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IN THIS ISSUE

5 Steps to a Well Watered Lawn

Energy Efficiency: A Home Buyer Must-Have

Optimize Outdoor Lighting

Keep Cool with Outdoor Improvements

Improve Room Air Conditioner Efficiency

Create a Breezy Home

Not Your Average Home

Dive into Pool Savings

Save Energy While You're Away



welcome to

eco@home™

Summer 2013

did you know...

Using a 6-inch pot on an 8-inch electric burner can waste more than 40 percent of a burner's heat. When cooking, make sure your pots and pans are the appropriate size for the burner you're using.

We want to hear from you. The editors of **eco@home** want to know how you conserve energy and water and reduce your environmental footprint. Share your photos and ideas by e-mailing us at **ecoeditor@lexiconconsultinginc.com** with "My Projects" in the subject line. You might see your photo in an upcoming issue of the magazine.

Keep your cool this summer!

eco@home is all about staying comfortable this summer—and saving energy and water wherever we can.

Be sure to check out our suggestions for using natural cross-ventilation to cool and freshen your home, plus tips for watering grass wisely that still result in a lush lawn. And, because we all want to spend those long summer evenings outside, don't miss our ideas for optimizing exterior lighting.

You'll want to read about the amazing net-zero energy home that the U.S. government built in Maryland. The house is actually an energy efficiency lab that's housed in a typical home model—complete with a simulated "family"—with the goal of producing as much energy as it consumes.

And if a dip in the water is in your plans, check out our suggestions for saving energy and water in your home swimming pool. There are lots more ideas easy-to-try tips in this issue, so dive in!

Happy summer!



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[**Return to Table of Contents**](#)



5 STEPS TO A WELL- WATERED LAWN

It's possible to grow a lush, green lawn while minimizing water use and reducing your water bill. Here's how:

1. **Step on the grass.** If the blades immediately bounce back, you can hold off on watering for a few days. If the blades stay down, better get out the sprinkler.
2. **Water your lawn deeply and less frequently** to promote root growth. The longer the root, the more moisture it can take in. To encourage deeper roots, set your mower blade high and avoid cutting off more than 1/3 of the grass height.
3. **Water between 4 and 9 a.m.** Any time you use a sprinkler, some water is lost due to evaporation, but more evaporates on hot, windy days. Use a sprinkler early in the morning to save H₂O.
4. **Harvest rainwater** in a rain barrel. Recycled rainwater is free of chemicals and minerals that could hinder grass growth.
5. **Dodge runoff.** If water runs off your lawn and into the driveway or street before it has reached the roots, turn off the sprinkler, wait 15 to 20 minutes to let the water soak into the soil, and then start watering again.

try this
today...

Save energy, money and even manage to squeeze in time outside by line-drying your clothes.

[Return to Table of Contents](#)

Energy Efficiency: A Home Buyer Must-Have

If you're in the market for a new home, you might already be looking for walk-in closets and granite countertops. But you may want to add one more amenity to your wish list: green.

The desire to save money and energy is a definite motivator among homebuyers today—and folks in the housing industry are paying attention.

According to the National Association of REALTORS' 2012 Profile of Home Buyers and Sellers, 87 percent of homebuyers said heating and cooling costs were at least somewhat important to their decision. And approximately 70 percent considered both energy-efficient appliances and lighting to be important features.

Research conducted by the National Association of Home Builders (NAHB) revealed that 68 percent of homebuilders anticipate green features and technology to be key selling points in all newly constructed homes by 2015. And a survey by *Better Homes and Gardens* magazine revealed that 68 percent of homebuyers ranked energy-efficient heating and cooling systems as a priority for their next home.

Make Improvements

If you're selling a home, energy-efficient upgrades may tip the scale in your favor. Buyers are seeking:

- CFLs and LED lights
- Tankless water heaters
- Abundant insulation in walls, attics, and crawl spaces
- Low-e windows
- Air filtration and ventilation systems
- ENERGY-STAR®-rated HVAC systems and/or new ductwork
- Low-flow faucets and showerheads; water-saving toilets
- Weather stripping, caulk, and other evidence of air sealants
- Energy-efficient appliances

In new construction, buyers are also looking for these green features:

- Solar, wind, and water-power systems
- Geothermal systems
- Rainwater harvesting
- Durable sustainable building materials

Learn More

Wondering what improvements you could make to your home? Call a certified home energy auditor to perform an audit and make suggestions for efficient upgrades. Go to resnet.us or contact your utility to learn more.

[Return to Table of Contents](#)

Optimize Outdoor Lighting

It's wise to keep your home well lit at night, but that illumination may waste energy and create light pollution. Try these tips for efficient outdoor lighting:

- **Install fully shielded fixtures**—they emit no light above the lamp. Look for ENERGY STAR®-labeled models with motion detectors and automatic daylight shut-off.
- **Replace incandescent lightbulbs** with compact fluorescents (CFLs). Most spiral or tube CFLs can be used in enclosed fixtures that protect the bulbs from the elements. For exposed lights, purchase outdoor CFLs. Fixtures with photocells, motion sensors, and electronic timers may not work with CFLs, so review packaging for compatibility before purchasing.
- **Consider energy-efficient light-emitting diodes (LEDs)** for pathways, steps, and porches. LEDs are durable and perform well in outdoor settings.
- **Illuminate decks, walkways, driveways, and planting beds** with solar fixtures. Outdoor solar lighting systems work on solar cells, which convert sunlight into electricity and store it in batteries for night use.
- **Point ground fixtures at your home's eaves**, not at the sky.
- **Choose the lowest wattage possible** to get the job done. When you switch from incandescent lightbulbs to CFLs, you need less wattage—and fewer lumens—to achieve the same light output. And if you're using shielded fixtures, you can use even fewer lumens because the light is being focused.



[Return to Table of Contents](#)

Keep Cool with Outdoor Improvements

Lower the temperatures inside your home this summer without dialing down your a.c. Try these projects.

Update with paint. Sprucing up siding with a new coat of paint can help save energy. Choose a light hue that will reflect the sun's rays. This is especially effective if you live in an area with warm weather year-round.

Consider a cool roof <link to: <http://www1.eere.energy.gov/femp/pdfs/coolroofguide.pdf>>. Light-colored cool roofs absorb less solar energy than traditional roof surfaces. Choosing ENERGY STAR®-qualified roofing products could lower your roof temperature as much as 100 degrees and reduce peak cooling demand up to 15 percent, according to ENERGY STAR.

Install awnings. Whether permanent or retractable, these should be sewn from opaque, tightly woven fabric. According to a 2012 study from the Professional Awning Manufacturers Association, fabric awnings or exterior shades could save you up to \$200 every year by lightening the load on your air conditioner.

Landscape for savings <link to: <http://energy.gov/energysaver/articles/landscaping-energy-efficient-homes>>. Strategically placed plantings can provide shade and lower the air temperature near your house. Plant shrubs or bushes around your home for a layer of insulation against heat gain. Or, place a trellis with climbing vines by windows and walls for energy-saving shade.

did you know...

Planting a deciduous tree along the south and west sides of your home can help reduce the amount of money you spend on air conditioning in the summer.

Inspect your system. Check the outdoor condenser coils on your air conditioning unit for dirt, debris, and overgrown foliage that could reduce airflow. Clear the area surrounding the coil to reduce buildup, and trim branches back about two feet. If you notice any bent coils, carefully straighten them with a fin comb to improve efficiency.

[Return to Table of Contents](#)

Improve Room Air Conditioner Efficiency

If you're cooling a single room or a small apartment, a room air conditioner can inexpensively provide the relief you need on hot days. Here's how to maximize your unit's efficiency:

Select an efficient unit. For the greatest energy savings, buy an ENERGY STAR®-certified unit with an energy-efficiency ratio of 10 or more. Look for features such as a slide-out filter for easy cleaning, variable fan speeds, and a digital thermostat.

Pick the perfect spot. Install the unit in a north-facing window, and make sure the outdoor heat exchanger is shaded—direct sunlight reduces efficiency by 10 percent. Avoid placing hot appliances—such as lamps or TVs—near the unit's thermostat. This causes the unit to run longer than necessary.

Size it up. If a room air conditioner is too small, it won't cool sufficiently, and if it's too big, it won't cool uniformly. So take the room's square footage and exposure to sunlight and shade into consideration. Then visit energystar.gov and search for "room air conditioner" for a chart to help you determine the cooling capacity appropriate for your room.

[Return to Table of Contents](#)

Create a Breezy Home

Feel cooler and save electricity at the same time?

It's possible, thanks to natural cross-ventilation.

This energy-saving exercise removes unwanted heat from your home and creates a cooling windchill effect, so you can reduce your AC use. Another benefit: It creates a healthier indoor environment because it helps rid your house of volatile organic compounds, mold spores, and other air pollutants. Here's how to make cross-ventilation work:

Study wind patterns. Cross-ventilation allows cooler outdoor air with positive pressure to enter your house through a windward-facing inlet—such as a door, window, or vent—and push out accumulated warm air with negative pressure through a leeward-facing outlet—another window, door, or vent. With this in mind, learn what direction the wind typically flows at different times of day around your house, and plan accordingly.

Create airflow. Avoid or reduce obstructions between the openings. You'll feel the results even more if you use smaller openings for inlets and larger openings for outlets, as this creates a vacuum effect. Cross-ventilate at night, when it's cooler outdoors, to rid your home of the day's heat.

Make it more effective. To reap the biggest benefits, team cross-ventilation with other cooling methods. Beef up attic insulation to prevent heat from entering your home in the first place and dress your windows with sun-blocking treatments. And reduce your use of heat-generating appliances, lighting, and hot water during the day.

Not Your Average Home

Most green model homes are scaled-back, space-age structures few people can imagine living in.

But not the National Institute of Standards and Technology (NIST) Net-Zero Energy Residential Test Facility in Gaithersburg, Maryland. The structure—which includes 2,700 square feet of finished living space and an unfinished 1,500-square-foot basement—looks like an upscale suburban home, complete with four bedrooms, three bathrooms, and a detached garage. It's even occupied by a family of four—two working parents, plus their 14-year-old and 8-year-old children.

Except the family isn't real.

Researchers at NIST created the virtual family, and even planned a precise schedule of daily household activities for them. Using a series of sensors and computer programs, every activity of the family is simulated and monitored,

from showering to turning on a television to using a toaster. Researchers use the data to study whether it's possible for an "average" family to live in the home they want and still reach net-zero energy usage.

The house was built to meet the U.S. Green Building Council's LEED Platinum certification as well as Energy Star 3.0 and Indoor airPLUS standards. Everything in it—aside from one air exchanger—was made in the United States.

The house boasts a highly efficient building envelope, energy-efficient appliances, LED and CFL lighting, radiant-heat flooring, specially designed energy-efficient space conditioning and air distribution systems, a solar hot water system, a photovoltaic (PV) solar system, a geothermal heating system, and smart metering.

continued on next page

Energy not consumed by the home's virtual residents is sold back to the utility company, helping to offset electricity purchases in months when the family has higher energy demand. Over the course of the year the home is expected to produce more energy than is purchased from the utility company—hence the name “net zero.”

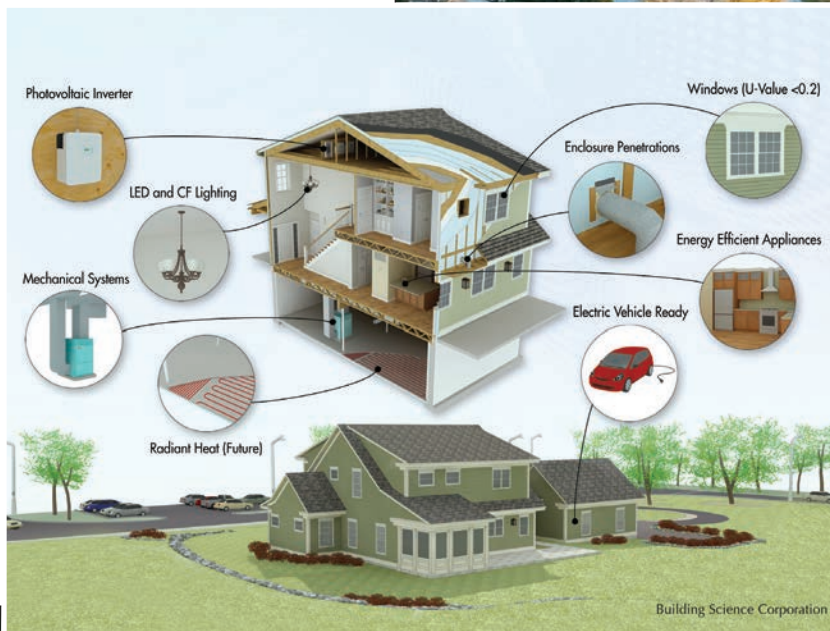
It's a rather impressive feat from a home that looks ... well, pretty typical.

Learn more about the NIST net-zero home at www.nist.gov/el/nzertf.

try this today...

Plant a Rain Garden

The NIST net-zero home doesn't have gutters. Instead, stormwater is channeled to a gravel perimeter, runs into corrugated piping, and is fed into a bioretention pond. Can't ditch your gutters? Capture rainwater runoff by planting a rain garden. Visit www.groundwater.org/ta/raingardens.html to get started.



[Return to Table of Contents](#)

Dive into Pool Savings

Taking a dip in your swimming pool will cost a lot less if you implement an energy- and water-saving action plan today.

Use an efficient heater. New gas-fired pool heaters are more efficient than old ones. But to really slash your consumption, use a heat pump (which uses electricity to capture heat) or a solar heating system that relies on the sun's energy.

Buy a cover. Pool covers are the most effective ways to reduce pool-heating costs, according to the U.S. Department of Energy. Plus, they help keep your pool clean and conserve water and chemicals by slowing evaporation. Bubble (or solar) covers are low-cost options. Vinyl and insulated vinyl covers are more durable.

Pick the right pool temp. If you won't use your pool for several days, turn down the heater to save energy and money. Even during prime pool time, reducing water temperature by a degree makes a big difference.

Decrease your pump size. Using a smaller, high-efficiency pump and running it less may save as much as 75 percent on pumping-related electricity costs, according to a study by the Center for Energy Conservation at Florida Atlantic University.

Set the timer. Run your filter for shorter periods throughout the day rather than run it continuously. And avoid running the pump during peak energy demand hours.

Perform regular maintenance. Consistent cleaning minimizes the likelihood you'll have to drain and refill your pool. Backwash or clean your pool filter as recommended by the manufacturer. And be vigilant about keeping an eye out for leaks.

Save Energy While You're Away

Before you race out the door for your summer vacation, prepare your home with these energy- and money-saving moves.

SET A TIMER.

Talk about a catch-22: Leaving lights on while you're away could protect your home from burglars, yet it robs you of energy. Discourage potential prowlers by programming timers so two or three lights come on in different rooms at night and shut off during the day. Outside, protect your home with motion-sensor landscape lights.

GET UNPLUGGED.

Your appliances deserve a vacation too—and simply turning them off doesn't stop them from guzzling energy. To lower your energy bill while you're away, unplug your TV, computer, battery chargers, and anything else that doesn't need to be left on. Taking an extended trip? Consider emptying your fridge and turning it off—you may save up to \$15 if you're gone for one month. (Prop open the door to avoid coming home to an icky stench.)

TURN THE DIAL.

Raise your thermostat to 85 degrees—for every degree you raise it above 72 degrees, you'll save 1 to 3 percent in cooling costs. If your refrigerator is set at its coolest level, raise the temp to 37–40 degrees, and give your water heater a break by lowering its temperature.