POLICY	APPLIES TO:				PERFORMANC E STANDARD	MANDATORY	VOLUNTARY	JURISDICTION	INCENTIVES	COMMENTS
				MUNICIPAL	COMMERCIA	RESIDENTIAL	MULTI-						
<b>Boul der, CO</b>	City of Boulder		City	☀				LEED <sup>1</sup>	☀		City		Energy Tax <sup>9</sup>
	City of Boulder Green Points Building Program <sup>2</sup>	Planning & Dev. Services / Environ. Affairs	City			☀		Green Points Rating <sup>3</sup>	☀		New and remodel	Marketing and value Certified builders <sup>4</sup>	Update 2006 <sup>5</sup>
	Solar Row <sup>6</sup>	Wonderland Hill Dev. Company	Private				☀	Net-Zero <sup>7</sup>			13 units total	Rebates <sup>8</sup>	4 units to be affordable
<b>Aspen, CO</b>	City of Aspen Efficient Building Program <sup>1</sup>	City of Aspen Community Dev. Department, Building Dept.	Ordina nce			☀	☀	Efficient Building Program Resource Guide and Checklist	☀		City and County		Parts apply to publicly funded affordable housing projects <sup>2</sup>
	Aspen/Pitkin Energy Conservation Code <sup>3</sup>	Building Department and CORE	City & Cnty.			☀	☀	REMP Program <sup>4</sup>	☀		New Const. City and County	REMP incentive program <sup>4</sup>	
<b>Portl and, OR</b>	City of Portland		City	☀				LEED-Gold <sup>1</sup>	☀		City	Green Invest. Fund <sup>6</sup>	Existing and new
	G/Rated City of Portland Green Building Program <sup>2</sup>	Office of Sustainable Develop <sup>3</sup> & Portland Development Commission (PDC) <sup>4</sup>	City			☀	☀	Greening Portland's Affordable Housing Guide <sup>5</sup>	☀		City	Plaque, education, Green Invest. Fund <sup>6</sup> , State Tax incentives	
	G/Rated City of Portland Green Building Program	Office of Sustainable Develop.	City		☀	☀	☀	Green Home Remodeling Guide & Tenant Improvement Guide <sup>7</sup>		☀	New and remodel	See above	

CITY	PROGRAM	OPERATIONAL STAFF	POLICY	APPLIES TO:				PERFORMANC E STANDARD	MANDATORY	VOLUNTARY	JURISDICTION	INCENTIVES	COMMENTS
				MUNICIPAL	COMMERCIA	RESIDENTIAL	MULTI-						
Santa Monica, CA	City of Santa Monica		City	☀				LEED <sup>1</sup> -Silver min.	☀		City		
	Santa Monica Green Building Program <sup>2</sup>	Env'tl Programs Division	City		☀	☀	☀	Mandatory Base-line req. <sup>3</sup>	☀		City	Priority Plan Check, Grants <sup>4</sup> (for LEED & Innovat. Tech.)	Confer., home tours, guidelines And Green Building Resource Center <sup>5</sup>
	Santa Monica Green Building Program	See above	City		☀	☀	☀	Green Building Guide / LEED-NC and LEED-H <sup>6</sup>		☀	City	See above	
	Santa Monica Green Building Program / Housing Division	See above	City			☀	☀	Affordable Housing Checklist <sup>7</sup>		☀	City Housing Projects	City	
San Francisco, CA	City of San Francisco		City	☀				LEED-Silver <sup>1</sup>	☀		City	Expedited review <sup>2</sup>	5,000 sf min <sup>3</sup>
	Department of the Environment <sup>4</sup>	Department of the Environ't & Resource Efficient Building Task Force (REB) <sup>5</sup>	City	☀				San Francisco Municipal Building Compliance Guide <sup>6</sup>	☀		City	See above	Chapter 7 of Env. Code <sup>7</sup> , SF Green Print <sup>8</sup>
	Department of the Environment	Department of the Environ't	City & Cnty.			☀		Green Building Resource Guide, Green Remodeling Guide <sup>9</sup>		☀	City & County		Build-it Green <sup>10</sup>

## NOTES:

This information was gathered in the months of August – November 2006. This above research is to serve as a simplified report of the current state of green building policy, is not intended to substitute for the full program policies. All information is subject to change and updated over time. For accurate information regarding cities and their green building programs, contact individual cities directly. See below for detailed information on each city program and regulations.

## Austin, Texas:

1. The LEED Green Building Rating System was created by the United States Green Building Council (USGBC) and currently is available for New Commercial Construction and major Renovation Projects, Existing Buildings, Commercial Interiors, Core and Shell Developments, Homes and Neighborhood Developments. Each rating system alters due to outcome, but generally applies towards the following green measures: Site and Location, Sustainable Sites, Water Efficiency, Indoor Air Quality, Materials and Resources, Energy and Atmosphere, User Awareness and Innovation and Design Process. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. ([www.usgbc.org](http://www.usgbc.org)) (See *Appendix II – USGBC*)
2. The Austin Energy Green Building Program is administered via Austin Energy (the Austin public utility). Most of the funding is provided by Austin Energy and is supplemented by the city’s water utility, environmental, and solid waste departments. ([www.ci.austin.tx.us/greenbuilder](http://www.ci.austin.tx.us/greenbuilder))
3. The Austin Energy Green Building Rating Tool is available for Commercial, Multi-family and Single-Family projects. Guidelines are divided into Basic requirements and voluntary measures: Design Team Integration, Site, Selection, Water, Energy, Indoor Air Quality, Materials and Resources, Recycling and Waste Management, Building Commissioning and Innovation. (See *Appendix I - AUSTIN, TX – RATING TOOLS*)
4. The Austin Water Utility’s Water Conservation Program offers a Building Reduced Water and Wastewater Costs into the Design Guidelines. (See *Appendix I - AUSTIN, TX – WATER EFFICIENCY*) ([www.waterwiseaustin.org](http://www.waterwiseaustin.org))
5. The Mueller Municipal Airport Redevelopment Project is a Community planned as a demonstration of Austin Energy’s Green Building Program for sustainable development. Objectives include: Air Quality, Mitigating Urban Heat Island, Protecting Night Skies and Green Building. (See *Appendix I - AUSTIN, TX – MUELLER*)
6. City Resolution for LEED-Silver Rating on all Municipal Projects. (See *Appendix I - AUSTIN, TX – LEED ORDINANCE*).
7. City Ordinance for Green Building One-Star Rating on all Property zoned central business and downtown mixed use. (See *Appendix I - AUSTIN, TX – DOWNTOWN ORDINANCE*).
8. The Austin Energy Green Building Program offers the Manage it Green consulting services, package of green tools and products created specifically for utilities and government agencies. (See *Appendix I - AUSTIN, TX – MANAGE IT GREEN*)
9. City Council appointed a code task force to identify code changes that will make new homes “zero-energy capable” by 2015. Zero-Energy Capable means that a home will be energy efficient enough to be a net-zero energy home with the addition of on-site energy generation, such as solar photovoltaics.
10. Traditional Neighborhood Districts: ([www.ci.austin.tx.us/tnd/](http://www.ci.austin.tx.us/tnd/)) Criteria manual with administrative rules for a Traditional Neighborhood District (TND)...”includes supplemental information and illustrations on the standards for planning, architectural design, streets and streetscapes, open space, location of utilities, drainage, and landscaping”

## **Scottsdale, Arizona:**

1. The LEED Green Building Rating System was created by the United States Green Building Council (USGBC) and currently is available for New Commercial Construction and major Renovation Projects, Existing Buildings, Commercial Interiors, Core and Shell Developments, Homes and Neighborhood Developments. Each rating system alters due to outcome, but generally applies towards the following green measures: Site and Location, Sustainable Sites, Water Efficiency, Indoor Air Quality, Materials and Resources, Energy and Atmosphere, User Awareness and Innovation and Design Process. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. Scottsdale became the first city in the nation to adopt the national LEED-Gold Standard for Green Building. ([www.usgbc.org](http://www.usgbc.org)) (See *Appendix II – USGBC*)
2. All LEED projects are required based on a 5-year payback. If project doesn't show a payback for the LEED inquired expenses in 5 years, project isn't required to go LEED.
3. The Scottsdale Green Building Program was established in 1998. Publications/Guidelines include: The 2005 Green Building Progress Report, Green Building Program Overview, Green Home Buyers Guide, Green Building Remodeling Workbook and Landscape Revitalization Workbook (See *Appendix I – SCOTTSDALE,AZ –GUIDELINES*) The full time program is run through the cities building department. The green building checklist and its inspections are correlated with the regular building inspections. City building inspectors are trained to inspect the green building checklist simultaneously with regularly scheduled building inspections.
4. The Scottsdale Green Building Rating Checklist was updated in August of 2006. Major changes include: City adoption of energy code requirements as part of the International Residential Code and International Energy Conservation Codes; EPA ban on chromated copper arsenate (CCA) treated wood for residential uses; the National Association of Home Builders *Model Green Home Building Guidelines* and the US Green Building Council pilot *LEED for Homes* green program. ([www.scottsdaleAZ.gov/greenbuilding](http://www.scottsdaleAZ.gov/greenbuilding)) (See *Appendix I – SCOTTSDALE,AZ –GUIDELINES*)
5. While the green building guidelines are voluntary, in 2005, 33% of all single-family residential building permits adhered to the city's green building program standards. Since 1998, the city has issued 932 green building permits.
6. Builder incentives include: Priority plan review, job site signs, directory of participating designers and builders, green building certification through inspections, homeowner's manual, promotional package for builders/developers and educational programs. (See *Appendix I – SCOTTSDALE,AZ –INCENTIVES*).
7. The Scottsdale Green Building Advisory Committee supports the green building program with communication, resources, guidance, and advises on green building technologies, strategies, materials, projects and standards of practice.
8. Green Building Expo (<http://www.greenbuildingexpo.com/>), Green Building/ solar Lecture series.

## **Boulder, Colorado:**

1. The LEED Green Building Rating System was created by the United States Green Building Council (USGBC) and currently is available for New Commercial Construction and major Renovation Projects, Existing Buildings, Commercial Interiors, Core and Shell Developments, Homes and Neighborhood Developments. Each rating system alters due to outcome, but generally applies towards the following green measures: Site and Location, Sustainable Sites, Water Efficiency, Indoor Air Quality, Materials and Resources, Energy and Atmosphere, User Awareness and Innovation and Design Process. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. ([www.usgbc.org](http://www.usgbc.org)) (See *Appendix II – USGBC*)
2. The City of Boulder Green Points Building Program ([www.bouldergreenpoints.com](http://www.bouldergreenpoints.com)) is 10 years old and operates through the City of Boulder Planning & Development Services. The Office of Environmental Affairs sponsors the program and provides trainings as well as certifications for contractors offered during quarterly workshops. Publications include: Green Points Program

Guidelines, Residential Construction and Demolition Waste Checklist and Construction Job – Site Recycling Guide. (See *Appendix I – BOULDER, CO –GUIDELINES*)

3. Green Points Rating is a mandatory guideline listing measures that buildings can “pick and choose” from to obtain a rating. (See *Appendix I – BOULDER, CO –GUIDELINES*)
4. Incentives include: trainings, education, marketing and contractor certification.
5. The Boulder Green Points Building Program will be updating their Residential Building Guide in late 2006.
6. Solar Row is a 13-home housing project in north Boulder developed by Boulder-based Wonderland Hill Development Company. ([www.solarrow.com](http://www.solarrow.com)). Construction to complete spring 2007.
7. This “net-zero” development will have the following features: grid-tie back, three-kilowatt photovoltaic system and two solar thermal collectors (wind power may have to be purchased to offset extra energy use), density, 2x6 insulated walls, Energy Star Appliances, dual flush toilets, compact florescent lights and tankless water heaters. Low VOC paints and formaldehyde-free insulation, heat-recovery ventilators or whole-house fans, green flooring (bamboo or recycled plastic carpeting). Units are 1,258 – 1,700 sq. feet and start at \$379,000. Four of the 13 units will be sold as affordable housing.
8. Xcel Energy Solar Rebates offer \$4.50 per watt in rebates for installed solar systems. SolarRow is expected to recover as much as 60% of the systems cost.
9. Initiative 202, the Climate Action Plan Tax, makes Boulder the first city in the nation with an energy tax. “The tax will be collected by the local electric utility company based on the amount of electricity used. The tax will be used to fund the city's Climate Action Plan, which was approved by City Council in June 2006. The average household will pay \$1.33 per month and an average business will pay \$3.80 per month. The tax will generate about \$1 million annually through 2012 when the tax is set to expire. Estimated energy cost savings from implementing the Climate Change Action Plan are \$63 million over the long term.”  
[http://www.ci.boulder.co.us/index.php?option=com\\_content&task=view&id=6136&Itemid=169](http://www.ci.boulder.co.us/index.php?option=com_content&task=view&id=6136&Itemid=169)

### **Aspen, Colorado:**

1. The Aspen Efficient Building Program ([http://www.aspenpitkin.com/depts/41/bldg\\_efficient.cfm](http://www.aspenpitkin.com/depts/41/bldg_efficient.cfm)) is operated through the City of Aspen Community Development Department’s Building Department. This mandatory program for residential (one, two and multi-family) projects began in 2002 and includes a checklist of mandatory and voluntary measures. The program is “point-based” wherein a minimum number of points must be reached to qualify. Publications include: Efficient Building Program Resource Guide, Efficient Building Code Administrative and Interpretive Regulations and a Efficient Building Program Checklist. (See *Appendix I – ASPEN, CO –GUIDELINES*)
2. Measures are identified in the Efficient Building Program guidelines that are mandatory compliance (required) for publicly-funded affordable housing (PFAH) projects. This requirement creates affordable housing projects that are rated above the standards for the typical residential project.
3. The 1999 Aspen/Pitkin Energy Conservation Code adopted and incorporated by reference as Appendix Chapter 13 to the Uniform Building Code, 1999 Edition. These standards provide more strict minimum standards for building construction. (See *Appendix I – ASPEN, CO –CODE*)
4. City of Aspen / Pitkin County Energy Code and Renewable Energy Mitigation Program (REMP): In 2000, The City of Aspen and Pitkin County launched the Renewable Energy Mitigation Program (RAMP). By requiring new homes to mitigate their environmental impacts, REMP has raised \$2.5 million for energy efficiency and renewable energy projects. The Pitkin County and Aspen building codes require new homes to meet a strict energy “budget”. Homeowners who wish to consume additional energy for snowmelt outdoor pools and spas have the option of installing a renewable energy system or paying a renewable energy mitigation fee instead. CORE

([www.aspencore.org](http://www.aspencore.org)) manages the REMP funds. Fees are dedicated to energy efficiency and renewable energy projects in the Roaring Fork Valley. REMP fees are available to project teams utilizing green building techniques. Printed Materials include: REMP Summary Sheet. (See *Appendix I – ASPEN, CO –REMP*)

## **Portland, Oregon:**

1. The LEED Green Building Rating System was created by the United States Green Building Council (USGBC) and currently is available for New Commercial Construction and major Renovation Projects, Existing Buildings, Commercial Interiors, Core and Shell Developments, Homes and Neighborhood Developments. Each rating system alters due to outcome, but generally applies towards the following green measures: Site and Location, Sustainable Sites, Water Efficiency, Indoor Air Quality, Materials and Resources, Energy and Atmosphere, User Awareness and Innovation and Design Process. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. ([www.usgbc.org](http://www.usgbc.org)). The Green Building Policy is technically a "non-binding" policy but, for city projects, it's treated like it's required. (See *Appendix II – USGBC*)
2. Evolving out of a voluntary citizens group, The G/Rated City of Portland Green Building Program (<http://www.portlandonline.com/osd/index.cfm?c=41481>) began in 2000. The Program also provides: Plans review by on-staff trained architects, Site visits, Ecocharrettes to formulate green alternatives and opportunities, Informational resources including project guides and case studies, Key contacts in the green building industry and One-on-one meetings or phone consultations. Events include: Build It Green! Home Tour and Information Fair and ReThink, a yearly educational program about green building. The G/Rated program is funded through residential and commercial solid waste fees, grants and contracts. Sponsorships and tuition pay for additional programs and events, such as the annual Build It Green! and ReTHINK. Published Materials include: ReThinking Development: Portland's Strategic Investment in Green Building, Progress Report, Portland's Green Building Policy: A Status Report and Recommendations (April 2005), Green Building Resolution (2005), and the PDC's Green Building Program Guidelines (See *Appendix I – PORTLAND, OR –GUIDELINES*).
3. The G/Rated Green Building Program is run through the Green Building Division, in the City's Office of Sustainable Development (OSD) (<http://www.portlandonline.com/osd/>). G/Rated represents a partnership of six development-related City bureaus and other local organizations.
4. The City's economic development agency, the Portland Development Commission (PDC), has its own green building policy for publicly-funded private projects. All private projects that receive a certain amount of financial assistance from the PDC are required to meet certain green building criteria (including affordable housing, which have separate guidelines). (See *Appendix I – PORTLAND, OR –GUIDELINES*)
5. Greening Portland's Affordable Housing Guide contains mandatory and voluntary measures. The guidelines are broken into six major categories with 66 strategies. Each strategy indicates whether or not it is Threshold or Voluntary. If it is a Threshold strategy, it is required for all projects seeking funding from PDC. (See *Appendix I – PORTLAND, OR –GUIDELINES*).
6. Incentives: Green Investment Fund: The Green Investment Fund (GIF) is a competitive grant program that supports innovative green building projects in Portland. In the current round of funding, a total of \$450,000 is available and the maximum grant amount for any project is \$225,000. Industrial, residential, commercial, and mixed-use public and private organizations may apply. The primary intent of the 2005-2006 GIF is to support early building and site-related project activities that examine the potential and identify the means to realize an exemplary, comprehensive green building project. GIF grants are secondarily intended to help offset the incremental hard costs of the green building measures or strategies that most strongly contribute

to the building's ability to meet the GIF goals and priorities. Funding partners include the Energy Trust of Oregon and the City of Portland Bureaus of Water and Environmental Services.

7. Green Homes Remodeling Guide contains tips and checklists for green building and remodeling. This guide is voluntary only. (See *Appendix I – PORTLAND, OR –GUIDELINES*).

### **Santa Monica, California:**

1. The LEED Green Building Rating System was created by the United States Green Building Council (USGBC) and currently is available for New Commercial Construction and major Renovation Projects, Existing Buildings, Commercial Interiors, Core and Shell Developments, Homes and Neighborhood Developments. Each rating system alters due to outcome, but generally applies towards the following green measures: Site and Location, Sustainable Sites, Water Efficiency, Indoor Air Quality, Materials and Resources, Energy and Atmosphere, User Awareness and Innovation and Design Process. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. ([www.usgbc.org](http://www.usgbc.org)) (See *Appendix II – USGBC*)
2. Santa Monica Green Building Program (<http://greenbuildings.santa-monica.org/>) was begun in 1994. Santa Monica's City Council adopted the Santa Monica Sustainable City Program. This program was developed by the city's Task Force on the Environment. The Green Building Design and Construction Guidelines were developed over a three-year period by City staff and Sheltair Scientific Ltd., a sustainable design consultant team, with extensive input from the local design, construction and development community. The Guidelines include required and recommended practices that are intended to reduce life-cycle environmental impacts associated with the construction and operation of both commercial and municipal developments and major remodel projects in Santa Monica. They provide specific "green" design and construction strategies in the following topic areas: Building Site and Form, Landscaping, Transportation, Building Envelope and Space Planning, Building Materials, Water Systems, Electrical Systems, HVAC Systems, Control Systems, Construction Management, and Commissioning. Materials: Green Building Practices (See *Appendix I – SANTA MONICA, CA –GUIDELINES*). The Green Building Program considers these guidelines educational and considers LEED a third party rating system to which they tie their incentives. (See *INCENTIVES below*)
3. Two Santa Monica Municipal Code ordinances aim at higher environmental and resource performance of buildings than state or federal requirements. Requirements include energy, stormwater, recycled content materials and construction and demolition waste recycling. Santa Monica's two building performance ordinances focus on reducing energy consumption and runoff of untreated storm water: *Building Energy Conservation Ordinance* and the *Storm water Management Performance Ordinance*. (<http://greenbuildings.santa-monica.org/>) (See *Appendix I – SANTA MONICA, CA –ORDINANCE*)
4. Incentives: Expedited Permitting for LEED Buildings and Green Building Grants. Launched in 2004 the grants program promotes LEED™ certified buildings and Innovative Green Building Technologies. Grants for LEED™ (LEED-NC™) certified buildings range from \$20,000 to \$35,000 depending on the level of certification. Innovative Technology Grants will cover 50% of project costs up to \$5000 for new construction or renovation projects that involve cutting edge energy efficiency or urban runoff mitigation technologies. Materials Available include: LEED™ Green Building Grants Program Details, Innovative Technologies Grants Program Details, Green Building Grants Application, Innovative Technologies Grant - Performance Levels (See *Appendix I – SANTA MONICA, CA –GRANTS*).
5. Green Building Resource Center is [(310) 452-7677] is operated by Global Green, USA with the support of the City of Santa Monica. The Center has samples of environmentally preferable building materials, informational resources, referral lists of green architects and consultants, and staff to answer visitors' questions. Regular monthly seminars will also be hosted at the Center.

6. Residential and Commercial Performance Standards: The Santa Monica Green Building Guide provides education and considerations and detailed measures for green building followed by a voluntary checklist for accomplishing a green building. (See *Appendix I – SANTA MONICA, CA –GUIDELINES*) The Santa Monica Green Building Department considers these guidelines education and considers LEED-homes and LEED-New Construction a third party rating system to which they tie their incentives. (See *INCENTIVES above*)
7. Green Affordable Housing Checklist is strongly encouraged. It contains 18 basic criteria for environmentally sensitive building. The creation of the affordable housing guidelines were inspired by the Green Building program but were actually created for the Housing Division. (See *Appendix I – SANTA MONICA, CA –GUIDELINES*)

### **San Francisco, California:**

1. The LEED Green Building Rating System was created by the United States Green Building Council (USGBC) and currently is available for New Commercial Construction and major Renovation Projects, Existing Buildings, Commercial Interiors, Core and Shell Developments, Homes and Neighborhood Developments. Each rating system alters due to outcome, but generally applies towards the following green measures: Site and Location, Sustainable Sites, Water Efficiency, Indoor Air Quality, Materials and Resources, Energy and Atmosphere, User Awareness and Innovation and Design Process. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. ([www.usgbc.org](http://www.usgbc.org)) (See *Appendix II – USGBC*)
2. Once approved by the Department of Building Inspection and the Department of Planning, beginning October 2006, all LEED-Gold Projects will receive a priority plan review.
3. Ordinance 88-04 (See *Appendix I – SAN FRANCISCO, CA –ORDINANCE*) allows that city buildings under 5,000 sq.ft. to request a waiver form.
4. The Department of the Environment's ([www.sfenvironment.com](http://www.sfenvironment.com)) mission works to improve environmental well being from “energy issues” to “urban forestry”. They provide public education and outreach to the community on environmental issues, review and make recommendations on proposed City legislation to include long-term environmental goals, work to increase visibility of local environmental issues and coordinate the work of city environmental services for increased effectiveness. Their Green Building sector offers a Green Building Resource Guide, Green Remodeling Guide, San Francisco Municipal Building Compliance Guide, progress reports, training, toolkits and classes (See *Appendix I – SAN FRANCISCO, CA –GUIDELINES*). They are a sponsor of the West Coast Green Residential Conference and Expo ([www.westcoastgreen.com](http://www.westcoastgreen.com))
5. Resource Efficient Building Task Force (REB): Chapter 7 of the Environment Code created the Resource Efficient Building (REB) Task Force, an interagency advisory body to guide the development of City green building standards, to provide oversight to the implementation of these standards, and to promote communication among City departments regarding green building issues. The interdepartmental force consists of one member of the public and representatives from 10 City departments.
6. San Francisco Municipal Building Compliance Guide: This 170 page guide identifies the key goals in making city building green. It lists requirements central to Chapter 7 of the Environmental Code and lists the LEED certification process with “Likely Points for San Francisco Projects” highlighted and step-by-step instructions for compliance. (See *Appendix I – SAN FRANCISCO, CA –GUIDELINES*)

7. Chapter 7 of the Environmental Code: The Resource-Efficient Building (REB) Ordinance went into effect in July of 1999, creating Chapter 7 of the City’s Environmental Code. The Ordinance (Section 705 and 706) calls for water conservation, lighting efficiency improvements, product information, recycling information and office space recycling, indoor air quality management plan, construction and demolition waste management plans, The ordinance established the Green Building Program in the Department of the Environment and created the Resource Efficient Building Task Force. The Code requires LEED-Silver certification for all new municipal construction projects, including city owned facilities and leaseholds.
8. SF GreenPRINT (San Francisco Green Building Project Reporting and Information Tool). This City intranet-based application monitors the design and construction process of green buildings. It was designed for use by City staff working on all phases of municipal building projects. SF Environment developed GreenPRINT in collaboration with the San Francisco Bureau of Engineering/Department of Public Works, with generous grant funding provided by EPA Region 9. (<http://www.sfgreenprint.org/>) (See *Appendix I – SAN FRANCISCO, CA –GREENPRINT*)
9. The Green Building Resource Guide & the Green Remodeling Guide: These guides were developed to offer builders, homeowners and municipalities a tool to assess how environmentally friendly or “green” a home is. It is also the basis of GreenPoint Rated, a third-party home rating program offered by Build It Green. ([www.builditgreen.org](http://www.builditgreen.org), [www.stopwaste.org](http://www.stopwaste.org))
10. Build-it-Green: ([www.builditgreen.org](http://www.builditgreen.org)) is a professional non-profit membership organization whose mission is to promote healthy, energy and resource-efficient buildings in California. Build It Green provides strategic assistance to local governments for developing, promoting, and implementing their green building programs. They fosters collaboration with key stakeholder groups to accelerate the adoption of green building practices, policies, and programs. Also see “Local Green Building Initiatives in Northern California-Survey Results” (See *Appendix I – SAN FRANCISCO, CA –Build-it-Green*)

### MATRIX B: GREEN RATING TOOLS

DESIGN & CONSTRUCTION TOOLS <sup>1</sup>	LEED-NC <sup>2</sup> – new construction	LEED-H <sup>3</sup> - homes	NAHB <sup>4</sup> – green home building guidelines	Austin <sup>5</sup> - Green Rating Tool (com)	Austin <sup>5</sup> - Green Rating Tool (res)	Scottsdale <sup>6</sup> - Commerical Green Building	Scottsdale <sup>6</sup> -Green Rating - residential	Boulder <sup>7</sup> -Green Points Program	Aspen <sup>8</sup> -Efficient Building Program	Portland <sup>9</sup> – Affordable Housing	Portland <sup>9</sup> – Residential	Santa Monica <sup>10</sup> –Affordable Housing	Santa Monica <sup>10</sup> - guidelines	San Francisco <sup>11</sup> – Guidelines-new home	San Francisco <sup>11</sup> – Municipal	Cost of use <sup>12</sup>
<b>Sustainable Sites</b>																
Site Inventory										●						1
Construction Activity Pollution Prevention/erosion	●	●	☀	☀		●				●	☀		☀			2
Site Selection (avoid sensitive areas)	☀	☀	☀	☀		●				●					●	0
Building Orientation/layout			☀			☀	☀	☀	☀	●	☀		☀	☀		0
Min. slope disturbance			☀				☀									0
Compact Development	☀	☀	☀	☀	☀		☀							☀		0
Infill Site			☀	☀		☀										0
Commercial/Public Connectivity (infrastructure)	☀	☀		☀	☀	☀			●	☀				☀		0
Mixed-use development				☀										☀		0
Brownfield Redevelopment	☀		☀	☀												1
Greyfield Site			☀													1
Alternative Transportation (public)	☀	☀		☀	☀	☀				☀				☀		0
Alternative Transportation (bicycle)	☀			☀		☀				●						1
Alternative Transportation (low emitting/fuel efficient)	☀							☀	☀							1
Alternative transportation (parking capacity)	☀		☀	☀		●				☀						0
Site Development (protect or restore habitat)	☀	●	☀	☀	☀	☀			☀		☀		☀	☀		1
Site Development (Maximize Open Space)	☀			☀		☀										0
Storm water Design	☀		☀	●		●	☀	☀	☀	●	☀		☀			2
Permeable Materials	☀	●	☀	☀	☀	☀	☀		☀	☀	☀			☀		3
Heat Island Effect (shading)	☀	☀		●		●	☀		☀		☀		☀	☀		2
Reflective Surfaces (SRI/energy star)	☀		☀	☀	☀	●	☀		☀		☀		☀	☀		1





Construction Waste Management/donation	☀	●	☀		●	☀		●	☀		☀		●		●	☀		☀		☀	●		2	
Material Reuse	☀		☀		☀		●	☀		☀		☀	☀		☀	☀		☀		☀	●		2	
Recycled Content	☀	☀	☀		☀	☀		●	☀		☀		☀		●	☀		☀	☀		☀	●		2
Regional Materials (500 m.)	☀	☀	☀		☀	☀		●							☀	☀							2	
Rapidly Renewable Materials	☀	☀	☀		☀	☀		☀			☀		☀			☀			☀		☀		2	
LRV valued interior surfaces									●														2	
Carpeting: none or min.		☀			☀			☀															0	
Green Label Plus carpet	☀	☀	☀		☀			☀	☀		☀												2	
Certified Wood (FSC)	☀	☀	☀		☀	☀		☀	☀		☀		☀	☀		☀	☀		☀				3	
Certified Wood (SFI )			☀					☀	☀				☀	☀									3	
Recycled plastic or non-CAA treated wood (exterior)											☀		☀			☀	☀		☀				2	
Engineered Lumber or OSB/similar					☀			☀		☀		●		●	☀		☀	☀		☀			2	
Integrated wall/framing systems (ICF, SIPS, etc)			☀		☀		☀	☀		☀		☀	☀		☀	☀		☀	☀		☀		3	
No Tropical Woods		●						☀															0	
No stucco netting on masonry or similar								☀															0	
Integrally colored stucco								☀							☀								1	
CMU, adobe, etc unfinished								☀															0	
Frost-protected shallow footing											☀												1	
Low Emitting Exterior Materials					☀			☀		☀		☀	☀		☀	☀		☀	☀				2	
<b>Indoor Environmental Quality</b>																								
IA Package (Energy Star, SMACNA, ect)		☀			☀			●															3	
Min. IEQ Performance (ASHRAE)	●							●													●		3	
Tobacco Smoke Control/CO monitor	●	●			☀	☀		●	●		☀		●		☀	☀		☀					1	
Fireplace w/ outside air, closed combustion		●	☀			●		☀							☀		☀		☀		☀		3	
HVAC and DHW equip. closed or direct/power vent		●	☀		☀			●		☀		●						☀					3	
Outdoor Air Delivery/Monitoring	☀	●	☀		☀																		3	
Increased Ventilation (ASHRAE)	☀				☀		☀	☀				☀											3	
Local exhaust Kitchen and bath fans		●	☀		☀			●						●	☀		☀		☀		☀		2	
Air Ventilation/Distribution		●	☀		☀	☀		☀		☀		☀		●									2	
Humidity Control (analyze and installed system)		☀	☀		☀	☀		☀															3	
Air Filtering		●	☀		●		●		☀		☀		●	☀		☀		☀		☀			2	
Moisture Preventions			☀		☀	●		☀										☀			●		2	
No Plumbing in Ext. walls			☀																				0	
Insulate cold water lines			☀												☀		☀		☀				1	



## NOTES:

11. The Construction & Design Tools listed are based on selected popular green building programs and selected green building programs' guidelines and checklists. Tools are divided into seven categories frequently addressed in green building practices. Voluntary measures (☼) and Mandatory measures (●) are listed based on program information. Much of the information gathered overlap each other and with consideration of use and performance, were added to the above matrix. Definitions of the tools' use can best be understood by referring to the selected guideline/checklist. Definitions vary slightly from program to program. Program guidelines are subject to change, consult the selected program for up-to-date information. This matrix is to serve as a current (November 2006) preview of green building tools and practices. The information within should not be substituted for the actual listed program.
12. The LEED-New Construction (LEED-NC) Green Building Rating System was created by the United States Green Building Council (USGBC). Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. ([www.usgbc.org](http://www.usgbc.org)) This program is the most widely accepted program with 20 states and over 55 cities adopting LEED building standards. (See *Appendix II – USGBC*).
13. The LEED-Homes (LEED-H) Green Building Rating System was created by the United States Green Building Council (USGBC) and is currently in pilot phase. Based on points achieved, projects can achieve Certified, Silver, Gold or Platinum. With LEED-H in pilot phase, criteria are up for re-evaluation. (See [www.usgbc.org](http://www.usgbc.org) for current checklist)
14. National Association of Home Builders (NAHB): This nation wide organization has put together a user guide with guidelines for creating a green residence. Points are accumulated from the following the guidelines' checklist to achieve a rating of Bronze, Silver or Gold. The New Mexico Home Builders Association has compiled a more regional guideline. (See [www.nahb.org](http://www.nahb.org))
15. The Austin Energy Green Building Program created the Austin Energy Green Building Rating Tool. It is available for Commercial, Multi-family and Single-Family projects. Guidelines are divided into Basic requirements and voluntary measures ([www.ci.austin.tx.us/greenbuilder](http://www.ci.austin.tx.us/greenbuilder)) (See *Appendix I - AUSTIN, TX – RATING TOOLS*)
16. The Scottsdale Green Building Program created the Scottsdale Green Building Rating Checklist and was recently updated in August of 2006. The checklist includes: a City adoption of energy code requirements as part of the International Residential Code and International Energy Conservation Codes; EPA ban on chromated copper arsenate (CCA) treated wood for residential uses; the National Association of Home Builders *Model Green Home Building Guidelines* and the US Green Building Council pilot *LEED for Homes* green program. ([www.scottsdaleAZ.gov/greenbuilding](http://www.scottsdaleAZ.gov/greenbuilding)) (See *Appendix I – SCOTTSDALE, AZ – GUIDELINES*)
17. The City of Boulder Green Points Building Program created the Green Points Rating. This mandatory guideline lists measures that builders can “pick and choose” to obtain a rating. The Boulder Green Points Building Program will be updating their Residential Building Guide in late 2006. ([www.bouldergreenpoints.com](http://www.bouldergreenpoints.com)) (See *Appendix I – BOULDER, CO –GUIDELINES*).
18. The Aspen Efficient Building Program created a program for residential (one, two and multi-family) projects which includes a checklist of mandatory and voluntary measures. The program is “point-based” wherein a minimum number of points must be reached to qualify. Measures are identified in the Efficient Building Program guidelines that are mandatory compliance (required) for publicly-funded affordable housing (PFAH) projects. This requirement creates affordable housing projects that are rated above the standards for the typical residential project. ([http://www.aspenpitkin.com/depts/41/bldg\\_efficient.cfm](http://www.aspenpitkin.com/depts/41/bldg_efficient.cfm)) (See *Appendix I – ASPEN, CO –GUIDELINES*).
19. The G/Rated Green Building Program created the Greening Portland's Affordable Housing Guide which contains mandatory and voluntary measures. The guidelines are broken into six major categories with 66 strategies. Each strategy indicates whether or not it is Threshold or Voluntary. If it is a Threshold strategy, it is required for all projects seeking funding from. The Green Homes Remodeling Guide and Tenant Improvement Guide contain tips and checklists for green building and remodeling. This guide is

voluntary only. (See *Appendix I – PORTLAND, OR –GUIDELINES*)  
(<http://www.portlandonline.com/osd/>)

20. The Santa Monica Green Building Program distributes the Santa Monica Green Building Guide. This guide provides a voluntary checklist for accomplishing a green building. The Santa Monica Green Building Department considers these guidelines education and considers LEED-homes and LEED-New Construction a third party rating system to which they tie their incentives. The Green Affordable Housing Checklist is strongly encouraged. It contains 18 basic criteria for environmentally sensitive building. The creation of the affordable housing guidelines were inspired by the Green Building program but were actually created for the Housing Division. (See *Appendix I – SANTA MONICA, CA –GUIDELINE*).  
(<http://greenbuildings.santa-monica.org/>)
21. The San Francisco Department of the Environment distributes the Green Building Resource Guide, Green Remodeling Guide. This voluntary measure is also the basis of GreenPoint Rated, a third-party home rating program offered by Build It Green. The San Francisco Municipal Building Compliance Guide is a mandatory measure identifying the key goals in making city building green. It lists requirements central to Chapter 7 of the Environmental Code and lists the LEED certification process with “Likely Points for San Francisco Projects” highlighted and step-by-step instructions for compliance. (See *Appendix I – SAN FRANCISCO, CA –GUIDELINES*) ([www.sfenvironment.com](http://www.sfenvironment.com), [www.builditgreen.org](http://www.builditgreen.org))
22. Cost of Use: Values are based on a 0-4 scale; 0 being no cost - 4 being higher cost. **Value is based on the overall increase in cost based on standard construction practices.** Values shown are estimates only; value can fluctuate depending on region, material costs and associated fees. It is expected that an increase application in an above tool can lower the cost, while a first-time use can expect a higher cost.

## MATRIX B-1: GREEN RATING TOOLS - MANDATORY

The below list is a condensed version of *Matrix B: Green Rating Tools* showing the Mandatory measures. The below tools have been selected by more than one of the selected green building programs as a mandatory measure for all guidelines (including affordable housing, commercial, residential). Refer to the individual programs for their requirements on mandatory versus voluntary measures. For more detailed information on the program use of the below tools, refer to *Matrix B: Green Rating Tools*.

<b>Sustainable Sites</b>
Construction Activity Pollution Prevention/erosion
Site Selection (avoid sensitive areas)
Storm water Design
Heat Island Effect (shading)
Entrances Protected from sun/water exposure
<b>Water Efficiency</b>
Water Efficient Landscaping (irrigation controls)
Indoor Water use reduction
<b>Energy &amp; Atmosphere</b>
Commissioning of Building Energy Systems
Energy Star Rated
Minimum Energy Performance (envelope, HVAC, lighting)
Space heating and cooling sized according to load (Energy Star/ Manual J)
Hot Water Distribution (loop/central manifold), min branch lines, R4 insulation, ½” pipes or HWH 20’ max
Duct system sized and adequate air flow/sealed
Continuous Air/Thermal Barrier
Windows (Energy Star)
Lighting Fixtures/energy star
Appliances (ref, fans, dish, clothes washer, thermostat)
Ceiling Fans Installed (rough-in)
Energy Performance (above baseline/comparison)
Refrigerant Management
Measurement & verification: on-going accountability
<b>Materials &amp; Resources</b>
Efficient Framing / no extra lumber (OVE)
Storage & Collection of Recyclables
Construction Waste Management/donation
Material Reuse
Recycled Content
Engineered Lumber or OSB/similar
<b>Indoor Environmental Quality</b>
Min. IEQ Performance (ASHRAE)
Tobacco Smoke Control/CO monitor
Fireplace w/ outside air, closed combustion
HVAC and DHW equip. closed or direct/power vent
Local exhaust Kitchen and bath fans
Air Ventilation/Distribution
Air Filtering
Moisture Preventions
Construction IAQ Manag. Plan / seal ducts / testing
Garage: no ducts/equipment, tightly sealed walls/vented or not attached to building
Low-Emitting Materials (low VOC)
Controllability of Systems (lighting)
Daylight & views
<b>Occupant Awareness</b>
Owners Manual and Walkthru

## MATRIX B-2: GREEN RATING TOOLS -

The below list is a version of *Matrix B: Green Rating Tools* showing the Priority measures. The below tools have been listed in priority of use by the selected green building programs (including affordable housing, commercial, residential). By looking at all tools (both mandatory and voluntary measures) the below list shows from highest priority to least (most popular to least popular) tools and design measures. Refer to the individual programs for their requirements on mandatory versus voluntary measures. For more detailed information on the program use of the below tools, refer to *Matrix B: Green Rating Tools*.

Tools listed Higher Priority (most popular) down to the Least Priority (less popular) Tools and Design Measures

<b>15 Water Efficiency</b> Water Efficient Landscaping (irrigation controls)
<b>15 Materials &amp; Resources</b> Recycled Content
<b>14 Energy &amp; Atmosphere</b> On-Site renewable Energy (solar hot water, panels, etc)
<b>14 Materials &amp; Resources</b> Construction Waste Management/donation
<b>14 Materials &amp; Resources</b> Certified Wood (FSC)
<b>14 Indoor Environmental Quality</b> Low-Emitting Materials (low VOC)
<b>13 Water Efficiency</b> Indoor Water use reduction
<b>13 Energy &amp; Atmosphere</b> Energy Efficient HWH/HRV system
<b>13 Materials &amp; Resources</b> Material Reuse
<b>12 Energy &amp; Atmosphere</b> Lighting Fixtures/energy star
<b>11 Sustainable Sites</b> Permeable Materials
<b>11 Energy &amp; Atmosphere</b> Appliances (ref, fans, dish, clothes washer, thermostat)
<b>11 Materials &amp; Resources</b> Rapidly Renewable Materials
<b>11 Materials &amp; Resources</b> Integrated wall/framing systems (ICF, SIPS, etc)
<b>11 Indoor Environmental Quality</b> Tobacco Smoke Control/CO monitor
<b>10 Sustainable Sites</b> Site Development (protect or restore habitat)
<b>10 Sustainable Sites</b> Storm water Design
<b>10 Sustainable Sites</b> Reflective Surfaces (SRI/energy star)
<b>10 Water Efficiency</b> Rainwater Harvesting/diversion
<b>10 Materials &amp; Resources</b> Storage & Collection of Recyclables
<b>10 Indoor Environmental Quality</b> Air Filtering
<b>10 Indoor Environmental Quality</b> Garage: no ducts/equipment, tightly sealed walls/vented or not attached to building
<b>10 Indoor Environmental Quality</b> Controllability of Systems (lighting)
<b>9 Sustainable Sites</b> Heat Island Effect (shading)
<b>9 Sustainable Sites</b> Building Orientation/layout
<b>9 Energy &amp; Atmosphere</b> Hot Water Distribution (loop/central manifold), min branch lines, R4 insulation, ½" pipes or HWH 20' max
<b>9 Energy &amp; Atmosphere</b> Windows (Energy Star)
<b>9 Energy &amp; Atmosphere</b> Whole house fan
<b>9 Energy &amp; Atmosphere</b> Roof overhangs
<b>9 Materials &amp; Resources</b> Engineered Lumber or OSB/similar
<b>9 Indoor Environmental Quality</b> Construction IAQ Manag. Plan / seal ducts / testing
<b>9 Indoor Environmental Quality</b> Controllability of Systems (thermal comfort)
<b>8 Energy &amp; Atmosphere</b> Ground source, indirect evaporative, ice or radiant heat/cool
<b>8 Energy &amp; Atmosphere</b> Duct system sized and adequate air flow/sealed
<b>8 Sustainable Sites</b> Construction Activity Pollution Prevention/erosion
<b>8 Energy &amp; Atmosphere</b> Building Shaded
<b>8 Sustainable Sites</b> Commercial/Public Connectivity (infrastructure)
<b>8 Energy &amp; Atmosphere</b> Green Power/Net – zero energy
<b>8 Materials &amp; Resources</b> Efficient Framing / no extra lumber (OVE)
<b>8 Materials &amp; Resources</b> Regional Materials (500 m.)
<b>8 Indoor Environmental Quality</b> Local exhaust Kitchen and bath fans
<b>8 Indoor Environmental Quality</b> Air Ventilation/Distribution
<b>7 Sustainable Sites</b> Alternative Transportation (public)
<b>7 Sustainable Sites</b> Site Selection (avoid sensitive areas)
<b>7 Energy &amp; Atmosphere</b> Insulation Installation
<b>7 Energy &amp; Atmosphere</b> Continuous Air/Thermal Barrier
<b>7 Sustainable Sites</b> Compact Development

7	<b>Energy &amp; Atmosphere</b>	Window shades (exterior)
7	<b>Materials &amp; Resources</b>	Green Label Plus carpet
7	<b>Materials &amp; Resources</b>	Low Emitting Exterior Materials
7	<b>Indoor Environmental Quality</b>	Fireplace w/ outside air, closed combustion
7	<b>Indoor Environmental Quality</b>	HVAC and DHW equip. closed or direct/power vent
7	<b>Indoor Environmental Quality</b>	Thermal Comfort (design)
7	<b>Innovation &amp; Design Process</b>	Innovation in Design
6	<b>Sustainable Sites</b>	Pest Control
6	<b>Energy &amp; Atmosphere</b>	Ceiling Fans Installed (rough-in)
6	<b>Energy &amp; Atmosphere</b>	Bio-based/natural insulation
6	<b>Energy &amp; Atmosphere</b>	Air Infiltration Leakage Test
6	<b>Water Efficiency</b>	Innovative Wastewater technologies (grey-water)
6	<b>Energy &amp; Atmosphere</b>	Refrigerant Management
6	<b>Materials &amp; Resources</b>	Building/development Size
6	<b>Materials &amp; Resources</b>	Structural floor is finished fl.
6	<b>Materials &amp; Resources</b>	Recycled plastic or non-CAA treated wood (exterior)
6	<b>Indoor Environmental Quality</b>	Moisture Preventions
6	<b>Indoor Environmental Quality</b>	Radon Protection
6	<b>Indoor Environmental Quality</b>	Toxic finishes sealed, cabinets pre-finished off-site
5	<b>Sustainable Sites</b>	Alternative transportation (parking capacity)
5	<b>Energy &amp; Atmosphere</b>	Minimum Energy Performance (envelope, HVAC, lighting)
5	<b>Energy &amp; Atmosphere</b>	Space heating and cooling sized according to load (Energy Star/ Manual J)
5	<b>Energy &amp; Atmosphere</b>	Foam insulation
5	<b>Energy &amp; Atmosphere</b>	Vegetated Roof
5	<b>Energy &amp; Atmosphere</b>	Energy Performance (above baseline/comparison)
5	<b>Energy &amp; Atmosphere</b>	On-site renewable-rough-in
5	<b>Energy &amp; Atmosphere</b>	Measurement & verification: on-going accountability
5	<b>Materials &amp; Resources</b>	Certified Wood (SFI )
5	<b>Indoor Environmental Quality</b>	Increased Ventilation (ASHRAE)
5	<b>Indoor Environmental Quality</b>	Humidity Control (analyze and installed system)
5	<b>Indoor Environmental Quality</b>	Daylight & views
5	<b>Occupant Awareness</b>	Owners Manual and Walkthru
4	<b>Sustainable Sites</b>	Alternative Transportation (bicycle)
4	<b>Sustainable Sites</b>	Light Pollution reduction
4	<b>Sustainable Sites</b>	Entrances Protected from sun/water exposure
4	<b>Energy &amp; Atmosphere</b>	Commissioning of Building Energy Systems
4	<b>Energy &amp; Atmosphere</b>	Cooling Equipment: min 12-15 SEER
4	<b>Energy &amp; Atmosphere</b>	Advanced Roofing design (weight, warranty)
4	<b>Materials &amp; Resources</b>	Site disassemble not demolishing
4	<b>Indoor Environmental Quality</b>	Outdoor Air Delivery/ Monitoring
4	<b>Indoor Environmental Quality</b>	Insulate cold water lines
4	<b>Indoor Environmental Quality</b>	Permanent walk off mats
4	<b>Indoor Environmental Quality</b>	Indoor Chemical & Pollutant Source Control
3	<b>Sustainable Sites</b>	Alternative Transportation (low emitting/fuel efficient)
3	<b>Sustainable Sites</b>	Site Development (Maximize Open Space)
3	<b>Sustainable Sites</b>	Infill Site
3	<b>Sustainable Sites</b>	Brownfield Redevelopment
3	<b>Sustainable Sites</b>	Outdoor Gathering or Gardening Space
3	<b>Energy &amp; Atmosphere</b>	Energy Star Rated
3	<b>Energy &amp; Atmosphere</b>	Duct Leakage Test
3	<b>Energy &amp; Atmosphere</b>	Laundry room drying rack or clothes line
3	<b>Energy &amp; Atmosphere</b>	Thermal Mass
3	<b>Energy &amp; Atmosphere</b>	Window shades (interior)
3	<b>Materials &amp; Resources</b>	Durability (plan)
3	<b>Materials &amp; Resources</b>	Building Reuse
3	<b>Materials &amp; Resources</b>	Carpeting: none or min.
3	<b>Indoor Environmental Quality</b>	IA Package (Energy Star, SMACNA, ect)
3	<b>Indoor Environmental Quality</b>	Min. IEQ Performance (ASHRAE)
3	<b>Indoor Environmental Quality</b>	Central Vacuum

<b>3</b>	<b>Indoor Environmental Quality</b>	Thermal Comfort (verification)
<b>3</b>	<b>Indoor Environmental Quality</b>	Acoustic Quality
<b>3</b>	<b>Innovation &amp; Design Process</b>	Integrated Design Team
<b>3</b>	<b>Innovation &amp; Design Process</b>	Sustainability Goal Review
<b>3</b>	<b>Innovation &amp; Design Process</b>	LEED Accredited Professional/or member of local green building program
<b>2</b>	<b>Sustainable Sites</b>	Termite mitigation
<b>2</b>	<b>Sustainable Sites</b>	Min. slope disturbance
<b>2</b>	<b>Sustainable Sites</b>	Mixed-use development
<b>2</b>	<b>Sustainable Sites</b>	Composting
<b>2</b>	<b>Sustainable Sites</b>	Tree Planting
<b>2</b>	<b>Sustainable Sites</b>	Solar access (provisions, restrictions and landscape)
<b>2</b>	<b>Water Efficiency</b>	Building perimeter drains/flushing
<b>2</b>	<b>Energy &amp; Atmosphere</b>	Insulated headers
<b>2</b>	<b>Energy &amp; Atmosphere</b>	No skylights or min.
<b>2</b>	<b>Energy &amp; Atmosphere</b>	Enhanced Commissioning
<b>2</b>	<b>Materials &amp; Resources</b>	No Tropical Woods
<b>2</b>	<b>Materials &amp; Resources</b>	Integrally colored stucco
<b>2</b>	<b>Occupant Awareness</b>	Advanced with trainings
<b>1</b>	<b>Sustainable Sites</b>	Site Inventory
<b>1</b>	<b>Sustainable Sites</b>	Greyfield Site
<b>1</b>	<b>Sustainable Sites</b>	Exterior recycling area
<b>1</b>	<b>Energy &amp; Atmosphere</b>	No A/C
<b>1</b>	<b>Energy &amp; Atmosphere</b>	Thermally separate living from storage, etc.
<b>1</b>	<b>Energy &amp; Atmosphere</b>	Enhanced Refrigerants Mang./ no refrigerants
<b>1</b>	<b>Energy &amp; Atmosphere</b>	Tie into district cooling/heating loop
<b>1</b>	<b>Materials &amp; Resources</b>	No wood trim, molding, etc
<b>1</b>	<b>Materials &amp; Resources</b>	LRV valued interior surfaces
<b>1</b>	<b>Materials &amp; Resources</b>	No stucco netting on masonry or similar
<b>1</b>	<b>Materials &amp; Resources</b>	CMU, adobe, etc unfinished
<b>1</b>	<b>Materials &amp; Resources</b>	Frost-protected shallow footing
<b>1</b>	<b>Indoor Environmental Quality</b>	No Plumbing in Ext. walls
<b>1</b>	<b>Indoor Environmental Quality</b>	Point of use/entry water treatment system
<b>1</b>	<b>Indoor Environmental Quality</b>	Electric Panels 10' from living
<b>1</b>	<b>Indoor Environmental Quality</b>	Age-in-place safety (lever handles, grab bars, etc)
<b>1</b>	<b>Innovation &amp; Design Process</b>	Financial Investment Return Review
<b>1</b>	<b>Innovation &amp; Design Process</b>	Builder Guarantee of energy performance

# GREEN BUILDER COMMENTS

In conducting this research a sampling of builders and contractors were contacted for their reflection on green building program satisfaction, costs, concerns and potentials. Below are listed common trends that were found to be reoccurring.

## **Program and Guidelines:**

As shown in the matrixes, the green building programs and guidelines express a holistic approach-looking at the larger building site and location of the building project to selecting the interior finishes. Several builders reflected that they were more concerned about the “building” technologies, as they were builders, and didn’t pay much attention to anything outside those parameters. Issues such as site location and infrastructure or landscaping didn’t feel necessary in the “performance of a building.”

Another comment focused on the prescriptive manner the guidelines and policies were generated. Suggestion was that the encouragement in building be more performance based.

Builders also expressed a concern over the point ratings for certain tools and its equity with the financial capacity to fulfill the requirement. For example, several high efficiency heaters or photovoltaic systems might award a builder 2 points, when the cost to implement that measure was in the thousands. Whereas, installing Energy Star rated appliances could give one the same amount of points at nearly little the extra building cost.

Another point made is in regard to the number of “green building guidelines” being created nationally, when the USGBC and LEED have created well document and continually well used and tested guidelines. With many builders already familiar or utilizing the USGBC guidelines, the suggestion was that any new guidelines to be created, be based on LEED, yet regionalized to fit Santa Fe and its environmental concerns.

## **Efficiency of Program:**

It was discovered that based on where in the city the green building program was housed, had an effect on how efficient the program was executed. Programs that worked directly with the Building Department had a greater satisfaction with response time (permit review, etc), while a program outside of that department had a harder time satisfying such things as builder incentives.

## **Incentives:**

Again, as stated above, it was found that builders had a better chance of getting the “incentives” promised, such as expedited plan review, when the program was operated out of the Building Department.

## **Measurable Enforcement:**

A concern of fairly measuring these requirements on paper and on site was voiced. The reputation of the program is dependent on the enforcement of guideline standards. This all could be concentrated with education on green building guidelines and tools as well as prepared inspectors in the field. All felt it is the responsibility of the Green Building Program to provide the education to maintain the integrity of the program.

**Education and Training:**

As mentioned above, all the green building programs offer education and training sessions for builders and the general public. This was highly praised by the builders.

**Technologies**

In this ever-evolving field of green building, more efficient systems and techniques are being introduced. Most builders see the “green building standards” as just good common sense building. New products being introduced need to be verified prior to implementation.

**Costs and Challenges:**

While ultimately the concern of every builder, the cost of implementing these tools rated as a high concern. Most of the builders work with higher-end projects where cost typically allows for higher priced systems. Some of the higher cost items include:

Solar Power: Photovoltaic panels and solar heaters

Mechanical Systems: Air conditioner SEERS rating, high-efficiency heaters

Third-party testing or commissioning of green building systems

Some of the challenges of note:

Design Team: making sure the building project is designed with the knowledge of green building was vital in executing the actual construction of the building. This would require that the architects, designers, engineers and subcontractors are knowledgeable in creating the building documents and specifications. Complications included:

-poor design

-improperly sized mechanical loads

Material Availability: While the industry is quickly evolving to react to the demand for green building, FSC certified wood was voiced as the most difficult product to utilize in construction.

**Successes:**

Most of the builders voiced that the “green building tools” were simply just good building practices that they have been doing from the start. Many found an interest in fine-tuning a high efficient building and appreciated the support of the green building program in enforcing better building standards.

Many found that the cost of green building materials were not a significant increase to the materials they were previously specifying. Over time the products have been made more available.

A comment on the cost of green building lead a builder to comment that “builders shouldn’t complain.” He stated that high efficiency homes will “in fact create a new market...more construction and more jobs and more profits.” The added cost to materials should trickle down to the builder. For the client, they are getting a better, safer and more efficient building. This means, “lower utility bills for more money to spend on a mortgage. Which means a homeowner can finance these energy code items into their mortgage and deduct the interest.”

Incentives: Several builders agreed that making it incentive base will help to transfer the market. Local government can help encourage this evolution.

## NEW MEXICO GREEN BUILDING STATUS REPORT

To better understand the need for a green building initiative in the Santa Fe, included is a summary of the current green building programs, policies and organizations from the state of New Mexico.

### State Policy:

**Solar Market Development Tax Credit:** Tax Credits for installing an approved operating solar energy system (See *Appendix I – New Mexico –Solar Tax Credit*)

**New Mexico Building Energy Code:** State adopted version of the International Conference of Building Officials (ICBO) Uniform Building Codes for all building codes including all residential and commercial structures are required to comply with the New Mexico energy code.

**Executive Order (NO. 2004-019): Clean Energy State:** a declaration that New Mexico is a Clean Energy State and thus ordering the creation of a Clean Energy Development Council and a task force to work on initiatives for clean energy (See *Appendix I – New Mexico –Executive Order-Clean Energy State*)

**Executive Order (NO. 05-033): Climate Change and Green House Gas Reduction:** creates a Climate Change Action Council advising recommendations to the Governor’s office regarding climate change. The creation of a Climate Change Advisory Group is to present proposals to reduce New Mexico’s greenhouse emissions. (See *Appendix I – New Mexico –Executive Order-Climate Change*)

**Executive Order (2006-001): Energy Efficient Green Building Standards for State Buildings:** a declaration that all Executive Branch state agencies, including the Higher Education Department, to adopt the US Green Buildings Council’s LEED rating system. The act orders a “Public Schools Clean Energy Task Force” (See *Appendix I – New Mexico –Executive Order-Green Building*)

**Energy Efficient and Renewable Energy Bonding Act:** Is a State Bond Program establishes up to \$20 million in bonds that requires the development of a state plan for the installation of energy efficiency measures in state buildings and school district buildings.

**Executive Order (2005-049): Renewable Fuels in New Mexico State Government:** asks state agencies and public schools to obtain 15% of their transportation fuel from renewable fuels by 2010. Addresses other alternative fuels and transport requirements. (See *Appendix I – New Mexico –Executive Order-Renewable Fuels*)

**Interconnection Standards (Rule 571 and 570):** The rule includes a standard interconnection agreement for large PURPA class systems and small cogeneration (CHP) and renewable-energy

systems up to 10 kW. Rule 571 helps to encourage the use of small-scale, customer-owned renewable or alternative energy resources.

**Solar Rights Act:** 1978: “The legislature declares that the right to use the natural resource of solar energy is a property right, the exercise of which is to be encouraged and regulated by the laws of this state. Such property right shall be known as a solar right.”

([www.smartcommunities.ncat.org/codes/nmsolar.shtml](http://www.smartcommunities.ncat.org/codes/nmsolar.shtml))

**Line Extension Analysis:** Utilities are required to inform buyers on alternative energy systems to “remote customers with less than a 25-kW load who request line extensions.”

**Mandatory Utility Green Power Option (N.M. Stat. § 62-16-3 (2006):** Rule requires utilities to offer a voluntary renewable energy tariff (green pricing option for customers) and to develop an educational program communicating the benefits and availability of this option. The rule requires public utility companies to produce 5% of all energy they generate for New Mexico customers from solar, wind, hydropower, biomass, or geothermal sources by 2006. Generation from renewables must increase by at least 1% per year until the renewable portfolio standard (RPS) of 10% is attained in the year 2011.

**Net Metering (17.9.571.7 NMAC et seq):** Rule requiring all utilities to offer net metering to customers with cogeneration (CHP) facilities and small power producers with systems up to 10 kilowatts (kW) in capacity.

**Efficient Use of Energy Act of 2005:** requires public electric and natural gas utilities to implement cost-effective energy-reduction programs. ([legis.state.nm.us/Sessions/05%20Regular/bills/house/HB0619.pdf](http://legis.state.nm.us/Sessions/05%20Regular/bills/house/HB0619.pdf))

**The Renewable Energy Act (Renewables Portfolio Standard) SB 43 (2004):** Rules requiring investor-owned utilities to produce 5% of all the energy they generate for New Mexico customers using solar, wind, hydropower, biomass or geothermal sources by 2006. Generation from renewable sources must increase by at least 1% per year until the renewables portfolio standard (RPS) reaches 10% in 2011. The rules also require utilities to offer a voluntary renewable-energy tariff -- a green-power option for customers -- and to develop an educational program communicating the benefits and availability of this option.

([www.nmprc.state.nm.us/utility/utilitydivhome.htm](http://www.nmprc.state.nm.us/utility/utilitydivhome.htm))

**Active Water Resource Management (AWRM) Initiative:** Tools and elements needed to enable the State Engineer to actively manage the state’s limited water resources.

([www.ose.state.nm.us/water\\_info\\_awrm.html](http://www.ose.state.nm.us/water_info_awrm.html))

**New Mexico Mortgage Finance Authority** [www.housingnm.org](http://www.housingnm.org) Provides tax credits for Greening Low-Income Housing – New and remodel projects totaling “100 points”. See publication located on page 13:

[www.housingnm.org/publications/documents/pubMultHTC\\_2007\\_QAP\\_Final.pdf](http://www.housingnm.org/publications/documents/pubMultHTC_2007_QAP_Final.pdf)

### **Other Policies:**

ECMD Enabling Statute [Section 9-5A-4 NMSA 1978]  
Alternative Fuel Vehicle Acquisition Act [Sections 13-1B-1 to -7 NMSA 1978]  
Alternative Fuel Tax [Sections 7-16B-1 to 10 NMSA 1978]  
Electric Industry Restructuring Act [Section 62-3A-1 et seq. NMSA 1978]  
Public Facility Energy Efficiency Act [Sections 6-23-1 to -10 NMSA 1978]  
Geothermal Resources Conservation Act [Sections 71-5-1 to -24 NMSA 1978]  
Renewable Energy Production Tax Credit [Sections 7-2A-19 NMSA 1978]  
Solar Collector Standards Act [Sections 71-6-4 to -10 NMSA 1978]  
Solar Recordation Act [Sections 47-3-6 to 47-3-12 NMSA 1978]  
Solar Energy Development Act [Sections 71-6-1 to 71-6-3]  
New Mexico Attorney General Opinion, February 17, 1989, Re: Petroleum Violation Escrow Funds.

### **City and County Policy:**

#### **Albuquerque:**

**Policy:** The City of Albuquerque requirement to set aside 3 percent of a project's funding for capital improvement investments. Includes greenhouse gas emissions (GHG) reduction investments as a capital improvement.

Mayor Chávez signed the **U.S. Conference Mayors Climate Protection Agreement**

Executive Instruction No. 20: calls for Adopting Energy Efficient Green Building Performance "2030 Challenge" Targets for New Municipal Projects.

Mayor Chavez has begun collaborating with developers and builders to amend the local building administrative codes to foster and facilitate the development of high performance green buildings. The goal is to amend the codes by 2008.

**Albuquerque High Performance Buildings Ordinance** (O-07-73) will be introduced at the next City Council meeting on **Wednesday, February 21**, In addition to the Albuquerque High Performance Buildings Ordinance (PDF), this legislation proposes the adoption of the 2006 International Energy Conservation Code (IECC), expedited plan review for LEED certified projects, and amends the Wood burning Ordinance to include five additional materials – *garbage, paints, paint solvents, treated wood, and waste petroleum products* – that are prohibited from being burned.

**Albuquerque's Environmental Sustainability Program:** While not fully developed, the city website offers an excellent start to green the city of Albuquerque:

<http://www.cabq.gov/sustainability/sustainability>: John O'Connell, Albuquerque's Environmental Sustainability Program Manager: [joconnell@cabq.gov](mailto:joconnell@cabq.gov)

**Low-flow toilet Rebate:** announcement of raising of the rebate amount available for converting from high-flow toilets to low-flow toilets for 2007 to \$150. Residents who take advantage of the program receive a \$150.00 offset on their water bill. In 2008, the rebate will be reduced to \$125 and in 2009 it will be decreased to \$100. At the end of 2009, the toilet rebate program will end. For further information, please contact Katherine Yuhas, Water Conservation Officer with the Albuquerque Water Conservation Hotline, at 768-3655 / TTY 768-2474.

**Sustainability: A Town Hall on Albuquerque's Energy Future:** Feb 2006: Final report (See *Appendix III – New Mexico*)

**Village of Los Ranchos de Albuquerque:** Village Center Code, Ordinance 172: (See *Appendix I – New Mexico*)

### **Santa Fe:**

**Santa Fe County State 3 Water Shortage Emergency** Mandatory Water Use Restrictions (See *Appendix I – New Mexico – Santa Fe – Water Shortage*)

**Santa Fe County Water Conservation Ordinance 2002-13:** Residential and Commercial Water use restrictions. (See *Appendix I – New Mexico – Santa Fe – Water Conservation Ordinance*)

**Santa Fe County Water Harvesting Guidelines:** guidelines for outdoor water re-use. (See *Appendix I – New Mexico – Santa Fe – Water Harvesting Guidelines*)

**Toilet retro-fit Program 2002:** New Building permits require replacing old-fashioned toilets with newer, low-flow models.

**Water Harvesting Ordinance 2003-6, 2003:** requires that commercial developments collect all roof drainage into cisterns to be reused for landscape irrigation. All residential development is required to collect roof drainage from a minimum of 85% of roof area to be reused for landscape irrigation. (See *Appendix I – New Mexico – Santa Fe – Water Harvesting Ordinance*)

**Water Transfer Right Ordinance,** July 2005. Ordinance requires developers to transfer water rights to the city before obtaining a building permit.

### **Local Organizations and Programs:**

**Build Green New Mexico** (<http://www.buildgreennm.com/>) Build Green New Mexico and The New Mexico Home Owners Association have released a 235 page Green Home Building Guidelines (see *Appendix*). The guidelines address the main areas of green building including: Lot Design, Resource Efficiency, Energy Efficiency, Water Efficiency, Indoor Environmental Quality, Homeowner Awareness and Global Impact.

**Clean and Diversified Energy Advisory Committee (CDEAC):** An initiative spearhead by governors Richardson (NM), Freudenthal (WY), Schwarzenegger (CA) and Hoeven (ND) working for clean and diverse energy goals.

<http://www.westgov.org/wga/initiatives/cdeac/index.htm>

**Earth Care International:** Educates and empowers young people, and especially teenagers, to create a thriving, just and sustainable world. Released the Sustainable Santa Fe Resource Guide. [www.earthcare.org](http://www.earthcare.org)

**EcoVersity, Santa Fe:** An 11-acre campus serves as a demonstration site and a community building center for the promotion of "hands-on" learning and sustainable living. [www.ecoversity.org](http://www.ecoversity.org)

**Energy, Minerals and Natural Resources Department, State of New Mexico-Recycling:**  
Santa Fe: (505) 827-7474

**Habitat for Humanity ReStore:** Santa Fe [www.sfhfh.org](http://www.sfhfh.org)

**Homewise:** [www.homewise.org](http://www.homewise.org)

**Keep Albuquerque Beautiful,** Albuquerque, (505) 857-8280

**Keep New Mexico Beautiful:** <http://www.knmb.org/>

**Local Energy:** <http://www.localenergy.org/>

A nonprofit organization that helps communities develop local, renewable energy resources in ways that mitigate the hardships being created by the degradation of fossil energy resources.

**New Mexico Clean and Beautiful:** <http://www.nmcleanandbeautiful.org>

**NM Energy, Minerals and Natural Resources Department:** The Energy Conservation and Management Division (ECMD): <http://www.emnrd.state.nm.us/emnrd/ecmd/index.htm>  
([www.cleanenergynm.org](http://www.cleanenergynm.org))

**New Mexico Environment Department, Solid Waste Bureau,** Santa Fe, NM 87502  
(505) 827-0197

**New Mexico Green Builders:** <http://chapters.usgbc.org/newmexico/>, <http://www.greenerbuilding.org/>

**New Mexico Recycling Coalition:** <http://www.nmrecycle.org>

**PNM Solar PV Program:** Offers the purchases of REC's from customers as part of monthly billing. [www.pnm.com](http://www.pnm.com); PNM Sky Blue, Wind Energy for New Mexico [PNMSkyBlue@PNM.com](mailto:PNMSkyBlue@PNM.com)

**ReBuild New Mexico:** "Rebuild New Mexico (RNM) is a public private partnership supported in part by the US Department of Energy-Rebuild America Program and the State of New Mexico, Energy Conservation Management Division of the Energy, Minerals and Natural Resources Department. The mission is to increase energy efficiency in communities through innovation and education". <http://www.rebuildnewmexico.org/>

**Recycle Santa Fe:** [www.recyclesantafe.org](http://www.recyclesantafe.org)

**Santa Fe Community College:** [www.sfccnm.edu](http://www.sfccnm.edu)

**Santa Fe Conservation Trust:** [www.sfct.org](http://www.sfct.org)

**Santa Fe Water Conservation Office:** [www.santafenm.gov/waterwise](http://www.santafenm.gov/waterwise)

**Santa Fe Watershed Association:** [www.santafewatershed.org](http://www.santafewatershed.org)

**Sustain Taos:** “creates a sustainable quality of life by offering educational programs and practical solutions.” Offers annual Green Guide, Green Homes Tours and host annual Beaming Bioneers. <http://www.sustaintaos.org/>

**Sustainable Santa Fe Commission:** In 1998, the City Council created the Sustainable Santa Fe Commission, consisting of volunteers interested in discussing and researching sustainability in the community of Santa Fe.

**Taos Land Trust:** <http://taoslandtrust.org/Pages/>

**Transitions Radio Network:** “Features for a Changing World” [www.transradio.com](http://www.transradio.com)

**United States Green Building Council (USGBC) New Mexico Chapter:** “The USGBC New Mexico Chapter is a partnership of business, government agencies, and individuals that want to make our state an example of environmental, economic, and community sustainability.” Offers LEED workshops, green home tours, and contact with the national USGBC. <http://chapters.usgbc.org/newmexico/>

**Utton Center at University of New Mexico:** “Transboundary Resource Center” that studies energy and water conservation. <http://uttoncenter.unm.edu/>

**Wemagination,** Albuquerque, NM: (505) 277-4236, A non-profit center that collects objects and distributes to teachers as creative learning resources.

### **Local Building Developments:**

**El Parque, Taos:** A 20 unit “green luxury condominium” project in the process of applying for the USGBC LEED-Homes pilot project. The LEED-Silver Certification is expected in late 2006. (1.800.374.1794, ext. 5268)

**Mesa del Sol, Albuquerque:** A infill “smart growth” master planned development offering 12,900-acres for development of commercial, retail, residential and open space. www. (505) 400-3021 (see *Appendix*).

**Oshara Village, Santa Fe:** This planned community offers mixed-use designs, public transportation, energy efficiency and the use of 100% water recycling. 15% of housing will be subsidized. “Oshara will be a model of sustainability, incorporating passive solar design, decentralized energy generation, community gardens, and 100% water recycling in a pleasant pedestrian community”. [www.osharavillage.com](http://www.osharavillage.com)

**Sawmill Neighborhood & Sawmill Community Land Trust, Albuquerque:** “A private non-profit corporation created to acquire and hold land for the benefit of the community and provide secure affordable access to land, housing and jobs for community residents. SCLT serves the Albuquerque metropolitan area residents who are least served by the prevailing market.

## NATIONAL TRENDS

Below is a listing of green building trends occurring nationally. This list is to serve as background to the above researched cities. Websites and links are provided when available. It is recommended to contact the city directly for complete details. The USGBC has a concurrent listing of all LEED projects nationwide: <https://www.usgbc.org/ShowFile.aspx?DocumentID=691> (See *Appendix II – USGBC – LEED Initiatives*)

### **Arizona:**

State: Statutes Relating to Energy Conservation- revised energy conservation standards for public buildings: require that state agencies reduce energy use in public buildings by 10 percent by 2008 and 15 percent by 2011.

Tuscan: minimum construction requirements for buildings using straw bales in wall systems

### **California**

State: minimum construction requirements for buildings using straw bales in wall systems. Energy Efficiency Standards: Updated building standards for energy efficiency will create more than 500 megawatts in energy savings by 2008. Energy efficiency requirements for residential and non-residential building.

California regulators have banned the three companies that supply most of the state's power from buying electricity from high-polluting sources, including most coal-burning plants. The California Public Utilities Commission voted 4-0 to prohibit utilities from entering into long-term contracts with sources that emit more carbon dioxide than a modern natural gas plant. California's municipal utilities are not regulated by the commission and will not be directly affected by its decision. The California Energy Commission, which regulates those utilities, is drawing up similar rules expected to be issued by July.

<http://www.forbes.com/feeds/ap/2007/01/26/ap3365874.html>

Calabasa: All non-residential, city and privately owned buildings between 500 and 5,000-ft<sup>2</sup> must be LEED certified. Greater than 5,000-ft<sup>2</sup> must meet LEED Silver.

Davis: Ordinance (1823) Amendment to provide a Right to Farm and Farmland Preservation Requirements. Energy Conservation Retrofit Regulations: requires existing residential buildings to conform to energy conservation requirements with sale of property. Energy Conservation Standards for Alterations and Remodels to Residential Structures: Energy performance levels beyond state requirements allowing innovation and flexibility.

Marin County: Single Family Dwelling Energy Efficiency Ordinance: adopted new energy code requirements for homes larger than 3,500 square-feet, to meet Title 24 standard.  
& Open Space District Code

Napa: Ordinance on Riparian Habitat Areas

Oakland: Transit Oriented Development Zoning

Pasadena: Developers that exceed LEED Certified qualify for a rebate from Pasadena Water and Power. Additionally, developers who include affordable housing will earn a construction tax rebate of \$1000 per unit. All new commercial construction of 25,000 square feet or more, residential buildings at least four stories high, and city buildings of 5,000 square feet or more to achieve at least LEED Certified.

Pleasanton: Commercial projects greater than 20,000-ft must follow the guidelines to meet certified, but not required to get certified.

Transportation System Management Ordinance

San Diego: auto-qualify for quicker service and can “pay up” for even quicker service. LEED Silver projects with 30% (commercial/industrial) or 50% (residential) renewable energy production or are eligible. The city has also developed a sustainable building expedite program that uses LEED criteria and provides significant plan review and construction incentives. voluntary green building guidelines that focus on energy and resource efficiency, waste minimization, and protection of the environment.

San Jose: adopted Green Building Guidelines

San Mateo: County buildings to meet LEED criteria

### **Colorado**

Colorado legislature intro's renewable energy bill - 20% goal: Bill introduced Feb 2007 that would require Colorado to get 20 percent of its electricity from renewable sources by 2020.

### **Florida**

City of Gainesville: Fastrack permitting for privately-owned LEED projects, 50% permit fee reduction

Sarasota County: Fastrack permitting (2-3 weeks instead of 6-8 weeks) resolution that provides and expedited process for permitting, plan amendments, and exception petitions for both residential and commercial projects achieving LEED certification with 50% permit fee reduction

### **Georgia**

Chatham Co: full property state and county tax abatement for any building achieving LEED Gold for five years and tapering off by 20% each year until tenth year

### **Illinois**

State: \$400K Grant in design assistance grants for commercial LEED Gold, 20% beyond energy code, SW&R best practices. Max grant: \$100,000

Chicago: “Green Permit Program” – that includes a waive of consultant review fee and expedited permits. 40 green permits were granted in 2005. Offers a \$500K/year Grant for retrofit ecoroofs in downtown district. Individual awards cover half of project costs up to \$100K.

Cook County: County facilities to be LEED-Silver

Normal: LEED required for all public and private projects over 7,500-ft<sup>2</sup> at ground level in the Central Business District

### **Louisiana**

New Orleans: buildings larger than 5,000 sq. ft. constructed by the city to be LEED-Gold

### **Maryland**

State: Models and Guidelines for Managing Maryland's Growth - Infill and Redevelopment-- Addresses infill development and includes model zoning codes and list of existing zoning codes from jurisdictions.

Montgomery County: Energy Performance Standards- minimum energy performance standards for county buildings. Requirements for new or remodel construction of County buildings to be above Energy Performance Standards.

### **Massachusetts**

Acton: LEED-based density bonus. LEED is one of four ways (affordable housing, historic preservation, TDR from env. Sensitive areas are other three) developers can earn FAR

Boston: Zoning code amended to require LEED certifiable design and construction for projects > 50,000-ft<sup>2</sup>. Boston Redevelopment Authority requires LEED checklist for all projects.

### **Minnesota:**

Shorewood and Plymouth: Phosphorus Lawn Fertilizer Ordinances-to limit algae growth and degradation of water quality, state legislation passed restricting use of phosphorus lawn fertilizer to 0% in metro area and 3% in 80 Minnesota counties.

### **Missouri**

New Pattonsburg: “Declaration of Community Responsibility” with guidelines and a sustainable economic development council. Solar Codes and Ordinance: Protection of solar access, alternative housing design and use of wind energy.

### **Nevada**

State: The Nevada Commission on Economic Development adopted the process and resolution to allow partial abatement of real property tax on private projects that achieve a minimum of LEED Silver certification.

### **New Jersey**

Cranford Township: various thresholds of FAR for redevelopment projects based on level of certification. Density bonus for redevelopment projects that achieve LEED certification (four levels based on certification). LEED AP, LEED scorecard, construction waste management plan, Energy Star appliances required.

## **North Carolina**

Chapel Hill: Energy Conservation Ordinance: Energy-efficiency design and construction for new and renovated town buildings.

## **Ohio**

City of Lakewood: Green Building Policy, reduced environmental impacts and green building principles.

## **Pennsylvania**

Lancaster County: Conservation Easement Codes

Bucks County: Performance Zoning Model Ordinance

## **Rhode Island**

Burrillville: Village Planned Development

## **Texas**

Frisco: All non-single family residential developments over 10,000-ft<sup>2</sup> must submit a LEED checklist filled out by a LEED AP with cost estimates per point to the city. Energy Star for single family.

Leander: Smartcode Adopted

Port Arthur: Solar Energy Ordinance: solar access protection, street design to maximize solar energy.

San Antonio: City Council adopted an ordinance approving an incentive scorecard system that authorizes administrative waivers or reduction of certain development fees for projects reaching specified scores from the scorecard. Points are awarded for projects achieving LEED NC or LEED for Homes certification.

## **Virginia**

Arlington County: .15-.35 or 3 stories for LEED Certified-Silver

Arlington: LEED-based FAR increases with rating (.15-.35 or 3 stories) green building features considered as “environmental amenities” and way to meet code intent (not clear exactly how). All commercial site plan applicants must include LEED scorecard and have LEED AP on board, even if not going LEED. A \$.03/ft<sup>2</sup> charge to all non-LEED site development applicants. Required green building fund, refunded if LEED certified

## **Washington**

Issaquah: LEED projects get free professional consultation and are placed at the head of the permit line.

Seattle: LEED™ Rating System for City projects and Silver Level performance for City-funded projects with over 5000 square fee. \$10-15K Grant for certified to Silver for soft costs only. \$10K paid when agreement signed.

Environmentally Responsible Purchasing Policy:

Directs City of Seattle departments to consider life cycle effects from: pollution, waste generation, energy consumption, recycled material content, depletion of natural resources, and the potential impact on health and nature.

**Wisconsin**

State: Ordinance for conservation subdivisions (guide only)

Rural Cluster Development Ordinance:

[http://www.sewrpc.org/modelordinances/cluster\\_ordinance.pdf#search=%22cluster%20zoning%20code%22](http://www.sewrpc.org/modelordinances/cluster_ordinance.pdf#search=%22cluster%20zoning%20code%22)

Soldiers Grove: Solar Access, Thermal Performance and Solar Heating Ordinances: standards for new building, with requirement that non-residential buildings have min. 50% of heating from solar energy.

*See 'Additional Resources' page 54, for listings of municipal resources*

## INTERNATIONAL TRENDS

The green building movement internationally can be considered more advanced than in the United States. Below are a sample of efforts other countries are making with green building policies.

### **Canada**

Vancouver, BC: mandates certain LEED credits for public projects

Winnipeg, Canada: requiring LEED for any project asking for any level of public funding (policy, April 1, 2007))

### **China**

China will invest 1.5 trillion yuan (\$193 billion) to make existing buildings more energy efficient by 2020 <http://www.alertnet.org/thenews/newsdesk/PEK335531.htm>

### **Columbia**

Las Gaviotas: <http://www.zeri.org/index.cfm?id=projectGaviotas>

### **European Union**

European Commission-Energy: [http://ec.europa.eu/energy/index\\_en.html](http://ec.europa.eu/energy/index_en.html) and the “Green Paper” [http://ec.europa.eu/energy/green-paper-energy/index\\_en.htm](http://ec.europa.eu/energy/green-paper-energy/index_en.htm)

European Commission-Environment: [http://ec.europa.eu/environment/index\\_en.htm](http://ec.europa.eu/environment/index_en.htm)

Eur-Active: EU News & Policy Position-Environment: <http://www.euractiv.com/en/environment> & <http://www.euractiv.com/en/sustainability>

### **England**

London, England: London Mayor doubles renewable energy targets for new buildings. [www.london.gov.uk/londonissues/planninganddevelopment.jsp](http://www.london.gov.uk/londonissues/planninganddevelopment.jsp)  
<http://www.egovmonitor.com/node/7850>.

2003 London, Mayor Ken Livingstone introduced the “congestion charge” in the central city to as a deterrent to make people shift into less-polluting cars, reduce traffic, improve air quality and raise cash for public transportation. He will more than triple the daily traffic congestion charge for big cars in the center of the city to 25 pounds (\$47.43) a day starting next year.

Zed standards checklist: [www.zedstandards.com](http://www.zedstandards.com)

Mayor of London Ken Livingstone has announced the selections for development partners for the zero carbon development at Gallions Park. Their proposal for approximately 200 homes, incorporated a scheme whereby all homes would be designed as net zero carbon, and built to the highest environmental standards, including renewable energy sources.

<http://www.24dash.com/socialhousing/16422.htm>

## **Spain**

Compulsory solar panels on all new and renovated buildings in Spain. Code dictates that new homes to be equipped with solar panels to provide between 30 and 70 percent of hot water, new non-residential buildings, to have photovoltaic panels to generate a proportion of their electricity. <http://www.planetark.org/dailynewsstory.cfm/newsid/38965/story.htm>

**MATRIX C: GREEN BUILDING FUNDING**

FUNDING SOURCES	DATA-BASE	FUNDS FROM						FUNDS FOR					
		STATE GOV.	FEDERAL GOV.	NON-PROFIT	PRIVATE SOURCE	FINANCIAL INSTITUTE	RESIDENTIAL	COMMERCIAL	COMMUNITY	STATE	FEDERAL	NON-PROFIT	
<b>Bridgemer</b>					\$		\$	\$					
<b>The Conservation Fund</b>	\$			\$					\$	\$			
<b>Enterprise Community Partners</b>			\$	\$					\$	\$			
<b>Eco-Media</b>					\$				\$	\$			
<b>Environmental Protection Agency</b>			\$						\$	\$			
<b>Fundinggreenbuildings.com</b>	\$						\$	\$	\$	\$	\$		
<b>Foundation Center</b>	\$											\$	
<b>Grants.gov</b>	\$		\$					\$	\$	\$		\$	
<b>The Home Depot Foundation</b>				\$								\$	
<b>The Kresge Foundation</b>				\$								\$	
<b>Los Alamos National Bank</b>						\$	\$						
<b>The National Association of State Energy Officials (NASEO)</b>	\$			\$					\$	\$			
<b>NM Mortgage Finance Authority</b>				\$			\$						
<b>Permaculture Credit Union</b>						\$	\$	\$					
<b>Smart Communities Network</b>	\$												
<b>US Department of Housing and Urban Development (HUD)</b>			\$				\$						
<b>Well Fargo Bank</b>						\$	\$	\$				\$	

*\*Funding from the above sources may include tax credits*

**FUNDING SOURCES:**

**Source:** Bridgemer: Funding and Investing in Green Buildings

**Contact Number:** +1 204 981 7700 (Canada)

**Contact Email:** [inquire@bridgemer.com](mailto:inquire@bridgemer.com)

**Contact Website:** <http://www.bridgemer.com/>

**Project Type:** New construction or renovation

**Description:** This Investment Group invests in real estate projects that utilize green building technologies. Sources of capital are available to provide debt and equity finance for green buildings.

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**Source:** The Conservation Fund

**Contact Website:** [www.conservationfund.org](http://www.conservationfund.org)

**Contact Number:** (505) 984-2871

**Contact Address:** New Mexico Office, 1511 Don Gaspar, Santa Fe, NM 87505

**Project Type:** Database

**Description:** Database for sustainable projects. Including:

*The Kodak American Greenways Awards Program:* The Eastman Kodak American Greenways Awards, a partnership project of Kodak, The Conservation Fund, and the National Geographic Society, provides small grants to stimulate the planning and design of greenways in communities throughout America.

*Banrock Station Wetlands Conservation Program:* The Banrock Station Wetlands Conservation Program, a partnership project of Banrock Station Wines and The Conservation Fund, provides grants of \$1,000 to \$5,000 to nonprofit groups that are planning and implementing wetlands conservation and/or restoration projects at the local level.

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**Source:** Enterprise Community Partners

**Contact Name:** Ed Rosenthal

**Contact Number:** 505.428.2350

**Contact Email:** [erosenthal@enterprisefoundation.org](mailto:erosenthal@enterprisefoundation.org)

**Website:** [www.enterprisecommunity.org](http://www.enterprisecommunity.org)

**Project Type:** Community and Residential

**Description:**

Green Communities: In partnership with the Natural Resource Defense Council in creating 400 million in funds for smart growth, energy and water resource management and sustainable building technologies. Grants are awarded up to \$50,000. Grant money for “green charrettes” available up to \$5,000. Financing Tools available.

**Additional Information:** Printed Materials

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**Source:** Eco Media

**Contact Name:** Janice Sakamoto, Business Development

**Contact Number:** 212.699.6419  
**Contact Email:** [janice@eccmedia.com](mailto:janice@eccmedia.com)  
**Website:** [www.ecomedia.us/](http://www.ecomedia.us/)  
**Project Type:** Community

**Description:** EcoZone: Eco Media brings together city and state governments with corporate partners to address environmental projects. The EcoZone program's public-private partnership supports ongoing and new environmental projects – at no additional cost to taxpayers. Past projects have included: stormdrain catch basin filtering, hybrid and alternative fuel vehicle for municipal fleets, solar paneling on city facilities, greening industrial lots into green space. Funding also can be directed to public education and outreach programs.

*Funding:* EcoZone is funded solely through corporate sponsorships, such as educational outdoor signage, to community environmental projects in air, energy, water and greenspace.

**Additional Information:** Powerpoint Slide Show Presentation

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**Source:** Environmental Protection Agency  
**Contact Website:** <http://www.epa.gov/greenbuilding/>  
**Project Type:** State, Tribe Grants

**Description:** The Office of Pollution Prevention and Toxics is responsible for overseeing several grant programs which promote pollution prevention through source reduction and resource conservation.

Past Grants included:

*Pollution Prevention Grant Program:* EPA has approximately \$4.1 million to support pollution prevention grants to States, Tribes, and Intertribal Consortia in FY 2006 - 2007. Grants will be awarded during FY 2006 - 2007. The application period is now closed.

*Pollution Prevention Information Network (PPIN):* The Pollution Prevention Information Network (PPIN) competition was initiated in 1997 to promote sharing P2 technical assistance information, references and training expertise among states. Each year EPA provides grants to support ongoing work and development of new P2 technical assistance services or P2 information resources. The Regional centers receiving these grants now call themselves the Pollution Prevention Resource Exchange (P2Rx). The application period is now closed.

*Green Chemistry Grant Program:* EPA's Green Chemistry Program supports fundamental research in green chemistry in order to provide industry with the chemically viable tools and methods necessary to develop products and processes that are more environmentally benign.

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**Source:** [Fundinggreenbuildings.com](http://Fundinggreenbuildings.com) / The McAdams Group  
**Contact Name:** Jan McAdams  
**Contact Number:** 702-407-7888

**Contact Email:** [jan@fundinggreenbuildings.com](mailto:jan@fundinggreenbuildings.com)

**Website:** [www.fundinggreenbuildings.com](http://www.fundinggreenbuildings.com)

**Project Type:** LEED-certified green buildings (commercial and public)

**Description:** Service offers a Funding Green Building Toolkit, which includes: Access to five on-line seminars that include: Federal and State Tax Credits, Funding magnets, Agencies, Presentation tools, Recognition tools, Securing Donations and Revenue Sources for green buildings. Tool Kit includes access to documents and monthly attendance to “Funding Fridays” teleconferences. Cost: \$495/Person

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**Source:** Foundation Center

**Contact Email:** [library@foundationcenter.org](mailto:library@foundationcenter.org)

**Contact Website:** <http://www.foundationcenter.org/>

**Description:** The mission of the Foundation Center is to strengthen the nonprofit sector by advancing knowledge about U.S. philanthropy. It is the nations leading authority on philanthropy, connecting nonprofits and the grantmakers supporting them to tools. It maintains a database on U.S. grantmakers and their grants as well as education and training programs.

**Process:** The Foundation Directory Online allows grantseekers to quickly research prospective funders by providing access to detailed information on grantmakers, grants, and grant recipients, as well as access to grantmaker web sites and searchable 990s. Subscriptions to *The Foundation Directory Online* begin at \$19.95 a month.

*NOTE:* A general search of “green buildings” on the website revealed one source: The Valentine Perry Snyder Fund. It also lists articles on green building related funding in their Philanthropy News Digest (available online).

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**Source:** Grants.gov

**Contact Website:** [www.grants.gov](http://www.grants.gov)

**Project Type:** Federal grant source listing

**Description:** Grants.gov allows organizations to electronically find and apply for more than \$400 billion in Federal grants. Grants.gov is a point for over 1,000 grant programs offered by all Federal grant making agencies.

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**Source:** The Home Depot Foundation

**Contact Number:** 1-866-593-7019, 770-384-3889

**Contact Email:** [hd\\_foundation@homedepot.com](mailto:hd_foundation@homedepot.com)

**Contact Website:** [www.homedepotfoundation.org](http://www.homedepotfoundation.org)

**Project Type:** Non-profits

**Description:** The Foundation encourages nonprofits to construct homes that are affordable for those of low to moderate means not only to purchase, but also to operate and maintain. The Foundation awards grants to eligible non-profits three times per year (January 15, May 15 and September 15). Requests for grants may only be submitted by completing the on-line application. The Home Depot Foundation makes grants to 501(c)(3) tax exempt public charities in the United States and to charitable organizations in Canada.

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**Source:** The Kresge Foundation  
**Contact Number:** 1.248.643.9630  
**Contact Email:** [info@kresge.org](mailto:info@kresge.org)  
**Contact Website:** [www.kresge.org](http://www.kresge.org)  
**Project Type:** Non-profits

**Description:** The Kresge Foundation encourages nonprofit organizations to consider building green. They offer education resources and workshops and special grants to help nonprofits during the planning phase. Grant guidelines in this program encourage environmentally-focused organizations to innovate, creating new models of sustainable design. Planning grants are available in amounts from \$25,000 to \$100,000.

**Additional Materials:** Education materials

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**Source:** Los Alamos National Bank  
**Contact Name:** Susan M. Keddy, Construction Loan Officer  
**Contact Number:** 505.662.1052  
**Contact Email:** [susan@lanb.com](mailto:susan@lanb.com)  
**Project Type:** Commercial and Consumer Purchases

**Description:**  
Sustainable Banking, Commercial Projects. \$50 million in special financing to fund Land Development and Construction Projects that incorporate sustainable development strategies such as effective energy management, water conservation and pollution prevention.

*Eligibility:* LEED Certification determines eligibility with 9 of 24 criteria to qualify  
*Loan Pricing and Terms:* Points are reduced by .5% and no other fees, Initial rate will be .5% below our current posted rate, fixed for up to 24 months.

**Description:**  
Commercial Purchases: \$10 million in special financing to fund consumer loans for earth friendly purposes such as renewable energy or low energy consumption vehicles and appliances.

*Eligibility:* Electric vehicles with mpg greater than 35 mpg (highway), solar hot water heaters, water harvesting systems, plumbing fixtures that reduce water consumption, outdoor solar lights, natural flooring, etc.

*Loan Pricing:* 1% reduction in posted interest rate. Waive any other fees, extended terms for up to 8 years.

**Additional Information:** Printed Materials

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**Source:** The National Association of State Energy Officials (NASEO)

**Contact Email:** [dhsea@naseo.org](mailto:dhsea@naseo.org)

**Contact Website:** [www.naseo.org](http://www.naseo.org)

**Project Type:** Provides information on energy concerns

**Description:** The NASEO is the only nonprofit organization that represents the Governor-designated energy officials from each state and territory. The organization was created to improve the effectiveness and quality of state energy programs and policies, provide policy input and analysis, share successes among the states, and be a repository of information on energy issues of concern to the states and their citizens.

NOTE: Website provides links to funding opportunities and resources. Funding Opportunities include: Center for Economic and Environmental Partnership, Inc. sample list of solicitations offering support research and implementation of green building. The Strategic Environmental Project Pipeline Foundation offering funding for green building projects. Resources include: The DOE Technical Assistance Program, EERE Financial Opportunities, Federal Register Notices, The Grantsmanship Center, GPO Access, FedGrants notices and NETL Solicitations. See website for current listings

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**Source:** New Mexico Mortgage Finance Authority

**Contact Website:** [www.housingnm.org](http://www.housingnm.org)

**Contact Number:** (505) 843-6880, (800) 444-6880 (Toll free in New Mexico)

**Contact Address:** New Mexico Mortgage Finance Authority, 344 4th Street SW,  
Albuquerque, NM 87102

**Request Information:** <http://www.housingnm.org/contact/contactInfoRequests.asp>

**Project Type:** Tax Credits for Greening Low-Income Housing – New and remodel

**Description:** Tax Credits given for project totaling “100 points”. A maximum of 20 points are given for green building technologies. See publication located on page 13:

[www.housingnm.org/publications/documents/pubMultHTC\\_2007\\_QAP\\_Final.pdf](http://www.housingnm.org/publications/documents/pubMultHTC_2007_QAP_Final.pdf)

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**Source:** Permaculture Credit Union

**Contact Website:** [www.pcuonline.org](http://www.pcuonline.org)

**Contact Number:** 505.954.3479, 1.866.954.3479

**Contact Email:** [info@pcuonline.org](mailto:info@pcuonline.org)

**Project Type:** green building technologies and automobiles loans

**Description:** The Permaculture Credit Union pools the financial resources of people who believe in the ethics of Permaculture - care of the earth, care of people, and reinvestment of surplus for the betterment of both.

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**Source:** Smart Communities Network (Center of Excellence for Sustainable Development – funding)

**Contact Website:** <http://www.smartcommunities.ncat.org/>

**Project Type:** Information

**Description:**

Site lists current funds available for green building projects. Examples include: Alcan Sustainability Prize, Bank of America Neighborhood Excellence Initiative, EPA funds, DOE grants. See website for current listings

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**Source:** US Department of Housing and Urban Development (HUD)

**Contact Website:** <http://www.hud.gov/offices/hsg/sfh/eem/eemhog96.cfm>

**Project Type:** Energy Efficient Mortgage and Grants

**Description:** The Energy Efficient Mortgage (EEM) is for buying, selling, refinancing, or remodeling a home. This federally recognized can be applied to most home mortgages. EEMs provide the borrower with special benefits when purchasing a home that is energy efficient, or can be made efficient through the installation of energy-saving improvements. There are two options with the Energy Efficient Mortgage: Financing energy improvements and increasing buying power for new homes.

New Mexico Office: Timothy J. Hartzler (505.346.6463)

Email: [nm\\_webmanager@hud.gov](mailto:nm_webmanager@hud.gov)

625 Silver Avenue, SW Suite 100

Albuquerque, NM 87102-3185

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**Source:** Wells Fargo Bank

**Contact Website:** [www.wellsfargo.com](http://www.wellsfargo.com)

**Contact Phone:** 1-800-869-3557

**Project Type:** 10-Point Environmental Commitment

**Description:** Investments and financing for smart-growth and green building developments and non-profit contributions (matching grants)

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## GREEN BUILDING TECHNOLOGIES

Below is a listing of green building technologies and tools. The market for green building supplies, energy efficient appliances and green building tools are just beginning to explode. The list below is a sampling of what is available.

### Green Building Products:

#### Energy

Bluenergy Solarwind Turbine: [www.bluenergyusa.com](http://www.bluenergyusa.com)

Stirling Solar Dishes <http://www.sandia.gov/news/resources/releases/2004/renew-energy-batt/Stirling.html>

Solar Save Roofing Membranes: [www.openenergycorp.com](http://www.openenergycorp.com)

Renewable Choice Energy: [www.renewablechoice.com](http://www.renewablechoice.com)

#### Flooring

Amorim Flooring North America Cork: [www.wicanders.com](http://www.wicanders.com)

Marmoleum: [www.themarmoleumstore.com](http://www.themarmoleumstore.com): 1866.627.6653

Natural Cork: [www.naturalcork.com](http://www.naturalcork.com): 800.404.2675

Carpet and Rug Institute: [www.carpet-rug.com](http://www.carpet-rug.com)

#### Insulation

Cellulose: Blown-in Recycled Newsprint

Cotton: recycled Batt insulation: [www.bondedlogic.com](http://www.bondedlogic.com)

Johns Manville: [www.JM.com/builder](http://www.JM.com/builder)

Soy Based Polyurethane Foam: BioBase 501 [www.biobased.net](http://www.biobased.net)

#### Landscaping/Irrigation

Geoblock: Vegetated Porous Pavement System: [www.prestogeo.com](http://www.prestogeo.com)

#### Lighting

The Watt Stopper: [www.wattstopper.com/greensense](http://www.wattstopper.com/greensense)

#### Paint & Plaster

American Clay: [www.americanclay.com](http://www.americanclay.com), 18664041634

Benjamin Moore & Co.: [www.benjaminmoore.com](http://www.benjaminmoore.com), Eco Spec Line

BioShield: [www.bioshield.com](http://www.bioshield.com)

Cloverdale Paint: [www.cloverdalepaint.com](http://www.cloverdalepaint.com): Horizon interior line

Dutch Boy: [www.dutchboy.com](http://www.dutchboy.com): Clarity interior latex line

Mab Paints: [www.mabpaints.com](http://www.mabpaints.com): Enviro-pure interior latex zero-VOC line

Miller Paint Co. [www.millerpaint.com](http://www.millerpaint.com): Acro line

Olympic Paint and Stain: [www.lowes.com](http://www.lowes.com): Zero-VOC Olympic Premium

PPG Architectural Finishes: [www.ppg.com](http://www.ppg.com): Pittsburgh Paints Pure Performance line

Rodda Paint Co: [www.roddapaint.com](http://www.roddapaint.com): Horizon line

Sico INC.: [www.sico.ca](http://www.sico.ca): ecosource line

Southern Diversified Products: [www.southerndiversifiedproducts.com](http://www.southerndiversifiedproducts.com): American Pride

Textured Coatings of America <http://www.texcote.com/index.asp>, <http://www.azobuild.com/news.asp?newsID=2055>  
V.ABC Paints: [www.vabc.cn/main.asp](http://www.vabc.cn/main.asp): Ecobest/Ecobond/Elastic/Rust Buster/Waterbase  
Vista Paint: [www.vistapaint.com](http://www.vistapaint.com): Carefree Earth line  
Yolo Colorhouse: [www.yolocolorhouse.com](http://www.yolocolorhouse.com)

### Roofing

Green Roofing Blocks: [www.greenroofblocks.com](http://www.greenroofblocks.com)

### Water

Grey Water Use: [www.nmenv.state.nm.us](http://www.nmenv.state.nm.us), [www.watercase.org](http://www.watercase.org)  
Kohler: [www.kohler.com](http://www.kohler.com)  
Living Machines: [www.livingdesignsgroup.com](http://www.livingdesignsgroup.com)  
Rainwater Harvesting: [www.twdb.state.tx.us](http://www.twdb.state.tx.us), [www.arcsa-usa.org](http://www.arcsa-usa.org)  
Sustainable Solutions: [www.sustainablesolutions.com](http://www.sustainablesolutions.com)

### Mechanical Systems:

Paloma Industries: [www.palomaindustries.com/pl/](http://www.palomaindustries.com/pl/)  
Warmboard Radiant Subfloor: [www.warmboard.com](http://www.warmboard.com)

### Computer Software

BEES (Buildings for Environmental & Economic Sustainability):  
[www.bfrl.nist.gov/oa/software/bees.html](http://www.bfrl.nist.gov/oa/software/bees.html)  
Building Life-Cycle Cost Program BLCC 5.3-06: National Institute of Standards and  
DOE2.com: Building Energy Use and Cost Analysis Software, [www.doe2.com](http://www.doe2.com) (eQuest,  
Ecoligic3: LEED ROI software for Green building, [www.ecoligic3.com](http://www.ecoligic3.com)  
Energy Star Target Finder, [www.energystar.gov](http://www.energystar.gov)  
EnergyPro: <http://www.energysoft.com/>  
Federal Greening Toolkit-ResCheck: <http://www.energycodes.gov/>  
Green Building Studio: <http://www.greenbuildingstudio.com/gbsinc/index.aspx> Implement: City of Seattle  
Integrated Environmental Solutions Limited: Virtual Environment: [www.iesve.com](http://www.iesve.com)  
Sustainable Building Tool, <http://www2.ci.seattle.wa.us/implement/>  
Technology (NIST). [www1.eere.energy.gov/femp/information/download\\_blcc.html](http://www1.eere.energy.gov/femp/information/download_blcc.html)  
USGS: Water Resources Application Software: [http://water.usgs.gov/software/ground\\_water.html](http://water.usgs.gov/software/ground_water.html)

### Structural

Forest Stewardship Council (FSC): *SmartGuide To Green Building Wood Sources*.  
[www.rainforestalliance.org/greenbuilding](http://www.rainforestalliance.org/greenbuilding), [www.findfsc.org](http://www.findfsc.org), [www.fscus.org/green\\_building](http://www.fscus.org/green_building)  
The Royal Concrete Building System: <http://www.royalconcreteconcepts.com/>

### Windows

Vista Window Film: (800.345.6088) [www.vista-films.com/](http://www.vista-films.com/)

### Wood Finishing/Cabinetry

Kliptech Composites Paper Stone: <http://www.kliptech.com/index.htm>  
Ecocolors: Columbia Forest Products: [www.columbiaforestproducts.com](http://www.columbiaforestproducts.com)

## **Green Building Product Distributors**

AKA Green: [www.akagreen.com](http://www.akagreen.com)

Amicus Green Building Center: [www.amicusgreen.com](http://www.amicusgreen.com): Kensington, MD

Bluehouse: [www.bluehouse.com](http://www.bluehouse.com), Baltimore, MD.

Building for Health: [www.buildingforhealth.com](http://www.buildingforhealth.com)

Eco of New York: [www.vironproducts.com](http://www.vironproducts.com) 718.292.0626, Bronx, New York

Eco Wise: [www.ecowise.com](http://www.ecowise.com)

EcoClean: [www.ecoclean-az.com](http://www.ecoclean-az.com) 1.480.947.5286

Environ Products: [www.vironproducts.com](http://www.vironproducts.com)

Environmental Building Supplies: 503.222.3881, Portland, Oregon [www.ecohaus.com](http://www.ecohaus.com)

Environmental Depot: [www.environmentaldepot.com](http://www.environmentaldepot.com), 512.288.6161, Austin, TX

Environmental Home Center: [www.environmentalhomecenter.com](http://www.environmentalhomecenter.com), 800.281.9785, Seattle

The Green Building Center: 801.484.6278, Salt Lake City, Utah, [www.greenbuildingcenter.net](http://www.greenbuildingcenter.net)

Green Building Supply: [www.greenbuildingsupply.com](http://www.greenbuildingsupply.com)

Green Fusion Design Center: [www.greenfusiondesigncenter.com](http://www.greenfusiondesigncenter.com): San Anselmo, CA

Green Sacramento: [www.greensacramento.com](http://www.greensacramento.com)

Greenmaker: [www.greenmakersupply.com](http://www.greenmakersupply.com): Chicago IL.

Livinggreen: [www.livinggreen.com](http://www.livinggreen.com) 1.310.838.8442

Material Good: [www.materialgood.com](http://www.materialgood.com) Silver City, NM

Mira Organics: 978.369.8222, Concord, Massachusetts [www.miraorganics.com](http://www.miraorganics.com)

The Natural Adobe: [www.thenaturaladobe.com](http://www.thenaturaladobe.com)

Natural Home: 707.571.1229 Santa Rosa, California, [www.naturalhomeproducts.com](http://www.naturalhomeproducts.com)

Nature Neutral: [www.natureneutral.com](http://www.natureneutral.com)

Oikos – Green Building Products and News: [www.oikos.com](http://www.oikos.com)

Pioneer Paints: [www.cwpaints.com](http://www.cwpaints.com)

Planetary Solutions: 1.303.442.6228, Boulder, Colorado, [www.planetearth.com](http://www.planetearth.com)

Pure Home Center: 508.429.5255, Holliston, Massachusetts [www.purehomecenter.com](http://www.purehomecenter.com)

Safe Building Solutions: [www.safebuildingsolutions.com](http://www.safebuildingsolutions.com), 262.968.5070, Waukesha, WI

Shelter Ecology INC.: 828.225.2829, Asheville, North Carolina, [www.shelterecology.com](http://www.shelterecology.com)

Straw Sticks & Bricks: [www.strawsticksandbricks.com](http://www.strawsticksandbricks.com): Kansas City, Lincoln.

Building Green: GreenSpec Directory: [www.BuidingGreen.com](http://www.BuidingGreen.com)

Jade Mountain: [www.umich.edu/~nppc/pub/resources/ResLists/arch.html](http://www.umich.edu/~nppc/pub/resources/ResLists/arch.html)

Alameda County Resource Guide: [www.chps.net/links/pdfs/Resource\\_Guide.pdf](http://www.chps.net/links/pdfs/Resource_Guide.pdf)

MDBC/Cradle to Cradle: <http://www.mbdc.com/>

US Environmentally Preferable Products Database: [www.epa.gov/opptintr/epp](http://www.epa.gov/opptintr/epp)

## ADDITIONAL RESOURCES

### Affordable Housing

Affordable Housing Design Advisor: [www.designadvisor.org](http://www.designadvisor.org)

Building America: [www.buildingamerica.gov](http://www.buildingamerica.gov)

Florida Solar Energy Center: <http://www.fsec.ucf.edu/en/>

Habitat for Humanity East Bay Green Building Program: [www.habitatEG.org](http://www.habitatEG.org)

Green Communities Initiative: [www.enterprisefoundation.org/resources/green](http://www.enterprisefoundation.org/resources/green)

### Green Building Resources – General

Environmental Resource Guide (ERG), The American Institute of Architects: (800) 365-2724

The Green Pages: The Contract Interior Designer's Guide to Environmentally Responsible Products and Materials: (212) 779-3365

The Guide to Resource Efficient Building Elements, Center for Resourceful Building Technology: (406) 549-7678. [crbt@aol.com](mailto:crbt@aol.com)

Sustainable Building Sourcebook, ECSD Green Builder Program: Austin, TX (512) 499-7827  
[dselter@Txinfinet.com](mailto:dselter@Txinfinet.com)

Whole Building Design Guide <http://www.wbdg.org/>

Green Home Guide: [www.greenhomeguide.com](http://www.greenhomeguide.com)

Iris Communications, Inc.: [www.oikos.com](http://www.oikos.com)

National Association of Mutual Insurance Companies (NAMIC) [www.climateandinsurance.org](http://www.climateandinsurance.org)

Sustain Lane: [www.sustainlane.com](http://www.sustainlane.com)

The Sustainability Project: [www.sustainabilityproject.org](http://www.sustainabilityproject.org)

Sustainable A,B,C: <http://www.sustainableabc.com/>

GreenerBuildings.com: [www.greenerbuildings.com](http://www.greenerbuildings.com)

Healthy Building Network: [www.healthybuilding.net](http://www.healthybuilding.net)

### Book Publishers

Earthscan Books: Green Buildings and Design: [StylusMail@PressWarehouse.com](mailto:StylusMail@PressWarehouse.com)

ECOTone Publishing Company: [www.ecotonedesign.com](http://www.ecotonedesign.com)

### Case Studies

American Institute of Architects Top Ten Green Projects: [www.ariatopten.org/hpb](http://www.ariatopten.org/hpb)

Cusato Cottages: [http://www.cusatocottages.com/index\\_content.html](http://www.cusatocottages.com/index_content.html)

Form Based Codes: [www.formbasedcodes.org](http://www.formbasedcodes.org)

Construction Waste Management – See Recycling

### Email Listserves

Climate News:

Greenclips [chrishammer@greenclips.org](mailto:chrishammer@greenclips.org)

### Energy

Alliance to Save Energy: [www.ase.org](http://www.ase.org)

Center for Renewable Energy and Sustainable Technology: [www.solstice.crest.org](http://www.solstice.crest.org)

Coalition for Clean Affordable Energy: [www.CFCAE.org](http://www.CFCAE.org)

DSIRE: Database of State Incentives for Renewables and Efficiency, [www.dsireusa.org](http://www.dsireusa.org)

Development Center for Appropriate Technology: [www.dcat.net](http://www.dcat.net)  
Energy Design Resources: [www.energydesignresources.com](http://www.energydesignresources.com)  
Good Cents Energy Services: [www.goodcents.com](http://www.goodcents.com)  
Go Zero: [www.conservationsfund.org](http://www.conservationsfund.org)  
Illuminating Engineering Society of North America: [www.iesna.org](http://www.iesna.org)  
North Carolina Solar Center: [www.ncsc.ncsu.edu](http://www.ncsc.ncsu.edu)  
Solar Energy Industries Association: [www.seia.org](http://www.seia.org)  
Solar Energy Laboratory, University of Wisconsin-Madison: <http://sel.me.wisc.edu/>  
Clean and Green: [www.Cleanandgreen.us](http://www.Cleanandgreen.us)

### Federal

Build America, US Dept. of Energy: <http://www.baihp.org/>  
The Green Power Network: <http://www.eere.energy.gov/greenpower/>  
Million Solar Roofs: <http://www.millionsolarroofs.org/>  
Wind Power America: <http://www.eere.energy.gov/windandhydro/windpoweringamerica/>  
Alliance to Save Energy: <http://www.ase.org/content/article/detail/2356>  
Energy Star (EPA): [www.epa.gov/greenbuilding/](http://www.epa.gov/greenbuilding/)  
Energy Policy Act of 2005: <http://www.energytaxincentives.org>  
Federal Energy Management Program - Greening Initiatives/Tools  
<http://www1.eere.energy.gov/femp/>  
Field Guide to Sustainable Construction-download guidelines  
<http://renovation.pentagon.mil/sustainfieldguide.htm>  
Greening Federal Facilities-download guidelines  
[http://www.eere.energy.gov/femp/technologies/sustainable\\_greening.cfm](http://www.eere.energy.gov/femp/technologies/sustainable_greening.cfm)  
Home Energy Rating Systems (HERS) Program  
National Renewable Energy Laboratory-Research [http://www.nrel.gov/buildings\\_thermal/](http://www.nrel.gov/buildings_thermal/)  
Sustainable Project Rating Tool (SPiRiT): [www.cecer.army.mil/sustDesign/Spirit.cfm](http://www.cecer.army.mil/sustDesign/Spirit.cfm)  
U.S. Air Force Environmentally Responsible Facilities Guide-guidelines  
<http://www.afcee.brooks.af.mil/dc/dcd/arch/rfg/index.html>  
U.S. Department of Energy/Office of Building Technology: [www.eren.doe.gov/buildings/](http://www.eren.doe.gov/buildings/)  
U.S. DOE Center of Excellence for Sustainable Development  
<http://www.smartcommunities.ncat.org/>  
U.S. DOE and U.S. EPA -- Energy Star program <http://www.energystar.gov/>  
U.S. DOE Rebuild America - Schools and Commercial Buildings  
[http://www.eere.energy.gov/buildings/program\\_areas/rebuild.html](http://www.eere.energy.gov/buildings/program_areas/rebuild.html)  
U.S. EPA's Environmentally Preferable Purchasing (EPP) <http://www.epa.gov/opptintr/epp/>  
U.S. National Park Service - Guiding Principles of Sustainable Design  
<http://www.nps.gov/dsc/dsgncnstr/gpsd/toc.html>  
U.S. Naval Facilities Engineering Command - design policy  
<http://www.buildinggreen.com/news/navypolicy1.cfm>  
The National Park Service's Sustainable Design & Construction Database, National Park Service  
(303) 969-2966, [sally\\_small@nps.gov](mailto:sally_small@nps.gov)  
US Environmentally Preferable Products Database: [www.epa.gov/opptintr/epp](http://www.epa.gov/opptintr/epp)

### Green Building Organizations – Non-Profit

BetterBricks: [www.betterbricks.com](http://www.betterbricks.com)  
Clinton Foundation: <http://www.clintonfoundation.org/index.htm>  
Commonweal: [www.commonwealconservancy.org](http://www.commonwealconservancy.org)

Commission for Environmental Cooperation: [www.cec.org](http://www.cec.org)  
Global Green USA: [www.globalgreen.org](http://www.globalgreen.org), [www.globalgreen.org/gbrcc](http://www.globalgreen.org/gbrcc)  
Green Building Alliance (GBA): [www.gbapgh.org](http://www.gbapgh.org)  
Natural Resource Defense Council: [www.nrdc.org](http://www.nrdc.org), [www.nrdec.org/cities](http://www.nrdec.org/cities)  
NEXUS: Green Building Resource Center: [www.greenroundtable.org](http://www.greenroundtable.org)  
The Rocky Mountain Institute: [www.rmi.org](http://www.rmi.org)  
Southface Energy Institute: [www.southface.org](http://www.southface.org)  
Sustainable Buildings Industry Council (SBIC): [www.sbicouncil.org](http://www.sbicouncil.org)  
United States Green Building Council: [www.usgbc.org](http://www.usgbc.org)  
Vote Solar: [www.votesolar.org](http://www.votesolar.org)  
What's Working: [www.whatsworking.com](http://www.whatsworking.com)

#### Green Building Organizations – For-Profit

eGreenIdeas: <http://www.egreenideas.com/>  
Environmental Support Solutions: [www.environ.com](http://www.environ.com)  
Scientific Certification Systems: [www.scscertified.com](http://www.scscertified.com)

#### Green Building Organizations – Research & Education

Educating Architects for a Sustainable Environment: [www.ease.bsu.edu](http://www.ease.bsu.edu), [mrosenman@bsu.edu](mailto:mrosenman@bsu.edu)  
Ecological Construction Laboratory: <http://www.e-colab.org>  
Greenguard Environmental Institute: [www.greenguard.org](http://www.greenguard.org)  
Green Seal: [www.greenseal.org](http://www.greenseal.org)  
Greenbuilder.com: <http://www.greenbuilder.com/>  
Greenbiz.com: [www.greenbiz.com](http://www.greenbiz.com)  
Mother Earth Living: [www.motherearthliving.com](http://www.motherearthliving.com)  
MDBC/Cradle to Cradle: <http://www.mbdc.com/>  
Scientific Certification Systems (SCS) (510) 832-1415  
The Sustainable Living Roadshow: <http://sustainablelivingroadshow.org/>  
Turning the Ship: <http://www.turningtheship.com/>  
Vital Signs Curriculum Materials Project: <http://arch.ced.berkeley.edu/vitalsigns/>  
ZERI: Zero Emissions Research and Initiatives: [www.zeri.org](http://www.zeri.org)

#### Green Building Organization – Professional

AIA: Committee on the Environment: [http://www.aia.org/cote\\_default](http://www.aia.org/cote_default)  
Architects/Designers/Planners for Social Responsibility: [www.adpsr-norcal.org](http://www.adpsr-norcal.org)  
Construction Management Association of America: [www.cmaanet.org](http://www.cmaanet.org)  
Declaration of Interdependence for a Sustainable Future-UIA/AIA World Congress of  
Architects: [www.uia-architectes.org](http://www.uia-architectes.org)  
Greenbuilder-Green Builder Professionals Directory: <http://directory.greenbuilder.com/search.gbpro>  
Modern Green Living (green professional listings): <http://www.moderngreenliving.com/>  
Institute of Brownfield Professionals: [www.brownfieldpros.org](http://www.brownfieldpros.org)

#### Guidelines & Tools

Architecture 2030: [www.architecture2030.org](http://www.architecture2030.org)  
The BEPAC Foundation: BEPAC-Building Environmental Performance Assessment Criteria-

Canada (604) 736-0013

Cost-Effective Home Building, NAHB Research Center, Inc. (800) 638-8556

Earth Advantage: [www.earthadvantage.org](http://www.earthadvantage.org)

EarthCraft House: [www.earthcrafthouse.com](http://www.earthcrafthouse.com)

The Equator Principles: <http://www.equator-principles.com/>

Green Globes: [www.thegbi.com/greenglobes/faq.asp](http://www.thegbi.com/greenglobes/faq.asp)

Green Star: an Environmental Rating Systems for Buildings: [www.gbcaus.org](http://www.gbcaus.org)

Harris Reports: [www.harrisdirectory.com](http://www.harrisdirectory.com)

LEED (Leadership in Energy & Environmental Design): [www.usgbc.org/LEED](http://www.usgbc.org/LEED)

NAHB Green Home Building Guidelines: [www.nahbrc.org/](http://www.nahbrc.org/)

SITeSS: Systems Integration Tool for Environmentally Sustainable Sites:

<http://www.asla.org/land/112105/sitess.html>

TLC Capital Solutions: [www.tlccapitalsolutions.com](http://www.tlccapitalsolutions.com)

Urban Environmental Accords: [www.urbanaccords.org](http://www.urbanaccords.org)

Wingspread Principles: ([www.summits.ncat.org](http://www.summits.ncat.org)) outgrowth of the National Leadership Summit on Energy and Climate Change, held at the Johnson Foundation's Wingspread Conference Center in June 2006.

### Journals & Magazines

Environmental Design and Construction Magazine: <http://www.edcmag.com/>

Environmental Building News: [www.buildinggreen.com](http://www.buildinggreen.com), [www.ebuild.com](http://www.ebuild.com),  
[www.ebuild.com/Biblio/Biblio.html](http://www.ebuild.com/Biblio/Biblio.html)

The Green Guide: [www.thegreenguide.com/naturalhome](http://www.thegreenguide.com/naturalhome)

Green Source: [www.zinio.com](http://www.zinio.com), [www.greensourcemediakit.com](http://www.greensourcemediakit.com)

Journal of Green Building: [www.collegepublishing.us/journal.htm](http://www.collegepublishing.us/journal.htm)

Natural Home Magazine: <http://www.naturalhomemagazine.com/>

### Municipal Programs

California Integrated Waste Management Board, Sustainable Building Tool Kit:  
[www.ciwmb.ca.gov/GreenBuilding/](http://www.ciwmb.ca.gov/GreenBuilding/)

City of San Jose, CA: [www.sanjoseca.gov/esd/natural-energy-resources-greenbuilding.htm](http://www.sanjoseca.gov/esd/natural-energy-resources-greenbuilding.htm)

City of Seattle, WA: [www.cityofseattle.net/sustainablebuilding/](http://www.cityofseattle.net/sustainablebuilding/)

Collaborative for High-Performance Schools (CHPS): [www.chps.net](http://www.chps.net)

Good Legislation: [www.goodlegislation.com](http://www.goodlegislation.com)

Greenbuilder.com: [www.greenbuilder.com/general/BuildingSources.html](http://www.greenbuilder.com/general/BuildingSources.html)

High Performance Home: <http://www.hph100.org/>

ICLEI: Local Government for Sustainability: [www.iclei.org](http://www.iclei.org)

Institute for Global Communications:

Form Based Codes: [http://www.lgc.org/freepub/PDF/Land\\_Use/fact\\_sheets/form\\_based\\_codes.pdf](http://www.lgc.org/freepub/PDF/Land_Use/fact_sheets/form_based_codes.pdf)

LGEAN: Local Government Environmental Assistance Network: [www.lgean.org](http://www.lgean.org)

Muni-code: [www.municode.com](http://www.municode.com)

Municipal Codes Web Library: <http://www.bpcnet.com/>

PPRC: Green Building Codes and Standards: [www.pprc.org](http://www.pprc.org)

Pacific Northwest Pollution Prevention Resource Center: [www.pprc.org/pubs/greencon/code\\_std.cfm](http://www.pprc.org/pubs/greencon/code_std.cfm)

Placemakers: [www.placemakers.com](http://www.placemakers.com)

Smartcode: [http://www.placemakers.com/smartcode/3000-02-Annotated\\_8.0.pdf](http://www.placemakers.com/smartcode/3000-02-Annotated_8.0.pdf)

Smart Communities Network: [www.Smartcommunities.org](http://www.Smartcommunities.org)

US Mayors Climate Protection Agreement: [www.seattle.gov/mayor/climate/](http://www.seattle.gov/mayor/climate/)

### Planning

American Planning Association: [www.planning.org](http://www.planning.org),

Affordable Housing Density Bonus Ordinance:

[www.planning.org/smartgrowthcodes/pdf/section44.pdf](http://www.planning.org/smartgrowthcodes/pdf/section44.pdf)

Cluster Development Ordinance: <http://www.planning.org/smartgrowthcodes/pdf/section47.pdf>

Model Ordinances: [www.planning.org/smartgrowthcodes/pdf/section48.pdf](http://www.planning.org/smartgrowthcodes/pdf/section48.pdf)

Live/Work Ordinance: [www.planning.org/smartgrowthcodes/pdf/section42.pdf](http://www.planning.org/smartgrowthcodes/pdf/section42.pdf)

Mixed Use Zoning District Ordinance: [www.planning.org/smartgrowthcodes/pdf/section41.pdf](http://www.planning.org/smartgrowthcodes/pdf/section41.pdf)

Town Center Ordinance: [www.planning.org/smartgrowthcodes/pdf/section43.pdf](http://www.planning.org/smartgrowthcodes/pdf/section43.pdf)

Transfer of Development Rights Ordinance:

<http://www.planning.org/smartgrowthcodes/pdf/section46.pdf>

Congress for the New Urbanism: [www.CNU.org](http://www.CNU.org)

New Urbanism: [www.newurbanism.org](http://www.newurbanism.org)

Smart Growth America: [www.smartgrowthamerica.org](http://www.smartgrowthamerica.org)

Urban Land Institute (ULI): [www.uli.org](http://www.uli.org)

Village Development of American, LLC: [www.beyondsuburbia.com](http://www.beyondsuburbia.com)

### Recycling

Alameda County Waste Management Authority: [www.stopwaste.org](http://www.stopwaste.org)

American Forest and Paper Association: (202) 463-2467: National Wood Recycling Directory

American Plastics Council (APC): (800) 243-5790. Recycled Plastic Products Sourcebook.

Buy Recycled Business Alliance, National Recycling Coalition, Inc.(703) 683-9025

Construction Waste Calculator: [www.wastematch.org/reuse/calculator.htm](http://www.wastematch.org/reuse/calculator.htm)

Gypsum Association (GA): (202) 289-5440: Information on gypsum processing equipment, current research and uses of waste drywall

IMEX (Industry Materials Exchange) Seattle, WA: (206) 296-3997.

Steel Recycling Institute (SRI),(800) 876-7274: Local contacts for recycling ferrous metals.

WaterSpec, Triangle J Council of Governments, (919) 549-0551: Provides model specifications for construction waste reduction, reuse and recycling - particularly useful for commercial construction.

**APPENDIX I**

See Disk 1

**APPENDIX II**

See Disk 1

**APPENDIX III**

See Attached