

Green Building Expo Directory



**September 23 & 24,
2005**

**Scottsdale Center for
the Performing Arts**

**Sponsored By:
City of Scottsdale ~ City of Phoenix
& City of Tempe**



Visit the Green Building Web Site - www.ScottsdaleAZ.gov/greenbuilding

Why are we doing Green Building?

The Green Building Program is designed to encourage sustainable and healthy building in homes, businesses, and institutional buildings while informing the general public of the environmental quality of the built environment. The program reflects a concern for natural resources and environmental quality in our local and mutually dependent global environment. The goal of the Green Building Program is to shift both residential and commercial building practices toward sustainable approaches that conserve not only energy, water and other natural resources, but also preserve our environment, strengthen our local economy and promote a quality of life that is enduring over time.

What is Green Building?

A green building is a whole-systems approach utilizing design and building techniques to reduce energy consumption and minimize the environmental impact of building while contributing to the health of its occupants. A green building ideally would:

- ◆ Make appropriate use of land,
- ◆ Preserve plants, animals, endangered species, and natural habitats,
- ◆ Make efficient use of limited natural resources and materials with low embodied energy
- ◆ Enhance human health for builders and homeowners,
- ◆ Use non-toxic and recycled-content materials,
- ◆ Reduce total lifetime energy usage,
- ◆ Have a positive effect and increased productivity on occupants working and living spaces,
- ◆ Be economical to build and operate, and at the end of building life,
- ◆ Demonstrate recyclability.

City of Scottsdale Green Building Advisory Committee Members 2005/06

Michele Cohen, Chair, EQAB Member
Daniel Basinger, EQAB Chairman
Daniel Aiello, Janus II Environmental Architects
Joan Baron, Baron Studio
Nick Davis, Beck Group
Lance Donatello, Scottsdale citizen
Linda Eales, Linda Eales Design Associates
Kevin Edwards, Edwards Design Group
Lee Feliciano, Valley of the Sun Solar

Anthony Floyd, City of Scottsdale
Ronald W. Hand, E/FECT Sustainable Design Solutions
Christopher G. Harrison, Grayhawk Development
Jesse Henson, Kyocera Solar
Mary Grace Hime, Architectural Resource Team
Deejaye Lockwood, Windermere Sonoran Properties
James McCay, Scottsdale citizen
Frances Smith, Southwest Gas
Beverly Westgaard, AZ Envir. Strategic Alliance

Sub-Committee of the Scottsdale Environmental Quality Advisory Board

Welcome

Dear *Green Building Expo* Attendees,

Welcome to the 8th annual *Green Building Expo*, Arizona's premier showcase for products and services promoting responsible building while improving our environment. Thank you for joining us here in Scottsdale in celebrating a sustainable way of life. Each of you, by attending today's event, makes a difference and changes the direction of growth and development in our shared neighborhoods. On behalf of the *Green Building Expo* Committee, the City of Scottsdale, the City of Phoenix and the City of Tempe, let me congratulate you for becoming part of our community.

We should all put forward a special thanks to the cities of Scottsdale, Phoenix and Tempe for their continuing efforts supporting these important *environmentally progressive* technologies. Their combined vision recognizing the tremendous benefits achieved by sharing the knowledge of these important products and processes will bestow long lasting returns. By providing the critical personnel and resources, they open a valuable pathway to a more sustainable future.

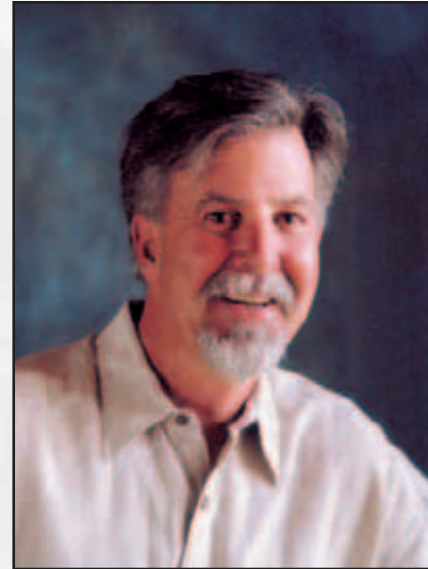
Together, let's celebrate the great achievements by the Cities including the City of Scottsdale's Green Building (LEED™) Policy for new city buildings and remodels, the newly approved Green Remodeling Guidelines, and the award bestowed by the Valley Forward Association for the McDowell Sonoran Land Trust (MSLT) in Scottsdale which won top honors – the President's Award – in Valley Forward's 25th Annual Environmental Excellence Awards program, Arizona's oldest and most prestigious environmental competition.

By your attendance here today, you support these new, innovative methods and promote critical change in the direction of our valley's future environment. Your interest in innovative alternative construction is the key to implementing industry change for the advantage of all of our families.

Thank you, and enjoy our show!

Sincerely,

Kevin Edwards, Chairman
Edwards Design Group, Inc.
Green Building Expo, 2005



Presented by:



Reception Sponsor:



Green Building Expo Committee 2005

Joan Baron, Baron Studio
Dan Basinger, Scottsdale Envir. Quality Adv. Bd.
Tanya Chavez, City of Tempe
Michelle Cohen, Green Building Adv. Comm. Chair
Linda Eales, Linda Eales Design Associates
Kevin Edwards, Edwards Design Group
Molly Edwards, City of Scottsdale
Lee Feliciano, Valley of the Sun Solar
Anthony Floyd, City of Scottsdale
Sandra Hertlein, City of Scottsdale
Mary Grace Hime, Architectural Resource Team
Rick Johnson, Edwards Design Group
Robin Meinhart, City of Scottsdale Rob Millar, City of Scottsdale
Judy Melton, City of Scottsdale
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Dani Riley, City of Scottsdale
Sue Taaffe, City of Tempe
Patricia Thomas-Whitfield, City of Phoenix
Cynthia Weaver, City of Phoenix
Beverly Westgaard, AZ Environmental Strategic Alliance

Cover photos starting from top, in clockwise order:

- 1) Beautieu Residence (Hydrogen/Solar)
- 2) Baron Residence (Green Remodel)
- 3) Floyd Residence (Solar/Green Remodel)
- 4) Strata International (Foam House)

Program Schedule

Scottsdale Center for the Performing Arts
Friday, September 23, 2005

Exhibit Hours: 11:00 a.m. – 6:45 p.m.

| Stage 2 | 1 st Floor Gallery | 2 nd Floor Gallery |
|---|--|--|
| <p>12:00AM – 12:45AM</p> <p>Common Sense and Sensibility in Architectural Design for Sustainability Eddie Jones, Jones Studio eddie@jonesstudioinc.com 602-264-2941</p> | <p>12:00AM – 12:45AM</p> <p>City of Phoenix Green Projects: The Driver Training Academy Brooke Bogart, Deutsch Assoc. BBogart@2929.com 602-840-2929</p> | <p>12:00AM – 12:45AM</p> <p>Energy, Climate Responsive Architecture, and Building Commissioning Ray Alfini and James Bochat, Pro Services ray.alfini@pro-services-az.com 602-437-8110</p> |
| <p>1:00 – 1:45PM</p> <p>Green City Planning Frank Gray, General Manager Scottsdale Planning & Development FGray@scottsdaleaz.gov 480-312-2890</p> | <p>1:00 – 1:45PM</p> <p>Cost and Benefits of Building Green Mark Wilhelm – Green Ideas mark@greenideas.com 602-512-0558</p> | <p>1:00 – 1:45PM</p> <p>High Performance Green Schools Chuck Burke, ADEQ cgb@ev.state.az.us 602-771-4207 Doug Crockett, Tucson Unified School District doug.crockett@tusd.k12.az.us 520-225-4673</p> |
| <p>2:00 – 2:45PM</p> <p>The Arizona Energy Picture Ken Clark, Director, Arizona Department of Commerce, Energy Office kclark@azcommerce.com 602-771-1139</p> | <p>2:00 – 2:45PM</p> <p>Paper Block as a Viable Recycled Building Material Barry Fuller, The Center for Alternative Building Studies info@livinginpaper.com 480-968-4115</p> | <p>2:00 – 2:45PM</p> <p>Cities Adopting Sustainable Design Principles Mohit Mehta, Elements Group mmehta@bnim.com 602-326-9369</p> |
| <p>3:00 – 3:45PM</p> <p>LEED™ for Homes - Arizona Pilot Green Rating Program Jim Hackler jhackler@usgbc.org 202-587-7182 Jay Hall, USGBC - LEED for Homes jhall@buildingknowledge.net 202-828-7422</p> | <p>3:00 – 3:45PM</p> <p>Design and Benefits of Green Roofs Tom Shackelford, Arizona Cool Roof Council Tom Shackelford3@cox.net 602-402-4440 Steve Skinner, HydroTech marketing@hydrotechusa.com 312-337-4998</p> | <p>3:00 – 3:45PM</p> <p>Solar Technologies Lane Garrett, ETA Engineering lane@ETAEngineering.com 480-966-1380</p> |
| <p>4:00 – 4:45PM</p> <p>City of Scottsdale Green Projects: Scottsdale Senior Center Jan Lorant, Gabor Lorant Architects janL@gaborlorant.com 602-667-9090 Chuck Skidmore, City of Scottsdale cskidmore@scottsdaleaz.gov 480-312-7606 Dan Worth, City of Scottsdale dworth@scottsdaleaz.gov 480-312-2776</p> | <p>4:00 – 4:45PM</p> <p>Natural Earth Plasters and Recycled Paving Materials Dennis Hopper, The Hopper Company jenifer@hopperfinishes.com 602-273-1338 Jeff Schneider, Terra Pave jlschneider18@aol.com 602-684-3865</p> | <p>4:00 – 4:45PM</p> <p>Arizona Resource Exchange Rob Barnett, Arizona Environmental Strategic Alliance robb@pinggolf.com 602-687-5255</p> |

Program Schedule

Scottsdale Center for the Performing Arts
Saturday, September 24, 2005

Exhibit Hours: 9:00 a.m. – 4:30 p.m.

| Stage 2 | 1 st Floor Gallery | 2 nd Floor Gallery |
|--|---|---|
| <p>11:00AM – 11:45AM</p> <p>Green Home Remodeling Guidelines Anthony Floyd, City of Scottsdale Afloyd@scottsdaleaz.gov 480-312-4202 Richard Zimmerman, Arizona Sunshine asunpub@msn.com 602-956-5888</p> | <p>11:00AM – 11:45AM</p> <p>Understanding Low and Zero VOC (volatile organic compounds) paints, adhesives, and other new technologies Ian Ornstein, Innovative Technologies ian@innovativeformulations.com 520-628-1553</p> | <p>11:00AM – 11:45AM</p> <p>New Alternative Air Cooling Technologies for home and office: Getting the most cooling for your dollars Shields Fair, Alter-Air Corp. alteraircorp@yahoo.com 480-966-1280</p> |
| <p>12:00 – 12:45PM</p> <p>Overview of Eco-friendly, Healthy and Sustainable Building Products Jeff Frost, AKA Green info@akagreen.com 480-946-9600 Anne Bertino, AKA Green anne@akagreen.com 480-946-9600</p> | <p>12:00 – 12:45PM</p> <p>Water Use It Wisely: Rebates & Incentives to Conserve Water Elisa Klein, City of Scottsdale Eklein@Scottsdaleaz.gov 480-312-5670 Karen Warner, City of Scottsdale Kwarner@scottsdaleaz.gov 480-312-5659 Mary Lu Nunley, City of Phoenix mary.lu.nunley@phoenix.gov 602-534-3950</p> | <p>12:00 – 12:45PM</p> <p>Where's the Sun? Dan Aiello, Janus II Environmental Architects, Arizona Solar Center J2EnvArch@aol.com 602-952-8192</p> |
| <p>1:00 – 1:45PM</p> <p>Designing for the 21st Century: Why green and sustainable? What does it have to do with Growth & Cars Tony Brown, ECOSA Institute brown@ecosainstitute.org 928-541-1002</p> | <p>1:00 – 1:45PM</p> <p>Ponds in the Desert: Creating Micro-Climates and Eco-Systems with Fountains & Swimming Pools Barbara & Paul Holdeman, The Pond Gnomes pondgnome@cox.net 623-572-5607</p> | <p>1:00 – 1:45PM</p> <p>Solar Incentives and Grid-tie Photovoltaic Systems Lee Feliciano, Valley of the Sun Solar lee@valleyofthesunsolar.com 602-300-850 Jesse Henson, Kyocera Solar hensonarch@earthlink.net 602-430-4264</p> |
| <p>2:00 – 2:45PM</p> <p>Arizona's First Solar/Hydrogen House: Self-powered House of the Future Today Brian Beaulieu, Sustainable Engineering Beaulieu2005@mac.com 480-797-4472</p> | <p>2:00 – 2:45PM</p> <p>Weaving together plants, animals, soils, water and people into a productive community Don Titmus, Permaculture Guild fdpc@4dirs.com 480-962-6353 Greg Peterson, Permaculture Guild fdpc@4dirs.com 480-962-6353</p> | <p>2:00 – 2:45PM</p> <p>Graywater Systems: Saving Money and Water Paul Decker, Eco-Tec 480-216-4447</p> |
| <p>3:00 – 3:45PM</p> <p>Rainwater Harvesting: Collecting and Storing Rainwater for Everyday Use Heather Kincade-Levario, Forgotten Rain hklevorio@forgotten.com 602-550-9316 Jo Miller, City of Glendale jmiller@glendaleaz.com 623-930-3596</p> | <p>3:00 – 3:45PM</p> <p>Competitive Solar Energy Investment: Making Money from the Sun Paul Symanski, ADD Energy paul@addenergy.net 602-881-1256</p> | <p>3:00 – 3:45PM</p> <p>Economically Sensible Green Building Kevin Edwards, Edwards Design Group kevin@edwardsdesigngroup.com 602-295-9954</p> |

Green Building Products & Services Directory

**a.k.a. Green
Environmental Building Supplies**
4408 N. Miller Road
Scottsdale, AZ 85251
Mick Dalrymple
480-946-9600
www.akagreen.com

**Alter Air Corporation
Solar Air Conditioning**
2010 E. University, #124
Tempe, AZ 85281
Shields Fair
(480) 966-1280
www.alterair.com

**American Solar Electric, Inc.
Solar Electric Power Systems**
3008 N. Civic Center Plaza
Scottsdale, AZ 85251
Matt Shannon
(602) 725-6421
www.americanpv.com

**APEX Construction Systems
Apex Polystyrene Cement Block**
15930 SW 72nd Ave.
Portland, OR 97224
Robert Budihias
971-222-0006
www.apexconsys.com

**Arizona International Exposition
and Centennial Project
Sustainability Exhibits & Events**
6107 E. Rose Circle Dr.
Phoenix AZ 85018
Bill Lautenbach
(480) 949-8467
azworldsfair@cox.net

**ASU at the Polytechnic Campus
Environmental Technology Program**
7001 E. Williams Field Rd.
Mesa, AZ 85212
Nicholas Hild
(480) 727-1304
<http://etmonline.asu.edu>

**AZ Department of Environmental
Quality**
Pollution Prevention
1110 W. Washington St.
Phoenix, AZ 85007
Chuck Burke
602-771-4207
www.azdeq.gov

**AZ Solar Energy Industries
Association
Solar Technologies**
5056 S. 40th St., Suite C
Phoenix, AZ 85040
Sean Seitz
602-768-3260
www.arizonasolarindustry.org

**Blazing Solar
Solar Hot Water, Heating and Ovens**
P.O. Box 2594
Mesa, AZ 85214
Andrew Gerl
(602) 799-5942
blazingsolar@aol.com

**Bonded Logic
Cotton Fiber Insulation**
411 E. Ray Road
Chandler, AZ 85225
Jerry Weston
480-812-9114
www.bondedlogic.com

**Casey's Exterminators
New Construction Treatment for
Termite Prevention/Control**
2033 W. North Lane, Suite 19
Phoenix, AZ 85021
Trent Hicks
(602) 995-3895
www.arrowexterminators.com

**Center for Alternative Building
Studies, The Paper-block**
843 West Elna Rae St.
Tempe, AZ 85281
Barry J. Fuller
(480) 968-4115
www.livinginpaper.org

**CGI Silvercote
Solarguard-reflective Insulation**
8550 N. 91st Ave., Bldg. B, Ste. 23
Peoria, AZ 85345
Kent Power
(800) 835-9354
www.silvercote.com

**City of Phoenix
Engineering and Architectural
Services**
200 W. Washington St.
Phoenix, AZ 85003
Patricia Thomas-Whitfield
(602) 534-3950
www.phoenix.gov

**City of Tempe
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Gerard Windstein
480-947-5286
www.ecoclean-az.com
www.thehealthyhomesolution.com

**Ecosa Institute
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212 B South Marina St.
Prescott, AZ 86303
Tony Brown
928-541-1002
www.ecosainstitute.org

**Eco-Safety Products, LLC
Low Odor Paints, Stains, Coatings,
Specialty Cleaners, Natural Pest
Control**

4710 W. Camelback Rd.
Glendale, AZ 85301
John Bennett
(623) 934-3947
www.eco-safety.com

**Edwards Design Group
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8151 E Smokehouse Trail
Scottsdale, AZ 85262
Kevin or Doug Edwards
480-563-7774
www.edwardsdesigngroup.com

**Enlux Lighting/Enertron
LED Floodlights**

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Chandler, AZ 85225
Ronald Masenti
(480) 733-8065
www.enluxled.com

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(602) 437-0092
www.mascoecs.com

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Nicole Sturgill
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www.hiddenvalleyroofing.com

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Stone Plaster**

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Phoenix, AZ 85034
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www.hopperfinishes.com

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Tucson, AZ 85713
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(520) 628-1553
www.innovativeformulations.com

**International Window AZ, Inc.
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Phoenix, AZ 85040
Marsha Grable
(602) 232-2500
www.intlwindow.com

**Johns Manville Corp.
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9699 N Hayden Rd Ste 108-104
Scottsdale, AZ 85258
Ron Lonie
480-314-0728
www.jm.com

**Mendelsohn Construction, LLC
General Contracting, Green Building,
Metal Framing**

8229 N. 53rd St.
Paradise Valley, AZ 85253
Michael Mendelsohn
(480) 695-5100
mmarizona@aol.com

**Mud Builders
Natural Building/General Contractor**

10575 N. 114th St., Ste. 103
Scottsdale, AZ 85259
Michael Niall
(480) 344-7727
www.mudbuilders.com

**Phoenix Permaculture Guild
Sustainable Living Environments**

P.O. Box 32077
Mesa, AZ 85275
Don Titmus
(480) 962-6353
www.permaculture.net/guild

**Pond Gnome, The
Organic Ponds & Watergardens**

22767 N. 104th Lane
Peoria, AZ 85383
Barbi Holdeman
623-572-5607
www.pondgnome.com

**Rammed Earth Solar Homes Inc.
Rammed Earth Custom Homes and
Walls**

910 W. La Osa /P.O. Box 654
Oracle, AZ 85263
Julie Szekely
(520) 896-3393
www.rammedearthhomes.com

**Rastra Corp.
Insulated Concrete Foam Wall
System**

7621 E. Gray Road, Ste. A1
Scottsdale, AZ 85251
Elfriede Fober
480-443-9211, X202
www.rastra.com

**Reference Library, The
Architectural Product Library**

99 E. Virginia, Suite 140
Phoenix, AZ 85004
Louise Rehse
602-258-7499
www.thereferencelibrary.com

**Sierra Pacific Industries
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Phoenix, AZ 85072
Melissa Hunsaker
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www.srpnet.com/environment

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www.techblock.com

**Thermoblock
Insulated Concrete Foam Wall System**

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James Eyses
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www.thermoblock.com

UCSC, Ltd.
Spray Polyurethane Foam Insulation,
Cool Roof Acrylic Coatings
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 Phoenix, AZ 85005
 Shawn Harris
 (602) 553-8000
www.buyucsc.com

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 8390 E. Via de Ventura , #F-110& 111
 Scottsdale, AZ 85258
 Lee Feliciano
 (602) 300-8500
www.valleyofthesunsolar.com

US Green Building Council, AZ Chapter
Leadership in Energy Environmental
Design (LEED)
 7620 E. McKellips Road, Suite #4 PMB 87
 Scottsdale, Arizona 85257
 Douglas McCord, Programs/Events
 Committee Chair
 (480) 990-8848
www.usgbc.org/Chapters/arizona

Water Use It Wisely
Water Conservation
 9312 N. 94th St.
 Scottsdale, AZ 85258
 Elisa Klein
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www.wateruseitwisely.com



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ENVIRONMENTS FOR *Living*

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 Fax: 623-780-0732
 Cell: 602-757-2776
 Email: thom.lynch@mascocs.com



► Important Announcement

THE ARIZONA WORLD'S FAIR
 August 31, 2011 to Labor Day 2012

The AZWF is a major world exposition of both profit and non-profit events and exhibits. The world's most unique fair - it is INCLUSIVE not EXCLUSIVE with a core fair area in Phoenix metro and exhibits Statewide. YOU are invited to PARTICIPATE. Every trade and field of endeavor will be featured. Everyone's involvement is welcomed. 40 million people are expected to attend, bringing \$32 billion into Arizona. The fair's theme is "Sustainable Living for Humanity." Our fair will lead the World into the future.

WANT MORE INFO? azworldsfair@cox.net



Johns Manville

A Berkshire Hathaway Company

9899 N. Hayden Road
 Suite 108-104
 Scottsdale, AZ 85258
 480 314 0728
 480 314 0526 Fax

Ronald T. Lonie
 Account Manager
 Building Insulation Division

602 432 1826 Cell
lonier@jm.com
www.jm.com



SCOTTSDALE



**GREEN BUILDING
PROGRAM**

City of Scottsdale

GREEN BUILDING LECTURE SERIES

Fall/Winter/Spring – 2005/2006

Scottsdale Community Design Studio
7506 E. Indian School Road, Scottsdale

Admission is free

Green building advocates responsible use of our natural resources in the design and construction of our built environment. Each lecture will address one of the many green building topics that demonstrate energy/resource efficient, healthy, and environmentally responsible building practices.

Each of the following lectures will take place on the 1st Thursday of the month from **7 to 9 PM** at the City of Scottsdale, **Community Design Studio** located at 7506 E. Indian School Road (NE corner of 75th Street & Indian School Road).

| | |
|--------------------------|---|
| September 1, 2005 | It's Easy Being Green: Introduction to Scottsdale's Green Home Rating System |
| October 6, 2005 | Using Reclaimed Building Materials |
| November 3, 2005 | Alternative Wall & Roof Systems |
| December 2, 2005 | Natural Building Materials |
| January 5, 2006 | Home Improvements and Green Remodeling |
| February 2, 2006 | Building Science: The system approach to Energy Efficiency |
| March 2, 2006 | Interiors & Indoor Environmental Quality |
| April 6, 2006 | Water Efficiency in the Sonoran Desert |
| May 4, 2006 | Innovative Green Built Projects in the Phoenix/Scottsdale Area |
| June 1, 2006 | To be Announced |

Subscribe To *GREEN BUILDING EVENTS* - Go to www.scottsdaleaz.gov/listerve

For more information, please call (480) 312-3111.

Or visit the Green Building Web Site - www.ScottsdaleAz.gov/greenbuilding



GREEN HOME REMODELING TIPS

Remodeling offers a great opportunity to incorporate energy and water saving techniques. This handout is meant to help you make informed decisions as you plan for the remodeling of your home.

ENERGY

- Lighting – use compact fluorescent bulbs. Newer fluorescent bulbs offer a soft white light that mimics a regular light bulb, yet uses 75% less energy. The best targets are 60-100W bulbs used several hours a day.
- Appliances – The energy cost to run appliances over its lifetime is much greater than the purchasing cost. It makes good economic sense to buy energy efficient appliances. Your refrigerator is likely the largest energy consumer in the house, so think about replacing your refrigerator if it is old. Look for Energy Star labeled appliances.
- Water heaters – If you don't have an insulating blanket on your water heater, consider getting one. It will pay for itself in less than a year. If you need to replace a water heater, think about an on-demand tankless water heater. A tankless water heater does not hold any water, so it does not need to be turned down for vacations, there is no risk of failure like that of a tank heater that can spill many gallons of water and ruin your floor. They use less overall energy, since no water is kept hot in a tank. Gas tankless water heaters are generally more efficient. You will need to have your house checked to ensure your gas lines are sized properly. Whole house tankless heaters start at about twice as much in cost as a normal tanked water heater. Other possible disadvantages include limited hot water flow when there are multiple fixtures running at one time. As another alternative, consider a recirculating hot water system. This involves installing a pump to circulate hot water on a loop between the most remote plumbing fixture and the water heater. In order to conserve energy, the circulation pump only operates when hot water is required by means of an activation button or timer.
- Windows – South-facing windows offer a great opportunity to absorb free energy (winter sunlight) while north-facing windows provide uniform lighting throughout the year. East- and west-facing windows are subjected to intense morning and afternoon sunlight causing significant summer heat gain. Consider installing low-e double pane windows for at least the east and west windows. Look for a Solar Heat Gain Coefficient (SHGC) of 0.40 or less. As a least-cost alternative, consider exterior shading devices such as an overhang (at least 10 feet), trellis, vertical/horizontal louvers, screen wall, or vegetation such as trees.
- Daylighting – Consider adding natural light sources to reduce the need for artificial light. Light tubes appropriately placed and exterior shaded windows are good ways to enhance natural light with minimum heat gain in existing homes.
- Flooring – If you are replacing floors, consider more durable and natural surfaces such as tile, stone, cork, harvested wood (certified by the Forest Stewardship Council or Sustainable Forest Initiative), exposed stained concrete, or bamboo. Carpets are often the source of allergens and can contribute to an unhealthy indoor environment. Carpet also has no thermal mass so the floor will be warmer in the summer. Tile, stone, and exposed concrete are good retainers for coolness.
- Insulation – Increase the amount of insulation in your house to a minimum R-30 in the ceiling and R-13 or greater in the walls where feasible. Consider exterior wall insulation applications (outsulation) such as foam and ceramic coatings. As a least-cost alternative, consider exterior shading for sun exposed walls such as an overhang (at least 10 feet on east & west walls), vertical trellis with vines, and/or trees. Provide abundant shade around all entrances to reduce summer heat island effect. Seal doors with weather-stripping and windows with caulking.

WATER

- Landscaping – A majority of our water usage goes to outdoor landscaping. You can substantially reduce your water usage by replacing non-native plants and shrubs with native varieties. The native vegetation is well adapted to our arid climate and sunny days. Native plants not only require less water, but also require less maintenance once established, and often no chemicals or herbicides for protection. Native plants have built-in resistance to local pests that exotic plants do not have. Consider reseeded your lawn with a low water variety, or simply removing it altogether. See the Scottsdale Water Conservation Department resources for rebates, water guidelines and other helpful information.
- Rainwater and Graywater – Direct runoff water from gutters to bushes, trees, plants and other vegetation. Rainwater can be stored in cisterns and for later use (cistern must be covered to prevent algae and mosquito breeding). Gray water is also a good source for watering plants. Graywater is wastewater from washing machines, bathroom sinks, showers, and tubs. Graywater may not be sprayed or run off your property. See green building resource list for more information.



- Appliances and Fixtures – Leaky fixtures can account for substantial water loss. Fix leaky fixtures; replace faucets and showerheads with low flow fixtures. You can also replace your toilets with dual flush toilets that provide an optional flush control for liquid waste (uses half as much water with superior flushing performance). There are also other ultra-low flow toilets that use less than 1.6 gallon per flush. Finally, consider front-loading washing machines that use less water with better cleaning and spin-drying performance.

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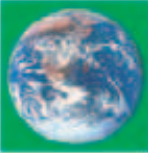
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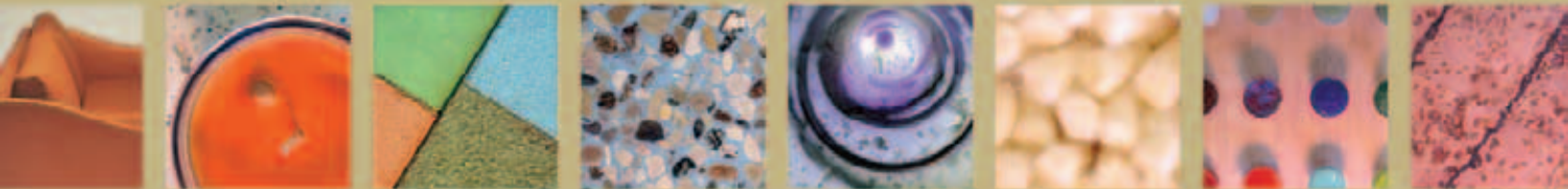
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