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Green Living Journal

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Welcome to the Green Living Community

At present there are 5 editions being published. The plan is to have a local edition in every green market across the country.

The **Pioneer Valley** edition, published and edited by Stephen Morris, serves southern Vermont, New Hampshire and northern Massachusetts. Contact information:

PVads@GreenLivingJournal.com or call 603.924.0056 and ask for Amelia.

The **Champlain** edition, published and edited by Ellen Shapiro, serves northern Vermont and part of New York. Contact information: Ellen@GreenLivingJournal. com or call 802.373.4006 and ask for Ellen.

The **Jefferson** edition, published and edited by Linda Pinkham, serves southern Oregon and northern California. Contact information: Lindap@GreenLivingJournal. com or call 541.326.1358 and ask for Linda Pinkham.

The **Willamette** edition, also published and edited by Linda Pinkham, serves Eugene, Bend and Salem, Oregon. Contact information: Lindap@GreenLivingJournal.com or call 541.326.1358 and ask for Linda Pinkham.

Our own **Columbia River** edition serves the Portland-Vancouver metro area.

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Publisher's Page

Priming the Pump

By Gary Munkhoff

ne of my all time favorite stories (and a Kingston Trio recording from a long time ago) that seems to come to mind every now and then is the tale of the old prospector lost in the desert and dying of thirst. Just as he is about to give in to his inevitable demise he staggers over one last rise and comes upon an abandoned shack with a hand pump out front. Wired to the pump handle is a tin can containing a note explaining that the pump needs to be primed before it can lift any water from the well below. Hidden under the floor of the cabin is a jar with just enough water to prime the pump. Once primed, the pump will deliver water aplenty for drinking, washing and for refilling the jar for the next lost and desperate soul. The note warns that if any of the water in the jar is drunk there won't be enough left to prime the pump so have faith, pour all the water into the pump and trust that more will come. The story ends there and we are left to decide for ourselves whether the prospector will have enough faith in the note writer to prime the pump or will he give in to his overpowering thirst and drink the water thus ending the pump's chances of saving the next wanderer from the harsh desert.

Intriguing as this short tale may be to me, what's it got to do with our *Green Living* editorial? A fair question so lend an ear and I'll tell you about the four somewhat related events that once again brought "Desert Pete" out of a long forgotten corner of my aging cortex.

We're heading west on I-84 through the gorge when we pass three big semi's going east hauling those monstrous wind turbine parts headed to a wind farm somewhere out where the wind blows even more than it does in East County. Now this has happened to us quite a few times over the last few years, but this time for some reason curiosity stirs. This time it dawns on me that there has to be an awful lot of those pieces and parts traveling east for us to see them as often as we have and over that length of time.

Next, we are on our way to the SolWest Fair in John Day and along the way we see that not only are there hundreds of these turbines already at work, but there are more huge farms under construction. So now its internet time and what is coming is almost unbelievable. There is a Shepherd's Flat Wind Farm planned for Gilliam and Morrow counties which is billed as the largest in the world. This could be the start of something big for Oregon.

Then one evening T. Boone Pickens appears on my TV with his plan to replace natural gas fueled electric generating plants with wind turbines and then use the natural gas to fuel our cars. Not too long after that Al Gore presents his plan to shift all of our country's electric generation to wind, solar and geothermal power in 10 years. Pie in the sky rhetoric? Maybe not.

And finally there are a bunch of internet sources stating that Mercedes Benz will eliminate all petroleum fueled vehicles from its line up by 2015. Go ahead, do a Google search for "Mercedes Benz goal 2015" and see for

yourself. More groundless rhetoric? Again, maybe not.

Folks there is serious money, technical knowhow, and hard work being invested not just in north central Oregon but all over the world by "prospectors" that believe that plentiful, clean, renewable energy really does exist. They are willing to pour a hefty chunk of their resources gained from a petroleum fueled economy into the "pump" of clean energy.

But wait there is more and it only gets more exciting. We don't have to leave this quest for clean energy to the big guys or to our snail paced government. Each one of us can start priming the pump right now with as much zeal as suits us personally. Take one of the many upcoming home tours or do a *Google* search for net zero energy homes, change your grasp of reality and expand your dreams. For the first time since Americans rode around in horse drawn buggies and heated their homes and cooked their food with wood, we each have the incredible opportunity to produce and control the power we need to enjoy a comfortable, 21st century life style. Just because the century old petroleum monopoly rears its ugly head with high prices and unacceptable pollution doesn't mean that the sky is falling on us. We have options. Go ahead and prime the pump.

Thanks to reader Wayne Cordrey for pointing out that the Gridcore product mentioned in the article, **Making Houses Out of Trash**, by Carole Douglas is no longer available and that the company that made it is out of business. We apologize for any confusion or inconvenience.







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Editor-In-Chief's Page

Land of the Free?

by: Stephen Morris

ow can the best things in life be free, when there is no such thing as a free lunch?

I went to New York City recently and inevitably fell into the "I can't believe how much it costs" game. A bottle of water for \$6 at intermission at a Broadway show where the best tickets can top \$300 ... \$39.50 to park your car for an hour ... \$550 for an 8 ounce Kobe steak dinner at a restaurant where it costs \$150 to cancel a reservation ... \$9.75 for a beer at the ballpark.

So, I went on financial strike and decided I would only do things in New York that were free. Luckily, my son works at a company that has a benefit of free museum vouchers, so we started at the Frick Museum. We were blessed with a great day. From the Frick we walked downtown through Central Park. As we walked past the zoo, we were treated to a show of trickster dolphins. Granted, it was at some distance, but it was delightful to see them frolicking against the backdrop of the Manhattan skyline.

We did our share of people gawking and rubber-necking, continuing down to the New York Public Library where there was a fabulous display of maps of the ancient world, for free.

We couldn't figure out how to eat and drink for free, but our friends at the Slow Food organization told us that eating well and eating exotically is entirely possible in the Big Apple. We sampled bialys (like bagels without holes), hand-cured pickles, knishes, and dim sum and spent about the same as that beer at the ballpark.

On we walked, putting Chinatown, Little Italy, Soho, and Ground Zero behind us, finally boarding the Staten Island Ferry for a look at old gal Liberty. The ferry used to cost a nickel, but now it's free.

It was a spectacular day of sightseeing, exercise, conversation, and culture. By day's end my feet were a little sore, but at least I was starting to like New York again. Do you really get what you pay for? Sometimes the inverse is closer to the truth.

Green Living is a "free" publication for "friends of the environment." It says so right on the cover. More accurately, it is a gift, from the community that supports our values, making it possible to bring you our editorial content (and their ads). Is it really free? Not really. The printer is paid, as is the designer, the ad salesperson, and even the publisher (hopefully) are all paid. But it is free to the reader, and therein lies the beauty of the business model.

Occasionally, we're asked if it wouldn't be more ecologically sensitive of us to be entirely electrons, a webbased publication. In a word the answer is "Heck no!" There is an ecological side to electrons, but to go virtual would be at the expense of our strongest asset, our ser-

vice to the local community that supports us financially. The Internet is democratic to a fault. It is as accessible to a casual surfer in Bangladesh as to the person next door. Not so with our tangible, recyclable paper edition. Here are some of the strengths of our physical package (i.e. the thing you are holding in your hands):

- 1. Our footprint is small. We are printed on unbleached, unchlorinated, recycled newsprint manufactured in Oregon City. This is an entirely low-tech process. No virgin forests are being cut for this paper. Our "mines" are the local paper recycling facilities. Moreover, printers have learned how to get improved quality using entirely non-toxic vegetable-based inks. Want to use *Green Living* as mulch or throw it into the compost? Go ahead. No need for even a twinge of conscience.
- 2. We recycle ideas. We are overwhelmed with media. You can't even begin to watch the cable stations or monitor the websites available to you. The blogosphere? Not if you want a life. We find material that stands up to the scrutiny (and formality) of print publication, and we give it a new life. Many of our articles have appeared elsewhere, but they are far from over-exposed. Even after your paper *Green Living* has returned to the soil, you will find many of our articles archived on our website for future reference.
- 3. Our eclectic group of advertisers is united by a single characteristic—they are "friends of the environment" and they want to do business with other "friends." These organizations may not always use the jargon of the socially responsible world, but they are proof that business goes beyond the bottom line.
- 4. Our audience self-selects. Don't ask us to define a "friend of the environment." Is it someone who lives off-the-grid in a straw bale house, or someone whose passion is animal tracking, or an activist who puts it on the line to oppose nuclear energy? You tell us. If you pick up *Green Living* and read it with interest, you qualify, and we don't care about race, creed, color, sex, age, or even species! In the localities where we are published we deliver the largest group of "friends" of any media.
- 5. Did we mention that we are FREE? Let us mention it again. *Green Living* is a gift to you from the businesses and organizations that define themselves "friends of the environment."

Founder of *Green Living*, Marshall Glickman, once described the enterprise as a "light ship" that would be hard to sink. The longer I have been associated with this venture, the more I have come to appreciate his vision. From its humble origins to its humble present, *Green Living* is now (we think) the oldest continually published and largest circulation magazine published for "friends of the environment" in the country. As new local publishers join us in this venture our "light ship" is becoming a "light fleet."

Nature

Noting When Plants Bloom Documents Warming

By Ron Sullivan and Joe Eaton

By being observant of your natural surroundings you too can be a Citizen Scientist- GM

You may be one of those gardeners who note the first flowering dates every spring, maybe on a spreadsheet. Or you may just have a vague feeling that your plants are leafing out and blooming a little earlier each year. In either case, Project BudBurst would like to hear from you.

Project BudBurst, operated by the University Corporation for Atmospheric Research, is an exercise in citizen science, begun Feb. 15. Volunteers are asked to report leaf-out and flowering dates to a national online database (see Resources) for a list of 60 species, including ornamentals, food crops, native trees and wildflowers, weeds and allergenic plants, all with broad geographic ranges. You can add your own favorites, too.

Despite a late (April 15) start for last year's pilot effort, several thousand observers took part. Project coordinator Sandra Henderson is hoping for many more this year: "We're interested in getting people out there observing their environment, in their backyard, the schoolyard or on the way to work."

This is about phenology, the study of the timing of recurring natural events (from the Greek phainomai, "to appear"). Last year we reported on Arthur Shapiro, the UC Davis professor who has a standing offer of a pitcher of beer for the first live cabbage white butterfly collected in Yolo, Sacramento or Solano counties. (As he

did in 2007, Shapiro tends to win his own contest.) His butterfly tracking is a small part of a global network that monitors buds and blooms, the arrivals and departures of migratory birds, the first frog choruses, the date marmots emerge from hibernation and much

People have been keeping phenological records for centuries without calling them that. The oldest continuous data set for any natural event (or phenophase) records the blooming of cherry trees in Japan, going back six centuries. Phenology also has roots

in northern Europe. Biologist Camille Parmesan of the University of Texas writes: "Peoples of Great Britain, the Netherlands, Sweden, and Finland have been keen on (some might say even obsessed with) recording the first signs of spring - the first leaf on an oak, the first peacock butterfly seen flying, the first crocus in bloom - as a mark that the long, dark winter is finally over."

If there's a father of phenology, it's Robert Marsham, who began recording "Indications of Spring" on

his Norfolk estate in 1736. (His correspondent Gilbert White, author of "The Natural History and Antiquities of Selborne," kept similar records but published only the earliest and latest dates.) Marsham, an arboricultural pioneer, tracked the flowering dates of four plants and leafing dates of 13 trees, as well as the seasonal activities of birds, butterflies, frogs and toads - in all, 27 "Indications." After his death in 1797, the Marsham family kept the tradition until 1958.

Other gardeners and naturalists - conservationist Aldo Leopold, for one - maintained their own phenological records. In 1957 the International Phenology Garden Network was established in Europe, each garden planted with cloned specimens of 16 tree and shrub species. There are now 49 such gardens, from Ireland to Macedonia and from Finland to Portugal. In the United States, the USA-National Phenological Network has been monitoring blooming dates for three indicators - the lilac cultivar 'Red Rothomagensis' and two honeysuckles - for more than 50 years. Clones eliminate genetic variation as a complicating factor. USA-NPN also has an observation program for native species in 11 ecoregions: California's include red-flowering currant, quaking aspen and ocotillo.

There's a current point to all this record-keeping: plants and animals are directly affected by climate change. Temperature influences bud and bloom dates, and increased carbon dioxide in the atmosphere has been shown to cause earlier flowering. Study after study indicates a trend for these events to occur earlier in the year. Those Japanese cherries now bloom four days earlier

Project Budburst Resources

Project Budburst: www.windows.ucar.edu/citizen_science/budburst. This site provides all you need to get started, including downloadable identification guides and teaching materials.

USA National Phenology Network: www.uwm.edu/Dept/Geography/npn. **Phenology Web Links:** www.attra.org/attra-pub/phenology.html. *Sites for flowering plants, birds and butterflies.*

Robert Marsham Tricentenary site: www.robertmarsham.co.uk. *Life and legacy of a phenological pioneer.*

Joe Eaton and Ron Sullivan *are freelance nature and garden writers in Berkeley.* E-mail them at: home@sfchronicle.com

than during the 1950s.

The Marsham family's oaks showed a trend toward earlier leafing out between 1850 and 1950. Animals tell similar stories: Egg-laying dates for North American tree swallows arrived earlier by an average of nine days over a 32-year period. Butterflies in the Central Valley are emerging from their chrysalides 24 days earlier than they did three decades ago.

Put it all together and you have what Parmesan and Wesleyan University economist Gary Yohe call "a glob-

ally coherent fingerprint of climate change impacts across natural systems." In a landmark article published in Nature in 2003, Parmesan and Yohe analyzed phenological records for 172 species of plants, birds, butterflies and amphibians, finding an average shift toward earlier spring timing of 2.3 days per decade. Eighty-four percent of shifts in timing for another set of 677 species were in the direction expected from climate change.

Although the overall picture seems clear, more data never hurts. By plugging in to Project BudBurst, amateur gardeners and wildflower observers can help flesh out our knowledge of how plants are responding to a warmer world.

This article appeared on page G - 2 of the San Francisco Chronicle Wednesday February 27, 2008. Reprinted with permission.

Local Notes

Renewable Energy Technology Program at Columbia Gorge Community College

by Dr. Susan J. Wolff, Chief Academic Officer

Eastern Oregon and Washington are now home to several wind generation farms. In 2006 a needs assessment was conducted to determine the number of jobs that would be needed to install and maintain the wind turbines in a 50-mile radius of The Dalles, Oregon. The results of the assessment indicated that 360 technicians would be needed by the year 2011. The Mid-Columbia Council of Governments and Columbia Gorge Community College (CGCC) worked together with industry on the assessment and subsequent development of a workforce training program that offers a one-year certificate or two-year AAS degree in Renewable Energy Technology (RET). By 2007 the projected number of technicians needed jumped to 400 and that number has now grown to between 500 and 600 jobs.

The RET program at Columbia Gorge Community College was the third program in the United States aimed at preparing employees for the wind energy industry. It is still the only wind energy training program on the west coast and is the only one Congressionally recognized. Several more colleges across the country are now developing similar programs. Eighteen of those institutions participated in a Summer Wind Institute held at CGCC to work with industry and the American Wind Energy Association to identify a common skill set in safety, electronics, and mechanical skills that college graduates would possess upon graduation.

The college received a \$1.67 Million grant from the U. S. Department of Labor in March 2008 to expand its program. The college has graduated 48 students, has admit-

ted 36 into its fall cohort for 2008 and will be admitting another 36 into its new spring cohort that begins 2009. Industry donations of staff time, cash, equipment, site visits, student scholarships, and paid internships exceed \$400,000. The Oregon Department of Community Colleges and Workforce Development granted \$395,000 to the college to build a large laboratory that will accommodate large turbine components that have been donated for student learning.

What has driven the development of this program is the opportunity to create high tech, high wage jobs for rural areas that have lost high wage jobs with the closing of aluminum plants, reduction in forest product jobs, and where cattle and wheat prices fluctuate each year. Starting wages for wind technicians range from \$18 to \$22 per hour, those who graduate with a two-year degree will soon be making between \$24 and \$36, and career opportunities and advancement abound. Families who have chosen to live in the rural regions of states want to stay. The wind farms through their leases with the land owners and the technician jobs are bringing economic vitality to these regions. Other renewable energy sources, such as solar, geo-thermal, bio-mass, and others will continue to not only have a positive impact for energy production but also as an economic stimulus.

More information about the RET program at Columbia Gorge Community College may be found at: www.cgcc. cc.or.us/Academics/RenewableEnergyTechnology.cfm or by calling 541-506-6028.



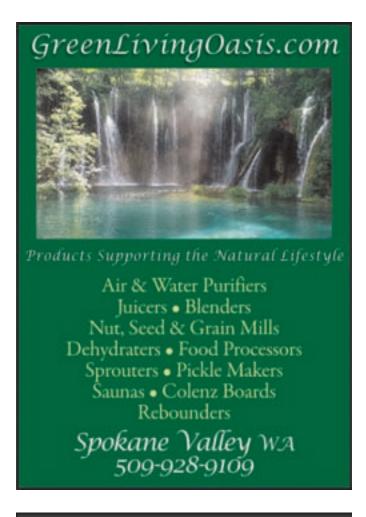
SolWest Fair 2008

We enjoy traveling to John Day for this annual event held the last weekend of July. This may not be the biggest sustainable living and renewable energy show held in Oregon, but what it lacks in size it more than makes up with enthusiasm, friendliness, and being able to learn from the experts. Put this on your calendar for next year.

I sat in on several of the many free lectures and one of them had some great tips on how to reduce your carbon footprint. Given by John Patterson of Mr. Sun Solar, 6125 NE Portland Hwy, Portland, they are certainly worth passing along. Note that he starts with the simple and inexpensive steps and then progresses to more technical and costly projects.- GM

- **1. Install a solar powered attic fan.** This reduces your heat buildup in the summer and reduces moisture in the winter.
- 2. Install 85% shade cloth over your south facing windows in the summer. He also made the point that you can't have too many windows on the south side of your house. Seems the solar gain in energy from the sun shining through the glass is much greater than the ability of insulation in a windowless wall to conserve energy.
- 3. Put up an old fashion outdoor clothes line.
- 4. Cook with a pressure cooker. The idea here is that because the steam is under pressure it is a higher temperature than normal boiling water so you can turn off your stove and the food will continue to cook using the residual heat.
- **5. Track down and eliminate phantom loads.** Included here are doorbells and TV sets.
- 6. Install tubular or light gathering skylights.
- **7. Install a solar hot water heater.** On the average 25% of the total energy used in your home is needed to heat your water,
- **8. Install a photovoltaic system connected to the grid.** This is the most technical and expensive tip, but there several tax credits and rebates available that greatly reduce the cost.





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Eco-Friendly Cleaning Products Available Locally

Here's welcome news for those of you interested in using environmentally safe cleaning products in your home or business. -GM

Cleaning Green located at 12568 SW Main Street in Tigard, is now open for business Monday through Saturday 10 AM to 5 PM.

Cleaning Green is a specialty store that provides cutting edge green cleaning products for your home and office. Their goal is to carry eco-friendly products that are biodegradable, don't contain VOC'S (volatile organic compounds) and can be recycled or composted. They hand select all products based on how sustainable the product and its manufacturer are and they are proud to offer some of the best and most innovative brands on the market today.

According to owners John and Shelly West, "We feature such brands as Bio-Kleen, Mrs. Meyers, Trellis Earth, SCA Paper, Bay West, and Spartan. Some of the more unique items we carry are toothbrushes and razors made from recycled yogurt containers, trash bags made from cornstarch, soy candles, doggie bio bags, and waterless car wash, Our products are gentle on our environment, your children, and your pets."

"There are so many products out there that it is hard for the average consumer to know what to buy or where to start. We have taken some of the guess work out of the process of going green and hope to become a valuable resource to the community."

For more information or to shop on line go to: www. cleaninggreen.com

Oregon Sustainable Industry Network Travels to West Coast

Green 'PDX Lounge' collaborative blends sustainable business, networking with a twist of fun

Portland, OR - Now in its third year, PDX Lounge is sponsoring a large networking event at the West Coast Green Conference in San Jose, California, creating opportunities for Oregon's sustainable industries to connect with green building leaders to reinvent the future.



Produced in collaboration with conference organizers, the PDX Lounge Pub Crawl will take place on Friday, September 26. Attendees are invited to participate immediately following that day's events.

Oregon's national and international sustainability leadership directly results from more than a generation of its citizens invested in early sustainability leadership across business, education, non-profit and government. The future of Oregon's economy will be built upon this early leadership.

The City of Portland's Office of Sustainable Development conceived of PDX Lounge as both a physical space and a virtual community that brings the city's business, academic, nonprofit and government communities together around this vision to elevate Oregon's current leadership position and support its growth.

This approach also creates a cooperative and cost-efficient marketing framework that touts Oregon as a place that's not just eco-friendly, but actively encourages innovation and entrepreneurship around green industries.

PDX Lounge debuted in 2006 in Denver, near the USGBC Greenbuild Conference with 32 partner companies. In November 2007, the number of partners nearly doubled at USBGC Greenbuild Chicago, where the lounge was comprised of a 20,000 square foot installation and multimedia experience showcasing critical building blocks for a sustainable economy.

This year at West Coast Green, PDX Lounge is all about networking. Attendees will be able to unwind from the day's sessions at the PDX Lounge Pub Crawl, which features four locations to maximize opportunities for idea exchange and personal connection.

"As a new sponsor of PDX Lounge, we're excited to bring our expertise in restaurant design to the table," said Julia Wood, CEO and principal architect of Litmus Design + Architecture. "Being a part of this community gives us an unmatched opportunity to collaboratively strengthen Portland's sustainability leadership and build new business partnerships."

ABOUT PDX LOUNGE

PDX Lounge is a highly collaborative intersection of local government, businesses and non-profit organizations transforming Oregon's legacy of environmental stewardship into a profitable new business model. Fundraising



eMorts are underway to establish a permanent home for PDX Lounge in Portland, Oregon. Call 503-823-0231 for a current list of PDX Lounge partners. On the web at www. pdxlounge.com

New Counter Top Product from Klip BioTechnologies, LLC, Puyallup, WA

Keeping up with all of the new developments in green building products can be quite a struggle. The folks at Green Source are excited about EcoTop and wanted to share information on this new, stylish, and green, surfacing product -GM

EcoTop is the new countertop product from the award-winning green product creator, Joel Klippert, founder of PaperStone. In 2007 Joel decided to leave the PaperStone team to pursue an even greener product, EcoTop, which because of the bamboo fiber can be bonded with water based resins. The longer bamboo fibers also make the product highly scratch and stain resistant.

EcoTop is comprised of 50% FSC certified recycled wood fiber, and 50% bamboo with a 100% water base resin which is petroleum free and VOC free. EcoTop is UV stable, and will not fade or change color with exposure to sunlight. It is not necessary to seal EcoTop, but the company does offer an all natural organic soy oil, palm oil, & carnubacarnauba wax finish. EcoTop maintains its color and density throughout so any scratches can be sanded out. It does not harbor bacteria and has a water absorp-

tion rate of less than 1%.

Available in slabs that are 3/4" or 1" thick, 30" or 60" widths, and 12' lengths, EcoTop can be installed with basic wood working tools. Klippert states that EcoTop is the only solid surface product that a DIYer can install while still maintaining the 10 year warranty.

This is a very versatile product whose applications range from countertops and tabletops to floors and walls anywhere in the house. It is presently available in six colors or it can be customized to fit specific color needs. More colors are expected within the next year.

For more information please contact Keenan van de Boogaard at green source eco home + garden, 4530 SE Hawthorne Blvd., Portland, OR 97215, 503-239-2276 www.greensourcepdx.com

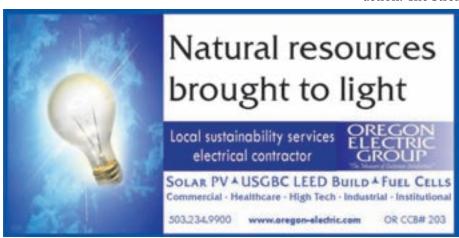
Stream Stewards Program is Accepting Applications!

Do you want to learn more about the environment? Do you want to be more involved in your community? The Stream Stewards are community members interested in learning about our environment and how they can promote community stewardship. The Stewards complete hands-on classes, apply their new skills and enjoy social gatherings.

This is a learn-n-serve program through Clark Public Utilities' StreamTeam. It is a free course for Clark County residents who are committed to putting knowledge into action. The Stream Stewards program is a professional-

level workshop series that provides lecture and hands-on experience with local hydrology, geology, botany, wildlife, water quality and native plant restoration. No experience necessary. All workshops occur on Saturdays, 8:30 a.m. to 3:30 p.m. in the fall. There is a \$10 fee to cover administrative costs.

For more information contact Lisa Beranek at (360) 992-8585, StreamTeam@clarkpud.com, or www. StreamTeam.net



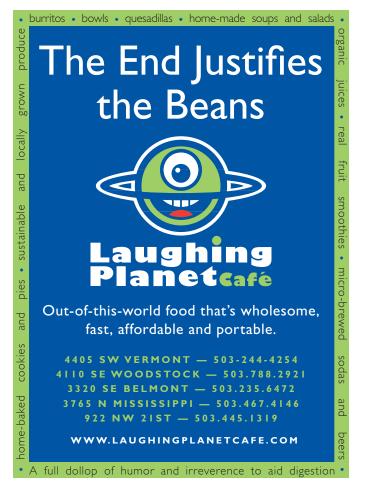
Pets

7 Tips to Reduce Your Pet's Carbon Paw Print

by Earth Paw

Are you a pet lover and an earth lover? Many ecofriendly consumers work hard to reduce their carbon footprint, but they often overlook the problem of the "carbon paw print" of their pets. To minimize our pets' environmental impact, here are 7 simple steps that you can take to help your pets be more environmentally friendly:

- 1. Clean up after your pet regularly. The accumulation of pet waste is not only a health hazard, but it has a real environmental impact, especially if storm drains carry it into waterways. The Environmental Protection Agency estimates that two or three days worth of droppings from a population of about 100 dogs would contribute enough bacteria to temporarily close a bay, and all watershed areas within 20 miles of it, to swimming and shell fishing.
- 2. Use biodegradable bags to dispose of pet waste. Every pet owner should be using biodegradable waste bags. A recent study in San Francisco determined that pet waste makes up 3.8% of residential landfills. Much of this





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landfill problem is the result of pet waste that is disposed of in regular plastic bags. Using biodegradable bags allows the pet waste to go back to the earth as nature intended.

- **3. Recycle your pet waste.** Consider using an in-ground pet waste septic system. These septic systems are a sanitary and environmentally friendly alternative for pet waste disposal.
- 4. For cat lovers, consider using kitty litter made from recycled or organic materials.

 Traditional clay-based kitty litters contribute significantly to landfills and do not biodegrade.

 Greener choices are available, including recycled newspaper or flushable kitty litter made from organic materials, such as corn or wheat.
- **5. Purchase all-natural pet food products.** Look for the many healthy and eco-friendly alternatives for pet foods. Select pet foods that do not contain rendered meat or animal byproducts, and avoid pet foods made from protein sources that may contain growth hormones or antibiotics.
- 6. Use eco-friendly pet grooming products.

 Avoid products that contain phosphates, sulfates and other chemicals that can be harmful to the environment. Earthbath pet shampoos do not contain these chemicals. If you purchase pet shampoos or flea and tick control products, read the label and select products that are made from natural earth-friendly ingredients. Some chemicals can be unhealthy for your pet and can leave a residual "toxic trail" wherever they go. If you send your pet to the groomer, ask the groomer if they have a choice of earth-friendly products.
- 7. Buy earth-friendly pet toys and other products. When you buy toys, pet beds or other products for your pet, look for items that are made from all-natural materials.

Remember that you have a choice in the products and services that you buy for your pet. Choosing an earth-friendly pet product or service can make a real impact on your pet's carbon paw print!

Source: www.earthpaw.org/blog/ Thank you to Evan Wisell at Pet Food Warehouse, pfwvt.com, for sharing this with us.

National Notes

Want to Curb Global Warming? Start Recycling and Composting?

Written by Shirley Siluk Gregory

Looking for ways beyond changing light bulbs and taking the train to help reduce your carbon footprint? Turns out we all could make a big difference in greenhouse gas emissions by not throwing out so much trash and composting our food waste.

That's the message from "Stop Trashing the Climate," a report prepared by The Institute for Local Self-Reliance, the Global Alliance for Incinerator Alternatives (GAIA) and Eco-Cycle, a non-profit recycler. The study finds that waste prevention and increased recycling and composting could reduce as many greenhouse gas emissions as are produced by 21 percent of the U.S.'s 417 coal-fired power plants.

Why? There are two basic reasons. One, by trashing stuff instead of reusing or repairing it, we create the demand for new resources ... and extracting, manufacturing and transporting those resources generates carbon dioxide. And, two, by tossing biodegradable materials into landfills instead of composting them, we're creating emissions of methane, a greenhouse gas that is shorterlived but 72 times more powerful than carbon dioxide.

"Recycling is as important for climate stability as improving vehicle fuel efficiency, retrofitting lighting, planting trees and protecting forests," said Brenda Platt, co-director of the Institute for Local Self-Reliance and lead author of the "Stop Trashing the Climate" report. "By avoiding landfill methane emissions, composting in particular is a vital tactic in the battle to stop Arctic ice melting. Biodegradable materials are a liability when buried and burned but an asset when composted."

The report asserts that "A zero waste approach based on preventing waste and expanding reuse, recycling and composting is one of the fastest, cheapest, and most effective strategies to protect the climate." It also notes that,



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per megawatt-hour, a trash incinerator produces more carbon dioxide emissions that a coal-fired power plant. Incinerators also waste three to five times as much energy as recycling helps to conserve.

"A zero waste approach is not only good news for climate stability, it's also good news for America's businesses and economy," said Eric Lombardi, a report co-author and director of the Boulder, Colorado-based Eco-Cycle.

"Stop Trashing the Climate" urges a local and national 20-year goal of zero waste. We can get there, the authors argue, by not subsidizing landfills and incinerators, putting an end to waste incineration, composting biodegradable materials and expanding the nationwide infrastructure for reuse, recycling and composting.



National Tour of Green Building Highlight Energy Awareness Month

By Stephen Morris

My personal involvement with the National Tour of Solar/Green Homes dates back to the early 1990s when, as a marketing consultant for Real Goods Trading Corporation (then of Ukiah, California, now Hopland) we came up with the idea of a National O⊠-the-Grid Day to encourage people to spend 24 hours o⊠ the power grid.

The event created a lot of stir, but without much focus. There were numerous requests from local media to see O⊠-the-Grid Day in action, but the event was so de-centralized that we didn't know how or where to direct them. The next year we got smarter and made the event a national tour of o⊠-the-grid homes, with a national registry of folks willing to open their homes to the public for a day each fall.

The event grew in popularity, and it soon became apparent that it was not appropriate for a private company to "own" the event. Administration of The Tour was turned over to the American Solar Energy Society (ASES) where it has continued to grow and \(\text{Sourish}. \) They, in turn, work closely with regional organizations such as the Northeast Sustainable Energy Association (NESEA) to customize the events for the area. Dates, times, and conditions vary, so it is important to get the most up-to-date information from the ases.org website.

Last year more than 115,000 attendees visited some 5,000 buildings in 2,900 participating communities. The Tour is a featured part of National Energy Awareness Month.

There have been many changes since O\(\text{\text{\text{N}}}\)-the-Grid Day. There has been an increasing focus on energy-saving techniques and sustainability through building design, energy e\(\text{\text{\text{\text{C}}}}\) cient appliances, and use of green materials during remodeling. What counts as "green" in Chicago is very d\(\text{\text{\text{\text{\text{\text{C}}}}}\)entry that is "green" in Florida.

New Fuel-Cost Calculator Simplifies Comparisons

From Environmental Building News, http://www.buildinggreen.com/calc/fuel_cost.cfm

One would think comparing the costs of different heating fuels and electric heat sources would be pretty easy. That's not the case. For starters, while we purchase some fuels by the energy content of the fuel, we purchase others by volume or weight—and we use different units for different fuels. Heating oil, propane, and kerosene are sold by the gallon, natural gas by the hundred cubic feet (ccf) or therm (100,000 Btus), firewood by the cord, wood pellets and coal by the ton, and electricity by the kilowatt-hour (kWh).

With rapidly rising energy prices around the country, something unusual has happened. Some heating fuels that used to be quite affordable, such as heating oil, have risen in price dramatically, making competing energy sources such as electricity relatively less expensive. In parts of the Northeast and Upper Midwest, even the most expensive form of electric-resistance baseboard heat is now less expensive than fuel oil.

To help consumers objectively compare fuel costs, BuildingGreen has just launched a sophisticated, yet very simple, online fuel-cost-comparison calculator. The new fuel-cost comparison tool is free on BuildingGreen.com along with a primer on comparing fuel costs (visit www. BuildingGreen.com/calc/fuel_cost.cfm).



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BuildingGreen's online fuel-cost calculator considers the heat content of each fuel, the efficiency of combustion by the heating equipment, and the efficiency of distribution. With furnaces and forced-air distribution, there are often very significant distribution losses that raise the cost per million Btus of delivered heat. The BuildingGreen calculator provides default (average) efficiencies but allows users to enter different values if they are known.





High Road to Greenovation

by David Johnston

When Wanda Urbanska, host of the public television series Simple Living with Wanda Urbanska, called to see if I could help "greenovate" her home, I said, "Sure." Urbanska had just purchased 1956 brick ranch house in Mount Airy, North Carolina. Recently remodeled, the home had a new kitchen, new hardware floors and a fresh coat of paint. An east-facing sunroom had low-quality windows, which lets in heat during summer and cold in winter. Urbanska wanted to use her home's retrofit as an example of how to make a conventional house healthy. She was committed to buying from local suppliers. Natural Home editor-in-chief Robyn Griggs Lawrence ioined me at Urbanska's house to help determine steps in greening the home. The energy conservation retrofit was Priority No.1. Lawrence focused on eco-decorating and finishes. Once her eco-remodel was complete, Urbanska furnished her home with finds from local resale stores. She also added Magnolia Lane's hemp window treatments in the living and dining areas and hemp bedding in the bedrooms. "My house is transformed," she said. "I now live in a green home, a healing environment. I've never been happier with a house."

PRIORITY 1: Improve Energy Efficiency

PROBLEMS: The biggest problem was an attic stairway that provided a perfect thermal chimney to draft heat through the uninsulated rafters and attic vents. Also, poorly made, double-glazed windows had about 1₺ inch of space between the glass panes; glass should have a 1\(\mathbb{Z}\)inch air space to reduce heat loss.

SOLUTIONS: In the attic, we sprayed closed-cell polyurethane insulation on the rafters and sheathing to keep heat from pouring out through the roof. Insulating the rafters also helped mitigate heat loss through recessed can lights built into the ceiling. These recessed cans allow heat to rise through the ceiling in winter and pull heat from the attic into the living space in summer. Urbanska also installed Energy Star, double-pane, low-E windows manufactured by Norandex. COST: 34 new windows: \$10,000 installed. Attic insulation: \$10,000 installed.

PRIORITY 2: Revamp the Bathroom

PROBLEMS: The main bathroom's pink décor, dated cabinet and awkward configuration gave away the home's age. Urbanska said it was always cold.

SOLUTIONS: We completely renovated the bathroom, bringing in a Vortens dual-flush, low-flow toilet and low-flow showerheads. We also installed a hardwood Provence vanity with a distressed finish and a granite countertop (mined locally in North Carolina), crafted by Forms and Fixtures in nearby Greensboro. We replaced the vinyl flooring with natural stone tiles, which surround the original porcelain bathtub.

We insulated the exterior wall and the wall between the bathroom and the kitchen with NCFI spray foam. We insulated the floor under the bathrooms and bedrooms

with Johns Manville formaldehyde-free fiberglass.

COST: Vortens dual-flush, low-flow toilet: \$675. Low-flow showerhead: \$75. Forms & Fixtures vanity: \$3,090. Tile floor and tub surround: \$2,100. Interior wall insulation: \$600. Under-floor insulation: \$300. Panasonic Whisper-Quiet bath fan: \$208. Labor: \$3,600.

PRIORITY 3: Renovate the Dated Kitchen

PROBLEMS: The previous kitchen remodel was adequate but not beautiful, with appliances that weren't energy-efficient. It was topped off by popcorn ceiling that Lawrence urged us to remove. Making a home more beautiful and livable—and therefore longer lasting—is one of the greenest things we can do.

SOLUTIONS: Because granite can be obtained just outside of Mount Airy, replacing the laminate countertop and backsplash with the North Carolina Granite Corporation's signature "salt-and-pepper" granite was a no-brainer. North Carolina Granite uses no chemicals and repurposes every scrap, resulting in a zero-waste operation.

Following Lawrence's recommendation, we added a recycling center to the built-in pantry and installed Energy Star Kitchen Aid appliances. Urbanska added a personal touch by repurposing her mother's 1960s novelty skirt into kitchen curtains.

COST: Granite countertops: \$4,000. Smooth ceiling: \$234. Recycling center: \$55. Energy Star KitchenAid appliances: \$5,946. Curtains: \$30. Lights: \$288. Labor: \$4,365.

PRIORITY 4: Relocate the Laundry Room

PROBLEMS: The laundry room was in the basement, and the historic washer and dryer had to go. The bigger issue was relocating the laundry area upstairs to a more convenient location. This was a challenge, given the first floor's small footprint.

In the basement, we also discovered a relic: an old oilfired furnace that looked like a bank vault.

SOLUTIONS: Replace the washer-dryer with Whirlpool's Energy Star Duet combo front-loading steam washer and sensor dryer. Creative input from Urbanska's friend Sarah Susanka, author of The Not So Big House book series, resulted in a built-in room divider between the sunroom and the study to house the appliances and provide much-needed floor-to-ceiling bookshelves in the study. Urbanska also added a free-standing rack dryer inside and a clothesline outdoors.

We replaced the heating and cooling system with a Trane high-efficiency heat pump, which should save Urbanska 30 percent on her utility bills. A heat pump is the perfect solution for Mount Airy's climate with its high cooling necessities and mild winters.

COST: Whirlpool Duet washer and dryer with pedestals and tower: \$3,485. Room divider: \$350. Built-in bookshelves in study: \$801. High-efficiency Trane heat pump: \$8,780. Labor: \$4,189.

PRIORITY 5: Improve Indoor Air Quality

PROBLEMS: Painting is the most common home improvement of all, and doing it with nontoxic paint is the simplest way to assure good indoor air quality. Paint can release volatile organic compounds (VOCs) into the air for several years.

Though most of the house had hardwood floors, the bedrooms were carpeted. Carpet acts like a sponge, absorbing dust and other particulates as well as gases such as formal-dehyde. When the temperature and humidity rise, these gases can be released back into the home's air.

SOLUTIONS: Urbanska selected Ace Hardware's Ace Sensations low-VOC paint. In keeping with her buy-local commitment, we chose Tennessee oak flooring with a cherry finish for the bedrooms. Urbanska installed Hunter Low Profile exterior-grade ceiling fans in all three bedrooms and the living room and replaced the existing one in the sunroom.

COST: Ace Hardware low-VOC paint: \$250. Tennessee oak flooring: \$2,000. Ceiling fans: \$588. Labor: \$5,020.

Excerpted from Natural Home, a national magazine that provides practical ideas, inspiring examples and expert opinions about healthy, ecologically sound, beautiful homes. To read more articles from Natural Home magazine, please visit www. NaturalHomeMagazine.com or call 800-340-5846 to subscribe. Copyright 2008 by Ogden Publications Inc.







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Dr. Inna Shimanovsky, DMD

Shannon Quimby's R.E.X. House: How to Reuse Everything by Saving It.

Shannon Quimby, one of the nation's top renew-it experts, attempts the biggest reuse project of her career – infusing 100% of an old dilapidated house into a new construction project

Portland, OR – Shannon Quimby frequently heard her grandmother espouse the benefit of "save it, everything has use." It's a lesson that has shaped Shannon Quimby into one of this country's top renew-it experts. Now, Shannon takes on the biggest re-use (or save it) challenges of her career – recycling an entire old home into a new home construction project. Entitled the R.E.X. House (Re-use Everything experiment) Shannon will attempt to reuse everything from the old house into the new home.

Imagine taking an old, dilapidated house, one with a crumbling foundation, rotting floors, crusty windows, stinking carpet, rusty water heater and old kitchen appliances and attempting to find a use for this disaster. Shannon Quimby is up to the task. Quimby can literally take any old item and make it into something useable for the home or garden. This ability has not gone unnoticed by HGTV, book authors and talk show hosts. Quimby will salvage old light bulbs for a Holiday Wreath, a bowling ball for party centerpiece, door knobs for candle holders, old books for ornate shelving and screen door materials for gift tags – the list goes on and on. This ability to find use for just about anything has led her to one conclusion – "don't dump the junk!"

In the case of the R.E.X. House project – she had no intention of dumping the junk (house); instead she is working with the leaders in the "green" movement to find solutions. The most important find was Green Hammer, Inc. with contractor – Stephen Aiguier. "Green Hammer has the most knowledge and background in green construction techniques, utilizing reclaimed materials and current energy efficiency mandates," noted Quimby.

The Rex House Project is located in the quaint West-moreland neighborhood of Portland, Oregon. Shannon Quimby's REX House project is one of her Q-Renew projects. Recognized as one of the country's top Renew-It experts, Quimby has been an HGTV star, is a published author, and is currently a national speaker for the design/education community and a favorite at home & garden shows around the region.

The area's Top Sustainable Companies Lend an Important Hand. **KEY COMPANIES INVOLVED IN THE R.E.X. HOUSE PROJECT:**

The Re-Building Center's Deconstruction Services. The old Rex Street house had to be taken apart nail by nail and stored. "They lovingly deconstruct a home, neatly organize the materials and nothing is thrown away," noted Quimby. "It's actually more cost effective to deconstruct than demolish a home." The entire former home is now contained in two storage shipping containers (the kind ships use) parked right on the street. When it's time – the material will be used to build the new home. An important note – The Rebuilding Center is a

non-profit organization so a home owner can also donate the deconstructed materials and receive a tax credit – extending the savings.

ProGrass. In order to execute the landscape designs a contractor with extensive knowledge in saving and keeping plants was required. ProGrass, with their background in horticulture, was instrumental in transplanting the 30 foot trees and all the remaining vegetation, moving them and (hopefully) saving them through winter (spring will tell). "We were able to retain part of the neighborhood history," said Quimby. Additionally, the property was surrounded by a thick hedge of non-native laurel bushes – all diseased and dying – the branches were saved and will be used artistically for garden furniture and fencing and the rest is now mulch for landscaping on the property. One of the more interesting and fun landscape features will be a Dog-O-Let (outdoor flushing dog toilet) allowing Quimby to flush away waste from the family pet.

Aspen Siding & Windows: This Northwest leader is one of Oregon's most experienced commercial and residential installers and is providing all the exterior siding installation, siding, painting, window and trim installation. Additionally, they will be installing the chimney.

ecohaus. For more than a decade ecohaus (formerly Environmental Building Supplies) has been on the forefront of solving problems for customers seeking sustainable and responsible ways to choose interior finishes for their homes. Their definition of quality requires them to look at what happens over the entire life of a product. How is it made and by whom? Is it a healthy addition to a home that will give service for years? Is it a product that supports responsible use of resources and helps the economy from which it came? What will happen to it when it is no longer needed? By asking these questions and then discussing goals and budgets with their customers, they can help find the best products for each situation. ecohaus is supplying the interior needs of the R.E.X. House.

Green Hammer, Inc.. Considered one of the top "green" builders in the country – located in Portland, Oregon, Green Hammer is as much innovator as construction company – led by Stephen Aiguier – his team's challenge is to find as much use for the former Rex Street home that has been deconstructed as well as install as much energy efficiency, sustainable practices and infuse sustainable materials into the new construction process.

Sierra Pacific Windows and Doors - Sierra Pacific has joined with other private landowners across North America in voluntarily adopting the standards set by the Sustainable Forestry Initiative (SFI) program. We have developed a one hundred year plan for managing our forests to provide the wood products consumers rely on while maintaining fish and wildlife habitat, soil stability and water quality.

NW Natural. There is no other store like it in Portland. Offering "everything gas" from fireplaces, kitchen appliances, grills, tankless water heaters, and more, the Appliance Center was a great match for the REX House. With its great assortment of home appliances, experiences staff and qualified installers it was a sound choice that

made the selection and installation of kitchen appliances and fireplaces, a smooth process.

Paintegrity. Focused on 100% earth friendly products and service, Paintegrity is committed to a higher standard of health and life. The Paintegrity crew comes into every home environment looking for ways to minimize environmental impact – utilizing low VOC paints and uncompromising service. Paintegrity will be providing all paint contract work for the R.E.X. House Project.

Earth Advantage (Green Building certification provider)

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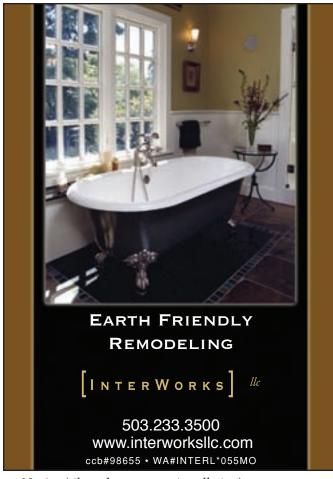
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ADDITIONAL COMPANIES INVOLVED

- Taylor Metal, Inc. (installation and materials of recycled metal roofing)
- Jacobs Heating and Air Conditioning (Carrier HVAC supplier and fullinstallation)
- Standard Supply Company (supplier of faucets, and tubs)
- Abode Design (Kitchen and Bath Designs)
- Demilec (Spray Foam Insulation supplier)
- NW Foam Home (Spray Foam installation)
- Beriault Entertainment Marketing (REX Project marketing)
- Gregg and Ellis Landscape Designs (our landscape designers)
- The Rebuilding Center (deconstruction of original house)
- Prevent Tech NW (Mold and Mildew prevention application, materials and installation)
- Endurawood (kitchen island countertop and entertainment center creation and installation)
- Green Hammer Construction (Made farm table and coffee tables and Project Mentor)
- Puji Sherer (Artist of window art)
- Ann Elsenbach (Metal artist of "the Toast")
- Moulding and Millwork (supplier of interior window and door trim)
- Architects: Laura Migliori and Peter Brevig
- Spitball Media (REX Project website design, video, and maintenance)
- Blue Water Equity (financial advisory for the R.E.X. Project)
- Johnson Creek Rentals (machinery for the foundation process)





- Nu Art (tile and countertop installation)
- Dennis and Company, Inc. (Cabinet maker and installer)
- DRUWWOD (cabinet installation)
- Dave Case (Cement)
- Amber Dawn Design (all signage and marketing materials)
- Cridland Photography (documenting the entire process)
- Yolo Colorhouse (supplying no VOC paint for inside of the home)
- OnQ (electronic supplier)
- S&H Landscape Supplies and Recycling (grinding left over wood and construction materials)
- Woodcrafters Lumber Sales, Inc. (supplier of some interior and exterior finish materials)
- James Ray Arnold (framing and Finish Carpentry)
- Dotzenrod Construction (onsite crushing of former foundation now base gravel for site)



- Lakeside Lumber (Exterior Siding Materials)
- Old Portland Hardware (providing hardware and lighting)
- Black Cat Plumbing (plumbing services)
- LOVEIT (sewer services)
- Earth Advantage (Certification of REX House)
- Advanced Tech Solutions, Inc. (Installation of Low
- Village Green Arborists (built Treehouse)
- Best Overhead Door, LLC (builder and installer of garage door)
- American Roofing Recyclers (recycled our roofing materials)
- Willamette Roofing (Decking sealant installation)
- Kemper Drywall (Supplier and installer of Drywall)
- Fabulous Floors (Floor Installation)
- Full House Electric (Electrician)
- Wild Wood Designs (garden furniture)
- Parr Lumber (framing materials)
- Clifton Metal Works (garden arbors from salvage metal from former house)

Editor's Note: For more information, pictures, and a video on this ambitious project go to:

http://www.shannonquimby.com/rex/

Building

What Is A SIP?

By Brandon Helms

ructural Insulated Panel (SIP) is a general term for a structural building component composed of loadbearing skins (outer layers) continuously bonded to a rigid insulating core. The panels are also referred to as 'sandwich panels', which describes the way they look, and 'stressed skin panels', which describes the way they work.

The most common panel skins are 7/16-inch thick sheets of OSB (oriented strand board), though cement skins and metal (steel or aluminum) are also available. The SIP core is most commonly expanded polystyrene (EPS), although polyurethane, polyisocyanurate,

extruded polystyrene (XPS), or wheat straw cores are also available.

Introduction to SIPs - Several years ago when our engineering firm was based near Sacramento, California, we were approached by an architect we routinely worked with about doing the engineering on a new large custom home. The catch was that

the homeowner insisted on building the house with structural insulated panels (SIPs). Not familiar with SIPs like many others in the design community, I reluctantly provided a proposal to the architect. To my dismay, he accepted it.

In the back of my mind, serious questions arose about the mental stability of anyone who would build a structure out of Styrofoam. So, I set out to find what was wrong with the system and dissuade the homeowners from their





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decision to work with SIPs. Much to my surprise, the more I learned about SIPs, the more I realized why they were a good idea.

Applications of SIPs - SIPs can be used for a variety of applications including floors, walls, and roofs. The use of panels in floors is generally limited to the first floor over a crawlspace. The floor panels are ordered with a 3/4-inch top skin. With installed panels, the floor is completely insulated and finished. With conventional framing and

batt insulation, it takes many more steps to arrive at having an insulated floor. Also, it is common to have the insulation sag, which gets worse with time, leaving the floor uninsulated. But with SIPs, the insulation is continuously bonded to the OSB and a gap between insulation and sheathing will not develop over time — meaning that the floor will remain at a comfortable temperature.

Wall panels are typically used in exterior house and garage walls. Interior walls don't need the insulation or the sheathing that the panels are made of, so stick framing and drywall (without insulation) costs less without compromising the home's performance.

The first thought that crossed my mind when introduced to SIPs was, "What is wrong with people that want to build out of foam?" In reality, the foam has little to do with the structural capacity of the panels. There are several loading conditions for the SIP panels:

Transverse Loading (Floor or Roof Panels): Under this loading condition, the panels are installed horizontal and the loading is applied to the top skin of the panels.





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The SIP in this application replaces both the joists or rafters and the sheathing. In conventional framing, the OSB bends between supports.

With SIPs, we change the way loads are distributed to the OSB: as the SIP panel is loaded, the top skin is in compression and the bottom skin is in tension. The panels in this type of loading act like a steel 'I' beam or an engineered 'I' joist where the strong material at the edges of the member are connected by a relatively weak web, making them significantly stronger than if not connected.

Axial or Vertical Loading (Walls): A typical wall uses studs to support vertical loads from roof or floors above, whereas SIP panels rely on the skins of the panel to support all of the vertical loads. The question then becomes, how much load can a 7/16-inch OSB skin carry? As with many wood members, the main constraint on the vertical load carrying capacity of a sheet of OSB is buckling. A sheet of OSB will bow under its own weight when stood on end, meaning that a sheet of OSB on its own has virtually no load carrying capacity.

However, in the case of the SIP panels, the two layers of OSB create a composite structural member that behaves differently than the components do separately. The two skins work to prevent each other from buckling and the SIP panel can carry substantial vertical loads without any additional framing members.

Distributed loads of nearly 5,000 pounds per foot of wall can be supported, which means very large buildings can use SIPs as bearing walls. We have designed multistory buildings in Tahoe with snow loads of 250 pounds



per square foot (most of Oregon is 25 pounds per square foot). We also designed 4-story buildings that used SIPs as the bearing walls on the first floor.

Axial or Vertical Loading (Headers): We try to use the SIP panel as the header over all door and window openings. There is a continuous top plate in the wall and at the top of the opening providing for the installation of 2x lumber. The result is a box beam with lumber top and bottom and sheathing on each side. The panels can also be spliced (joining two panels) over a window opening, which reduces the capacity, but in many cases the resulting header has adequate capacity to support the loads.

Lateral Loading (Out of Plane): This loading condition is usually caused by wind blowing on the outside of a wall. The panels perform in the same manner as the roof or floor panels (described above in transverse loading).

Lateral Loading (Shear): In conventional framing, the studs in a wall have very little to do with the shear capacity. The main component that resists lateral loads is the sheathing installed on the outside of the building, which creates shear walls. The nailing pattern at the perimeter of the sheathing is the main factor in the shear capacity of a wall. By virtue of what SIPs are, the building is constructed with a two-sided shear wall at the entire perimeter of the building. Because SIP panels have a limited general code acceptance, using a manufacturer's published test data for shear walls provides the greatest flexibility of design.

Code & Testing - Since SIPs are not generally accepted by the code, each panel manufacturer is required to test

their panels and submit the testing to the code body for acceptance. Many manufacturers have minimal testing that can require substantial additional lumber in the project to meet the shear (seismic and wind) loading requirements of the West Coast. Selecting a manufacturer with a depth and breadth of testing and technical data accepted by the code can greatly impact the overall cost and performance of a project. More lumber in a project increases the cost and decreases the energy performance of a structure due to thermal bridging (heat moving through the solid lumber) and the potential for air leakage at the lumber connection.

Sizes & Thicknesses - Most panels found on the market are made of OSB skins with EPS cores. The OSB skins allow the buildings to remain as wood framed buildings, and the EPS cores are well insulating and easy to work with. The OSB is a consistent, engineered product that is rated the same as CDX plywood. The OSB sheets are available in sizes up to 8 by 28 feet, although the standard size is 8 by 24 feet. The large sizes allow for panels to be installed in large areas, minimizing the number of joints as well as the amount of lumber that is needed to support the SIPs. The EPS can be melted to allow for installation of lumber, electrical chases, etc., which makes it easier to work with than many of the other types of cores.

The cores of the panels come in thicknesses that match the measurements of dimensional lumber. Nominally, the standard panel sizes are 4-, 6-, 8-, 10-, and 12-inches thick. The panels can be special ordered in thicknesses to match engineered lumber since all panels are pressed specifically for each project. Curved panels of the same composition can also be incorporated into designs, though they are more expensive to manufacture.

Design Considerations - Although the panels come in 4- and 8-foot widths, they can be adapted to fit any design. In the shop drawing process, we maximize the use of the panels in the building by using cutoffs from some panels to fill other areas. We generally recommend that the floor plan be worked out to fit the client's requirements and then we can adapt the SIP panels to fit their needs. Although any project can be converted to SIP construction, if a structure is designed with SIPs in mind from the beginning, minor adjustments simplify the construction process.

Electrical: Electrical chases are provided in all wall panels at plug and switch height, as well as vertical chases at approximately 4 foot on center. Any additional chases needed should be planned for in the architectural design, such as for wall sconces, surround sound speakers, and data cables. The preformed chases allow the electrician to have a grid in which wires can be pulled and installed. Remodel boxes are installed for all electrical boxes. Recessed lighting cannot be used in the SIP panels because the panels do not allow for the heat generated by these lights to dissipate.

Plumbing: Good construction practice is to keep all plumbing inside the building, not in the exterior walls. This is especially true with SIP structures. Plumbing is at best difficult to install in the SIPs and any maintenance or repair would require wall disassembly to access the plumbing. Planning interior plumbing walls and incorporating furred out walls in select areas greatly simplifies the construction for a building.

Energy Efficiency - SIPs have a higher R-Value than conventional fiberglass batt insulation (R-24 for a 5 1/2-inch core SIP as opposed to R-19 for a 2 by 6 conventional wall). Although we have all been conditioned to think in terms of R-Value, there is much more to the energy efficiency of a building envelope than the R-Value alone. The idea being that all the R-Value in the world doesn't do any good if the front door is left wide open. By building with SIPs, we are in effect "closing the front door." A properly installed SIP system eliminates air infiltration and exfiltration from a building, meaning a 6-inch SIP wall will perform up to 60% more efficiently than a 2 by 6 conventionally framed

Green Building - SIPs fit well into a green building approach for both the renewable nature of the materials and the energy conservation of completed structures. The OSB is made of farmed lumber and is free from Urea Formaldehyde (no off-gassing hazard). The EPS used for the cores of the panels is an extremely stable product and does not off-gas. It's also completely recyclable and waste generated in the factory is



re-ground and cast into more EPS. A panel house uses substantially less lumber in the shell, and a prefabricated panel package greatly reduces the amount of onsite waste generated during construction when compared to stick framing. From cradle to grave, panels are one of the most environmentally friendly ways to build.

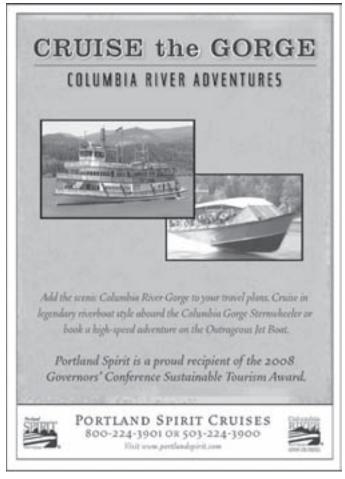
Construction - In many ways, SIPs are comparable to conventional stick framing construction, which is good news to general and framing contractors who are trained and experienced in framing. The SIPs are a wood panel and are installed using all of the "normal" installation tools most framing contractors are used to working with — circular and reciprocating saws, hammers, and nail guns. The only specialized tool that is required is a foam scoop, which generally is provided with a panel package. Additional specialized tools that can make the installation easier or faster are chainsaws and ratchet straps.

Because the skins of the SIP are carrying vertical loads, the skins of the panels have to be supported continuously by the foundation, which is the main reason for any differences in construction details.

The learning curve for building with SIPs is fairly short and any good framing contractor can build with SIPs. For the project owner, it is important to select a high quality builder since the framer is also the insulator and lays the groundwork for the electrician. All of the joints in the SIP are sealed with both an elastomeric caulk (panel mastic) as well as an elastomeric self-adhesive membrane (SIP tape) to ensure the panel is properly sealed against air leakage. Any lumber, such as a post under a ridge beam, has to be drilled to match the preformed electrical chases in the panels to ensure a continuous chase for the electrician. As with many other issues, the post can be drilled after the SIPs are installed — it is just more labor intensive.

HVAC & Water Management - A properly sized heating and air conditioning system is vitally important to the success of a SIP structure. In addition to being a larger upfront investment, an oversized air conditioning unit will run in short bursts, which is less efficient. This "short cycling" cools the interior air quickly, but the air conditioning system does not run long enough to effectively de-humidify the air. The result is a cool clammy environment, which is ideal to promote mold growth. To avoid this situation, it is important HACs (heating and air conditioning contractors) are not allowed to work on SIP buildings unless they







are willing and able to properly size equipment.

The ventilation of the structure has to be carefully planned and executed, which can be accomplished as simply as using bath and kitchen fans to exhaust air, with a duct to introduce fresh air into the air handler. Other more sophisticated methods, such as heat recovery ventilators (HRVs) or energy recovery ventilators (ERVs), can be employed to manage proper ventilation.

One of the main reasons behind the meticulous care taken to ensure no air leakage occurs in SIPs is to ensure no water vapor is allowed to enter the interior of the panels. Managing the humidity in the building is the first step, but the proper sealing of all of the joints, particularly in the roof system, will make certain any water vapor contained in the interior air is not allowed to leak into the roof system where

the water may condense. Because the SIP system is a closed system where no water vapor is allowed in, the roof no longer needs to be ventilated. This also means ceilings follow roof lines, creating vaulted ceilings inside.

Conclusion - Years of experience dealing with SIP projects ranging from simple single-story residential additions to large commercial projects has taught me two important lessons I encourage everyone to consider when building with SIPs. First, one of my earliest conclusions when evaluating SIP panels has held true without exception: proper installation is the key to a successful project. Second, use a high quality panel from a reputable manufacturer.

In response to the need in the industry for competent support for design professionals, contractors, and homeowners, Brandon and Mindy Helms began working with SIPs as distributors for Premier Building Systems. As the principal engineer for Maple Brook Engineering, Inc. and president of Panel Source, Inc., Brandon can provide education to architects, contractors, and homeowners necessary to make certain every project they are involved with will be successful from start to finish and perform well for generations to come.



Gardening

Clean the Air in Your **Home with House** Plants

By B.C. "Bill" Wolverton (Bill Wolverton is president of Wolverton Environmental Services in Picayune, Mississippi, and author of the book How To Grow Fresh Air. A retired NASA scientist, he has studied plants as a way of cleaning the air for many years. This article was included in the anthology The New Village Green.)

cience is now catching up with what gardeners have known for decades- that is, growing plants can relieve stress while helping to clean the environment. Gardening has become the number one leisure activity in the United States and Canada, surpassing even sports. A growing body of research shows that cultivating plants indoors and outdoors may be the best medicine available for improving mental and physical wellbeing at any age.



Although "green building" is becoming an attractive concept to building managers and building occupants, the use of living plants is not part of the present concept. Architects and engineers are beginning to design buildings with an eye toward low-emitting carpets, paints and furniture. This is good but should only be the first step. A further step should include the design of houseplants into each building, mimicking the earth's natural processes.

Benefits derived from our botanical friends include a wide range of psychological and physiological effects. Studies conducted on plant/ people interactions have provided overwhelming evidence that plants do indeed have a measurable beneficial effect on people and the spaces they inhabit.

Plants not only add beauty to a room, but also make it a friendly, inviting place to live or work. Plants symbolize friendship and appear to have a calming, spiritual effect on most people. This perhaps explains why plants play such an important role in human events such as weddings, funerals, holidays, hospital stays and birthdays. Plants are also used as background props for most important events such as television addresses, commercials, etc. People feel relaxed when they are near or tending to living plants. Corporations install interior landscaping to increase worker productivity and decrease absenteeism. Elite hotels, restaurants and other businesses use plants to help entice customers to their establishments.

During early manned space flights, NASA astronauts and Soviet cosmonauts expressed a desire to have plants on board their space vehicles. Plants can help reduce stressful conditions inside cramped space capsules during long-duration flights.

Nature's bio-cleaning machines - In the past, houseplants were sought only for their beauty and psychological value. Thanks to NASA research findings, houseplants now have a third value. Studies conducted in the early 1980s at the John C. Stennis Space Center in Mississippi provided evidence that houseplants can also improve indoor air quality. The ability of houseplants to improve indoor air quality and one's health is no longer a matter of conjecture – its scientific fact.

Plants and their root microbes are nature's biological cleaning machines. - It is commonly understood that plants purify and revitalize the earth's air and water. In general, we know that the animal/plant/microbial world is harmoniously balanced so that each benefits from the other. We are dependent upon these interactions for our existence.

We are just now beginning to understand some of the mechanisms that create these symbiotic relationships. Approximately 42 species of interior plants have been evaluated for their ability to remove various indoor air contaminants from sealed chambers. Hundreds of experiments have been conducted and technical reports published that seek to answer legitimate concerns about placing plants in buildings for the specific purpose of improving indoor air quality.

After more than ten years of extensive research (both laboratory and "realworld"), we now have a basic understanding of how plants function to remove indoor pollutants. Research conducted by Wolverton Environmental Services, Inc., and supported by the Plants for Clean Air Council in Mitchellville, Maryland, continues to expand on the research begun at NASA. Specifically, we are trying to understand how plants clean and revitalize the air and how to use this knowledge to improve indoor air quality.

Plants use ingenious methods to obtain food and protect themselves

from would be enemies. Each plant has the ability to culture microbes on and around its roots specific for its needs. These microbes biodegrade and mineralize (compost) dead leaves, animal waste, tannic and humic acids and other debris to provide nutrients for the microbes and their host plant. This is basis of organic gardening.

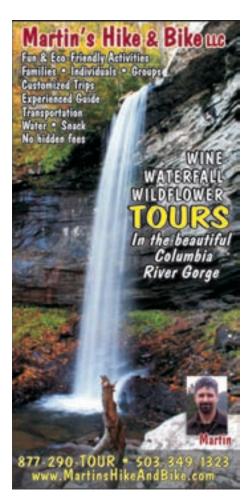
Geographic locations and environmental conditions of the plant's origin determine which microbes it cultures. For example, the microbes associated with plants that evolved underneath the canopy of tropical rainforests (most houseplants) differ from those in arid environments. Tropical plants need aggressive microbes that can rapidly recycle jungle debris. Because rainforests are dark, warm and humid, mold and bacteria thrive.

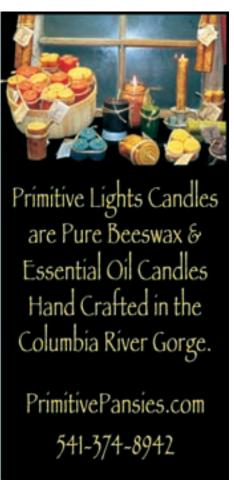
Tropical plants excrete substances that protect their leaves from airborne molds and mildew. When these plant species are placed in an indoor environment, they continue to suppress airborne mold spores. Because chemical pollutants commonly found indoors such as formaldehyde, benzene and xylene have structures similar to components found in tannic and humic acids, microbes adapt to biodegrade these chemicals also. Thus, the basis for plants' ability to improve indoor air quality is established.

Humidity: the basics - Plants use two well known processes to move chemicals in the air to their roots: Leaves absorb certain chemicals in the air and transport them inside plant tissue down to the roots, and plants pull air down around their roots when moisture is emitted from leaves during transpiration.

Plants with high transpiration rates are able to move greater amounts of air. Therefore, the more efficient air cleaners are plants with high transpiration rates. Plant transpiration rates are controlled by humidity. Plants attempt to balance humidity levels for their optimum well-being by controlled release of moisture from their leaves. When humidity is high, plants emit less moisture into the air then when humidity is low.

Early critics complained that too many plants in buildings would cause the humidity levels to rise and support the growth of mold and mildew.





However, findings proved otherwise. Low humidity, most prevalent during winter months, dries the respiratory system and makes one more susceptible to colds, viruses and allergens. Ideally, humidity should range between 40 to 60 percent. Plants produce healthy, microbial-free moisture.

Mechanical humidifiers, when not properly maintained, can become a source of mold and mildew. When plants transpire, they not only add moisture to the air but also emit substances that help suppress airborne mold spores and bacteria. Although these substances are yet to be identified, we do understand their function. Recent findings show that plant-filled rooms contained 50 to 60 percent fewer airborne mold and bacteria than rooms with no plants. Interestingly, air in the plant-filled rooms had fewer microbes, even when temperature and humidity levels were raised – the exact opposite effect predicted by some critics.

Ironically, some doctors advise their allergy patients to avoid house plants. House plants have been falsely accused of harboring mold spores. The real problem is usually over watering and the growth of mold on wet carpeting. To avoid these problems, use hydroponic (soil-less) methods in water-tight planters to grow house plants. If potting soil is used, cover it with aquarium gravel and feed and water from the bottom to keep the surface dry. There are also many commercial sub-irrigation systems available. When large planters are used, the need for frequent watering can be eliminated.

Healthy air for your home - As a general guide, two or more medium to large plants (14"-16" containers) per 100 square feet of area are recommended. Of course, more plants and larger plants would certainly increase effectiveness.

Plants alone may not be the total solution when serious indoor air quality problems exist. Proper source management (allowing building materials and furnishings to vent volatile fumes before installation), complete air distribution and preventive maintenance are all components of a healthy building.

Fan-assisted planter/air filters - Fan-assisted planter/filters may be needed to rapidly remove pollutants from the air. Once the biological mechanisms of plants were understood, it was only

natural to merge man and nature's technologies. By combining the most effective air filtering media, mechanical air flow devices and living plants, WES Inc. has developed a family of enhanced plant/air filters. These aesthetically designed, patented planter units not only increase the air purification capacity of houseplants by as much as 200 times but also help maintain healthy indoor humidity levels.

One of the unique properties of this natural air purification is that under normal operating conditions, the filtering media is bioregenerated (self-cleaned) by the plant's root microbes. Therefore, the filter media does not require periodic replacement, as is the case with other commercial air filters.

We should all breathe easier knowing our beautiful house plants are working so hard to keep us healthy!

Web site: http://www.wolvertonenviron-mental.com/air.htm

Education Education

Ask A master Recycler

by Master Recycler Dana Jeffries Master Recycler Graduating Class #1 Send your recycling questions to crads@ greenlivingjournal.com

I heard that egg cartons can't be recycled again. What happens if I put them in the recycling bin?

I'm going to assume you mean the cardboard paper egg cartons. The Styrofoam egg cartons, by the way, are not recyclable at this time.

You are allowed to toss the paper kind in to your recycling bin, however since they are made of the lowest grade paper they become mush in the recycling process and usually cannot be used again in a new product. If you have a compost pile, its better if you just toss them in with your plant material. Tear them up into smaller pieces for faster composting.

Where can I recycle alkaline batteries?

There are limited places to take regular household alkaline batteries, but I hope I can give you enough convenient locations to provide you an option besides throwing them in the trash. The batteries have heavy metal concentrations, and some of that metal can be reused to make new batteries. They also can contain hazardous materials such as zinc, lead, cadmium, and even mercury.

To recycle alkaline batteries that have



run out of 'juice' take them to either one of Metro's two Hazardous Waste facilities. There is no charge: Metro Central Hazardous Waste at 6161 NW 61st in Portland or Metro South Hazardous Waste at 2000 Washington Street in Oregon City next to the I-205 freeway at exit 10.

Both facilities are open Monday through Saturday from 9-4 to take your hazardous waste at no charge. So, along with your batteries, you can drop off old paint, pesticides, oil, fluorescent bulbs and tubes, and anything else labeled 'hazardous.' Call the Metro Recycling Hotline Monday through Saturday at 503-234-3000 for more disposal locations, information, and directions.

There are a few more places in the Portland metro area that will take your household alkaline batteries, but could charge a small fee: **Total Reclaim** at 5805 NE Columbia Blvd. takes batteries of all kinds. In Beaverton you can drop them off at **E-Tech Recycling** at 5555 SW 107the Ave. In Tigard, **Earth Protection Services** takes batteries at their office at 7272 SW Durham Road.

In Clark County, Washington you can put your household batteries in a sealable, clear plastic bag and set them beside your recycling on your pick up day.

Rechargeable household batteries are much easier to recycle than the alkaline, non-rechargeable batteries. Big stores like Home Depot, Radio Shack and Target will accept rechargeable batteries for recycling.

Dana is a K103 On Air Personality and mother of 2 girls. You can try to keep up with Dana on her web page: www. k103. com/pages/talent_dana.html

Business

Interview - George Siemon, CEO of Organic Valley

by Green Money Journal

George Siemon is an organic farmer, but also Chief Executive Officer of Organic Valley, the \$400 million organic products coop. This interview was conducted by Cliff Feigenbaum, founder of GreenMoney Journal

GMJ: Organic Valley is the largest organic products co-op in the US. Tell us more about the 20-year history of Organic Valley.

GEORGE: I always like to say that Organic Valley is "a social experiment disguised as a business." Our business has always been to serve and work for organic family farmers first and foremost while bringing the best food possible to the consumer. Initially, we were just a small group of produce farmers looking for other produce farmers to collectively market our vegetables. There was a small but growing demand for organic produce in the late 1980's and we were trying to tap into that market. Our first flyer said that our goal was "to be an efficient, economically and environmentally sound, nutritious, self-sustaining marketing system." We believed that we could return a higher price to the grower because we had a tastier and healthier product, and that is what we focused on.

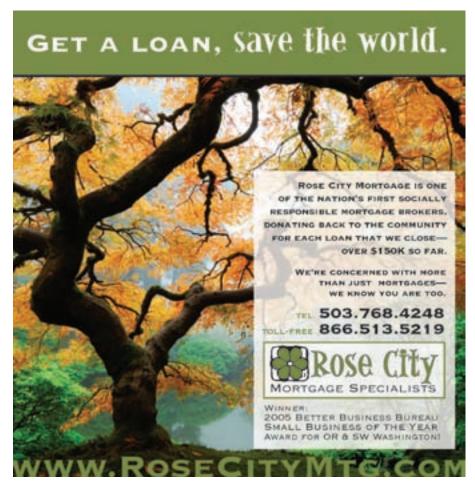
It was after the idea had been formulated for a produce pool that a few of us farmers thought the concept might work for dairy farmers too. Then and now, conventional

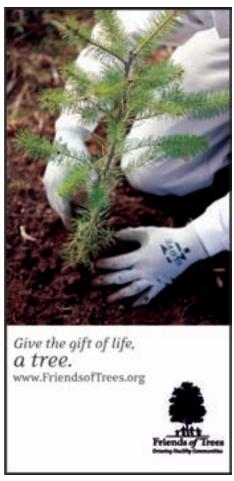


farmers do not know how much they are going to get paid from week to week as the price of conventional milk fluctuates greatly. Could you imagine running a business if you had no idea how much money you had coming in? So, we thought we would do something different, we would set the price for our organic milk, and if we could not get that price we would sell the surplus as conventional so as not to flood the market. This approach has allowed us to pay farmers a fair price for their product.

GMJ: What got you started and kept you involved in creating a farmer cooperative?

GEORGE: Frustration with the way the system was and a real determination to do something different for farmers. Organic agriculture was giving us permission to try something different. It made us hopeful that there was a better





way to operate a successful, profitable farm and it worked. **GMJ:** What do you think is the most remarkable thing

about Organic Valley's history?

GEORGE: I guess the word history is a funny word. The fact that we came upon a formula, and that formula has been amazingly successful as we have grown. We have been following the same philosophical and business mission for the past twenty years, to bring a stable pay price to our producers while bringing the finest quality products to our consumers through a system of farming that is healthy for the land. This formula worked for us when we were a \$2 million cooperative and still works for us as a \$400 million cooperative, it has been amazingly adaptable for our growth. It is important to have diversity of people...farmers and employees. To me, diversity is people from different walks of life who come at organics from different perspectives. Because we are a national co-op we have many different types of farmers; some of our smallest farms have 15 cows while some of our other farms are bigger. We have some Amish and Mennonite producers who farm without mechanized equipment and farmers in Vermont who have an automatic back scratching brush for their cows. It is this diversity that helps give our cooperative strength.

We are past the honeymoon stage in our farmer leadership, some of our pioneering farmers are still involved at our executive committee meetings and we have proven to ourselves that we can survive leadership changes. We have revolving leadership, in our farmer committees, which proves we have set up a governance structure here that survives growth.

GMJ: Your product line is consistently expanding. What are the best selling items for the company and what can organic shoppers expect next from Organic Valley?

GEORGE: Very simply the best selling product for Organic Valley is our white milk; everyone loves our milk. Recently, we have had a great response with our pasture butter, butter made from cream while the cows are in pasture. Bakers and chefs are fond of our butter, cream and half and half.

For Organic Prairie our best selling meat products are our sliced meats, roast beef, turkey and ham. And you can be on the lookout for Organic Prairie Pepperoni and two pound bag of ready frozen skinless, boneless, chicken breasts.

GMJ: The challenges seem numerous for family farmers these days from the price of fuel to the price of feed. What are you hearing the most about (good and bad) from your co-op farmers?

GEORGE: The cost of feed everywhere is high and especially for organic farmers. Essentially, the organic livestock market has outgrown the ability to produce an adequate amount of feed to support the organic livestock. Because the price of conventional corn is at an all time high, farmers are less inclined to take the time to convert their grain to organics to receive the higher price.

We are taking steps to stabilize our feed supply. We worked to support any legislation in the farm bill that supported organic agriculture and were disappointed at the lack of federal funds to support transitioning farmers. We are looking for funding to support transitional farming. We are trying, with others, to set up a fund for securing organic

acres. Not just dairy farms. This would supplement our existing transitioning program.

GMJ: Food safety issues are ubiquitous. How is Organic Valley and Organic Prairie insuring that products are safe for the public?

GEORGE: This is a major, major requirement to be in the food business. Food safety is the first and foremost priority for all of our products. Taste and integrity come next and I truly believe that when you produce a product naturally, with an eye toward giving back to the land as much as you take out, you get a great tasting product. As far as our organic integrity, every farm is third party certified and checked annually. Beyond that, if one farmer is not keeping up to standard you can be sure that his neighbors are watching and are eager to report any slip in practices. Farmers can be a gossipy group and we keep each other honest.

GMJ: What advice would you give to a fledgling company that also wanted to be "green and profitable?"

GEORGE: Embrace good business practices and stick to them.

People start businesses because they feel they will succeed because their philosophy is 'right.' Being right is not enough, it is timing in combination with the right idea and the right business practices. It is important as a business gets bigger to remember what your values are and keep making decisions in line with your values.

GMJ: What are your favorite aspects of farming?

GEORGE: My favorite part of farming is knowing the seasons and knowing what there is to do on each day. When you are on a farm there is a day to do everything, - a day when planting is right, a day when harvesting is right and so on. Living with the seasons is a routine way to know what everyday is for and you get to hone your sense of timing.

GMJ: Where do you see the growth in the Organic marketplace, - coming from in the future, large chain stores or small locally owned stores and co-ops?

GEORGE: Organic food is growing in popularity mostly among large chain stores. Mainstream Americans are voting with their money and they are choosing to go organic.

GMJ: Tell us more about the Organic Valley preferred stock investment that is being offered.

GEORGE: We began selling Class E, Series 1 preferred stock in May of 2004 and it has worked out really well for us as well as for our investors. The stock is currently sold in 23 states and the District of Columbia and we expect to open many more states later this year. To date, strong support of our stock has brought in almost \$16 million. This non-voting stock allows supporters of our cooperative to receive a fair return on investment (6%) while supporting a company and mission they believe in.

GMJ: What are the latest issue(s) on your radar, inside and outside the world of organics?

- Organics is just the base point for standards that can represent a different system of production. To me, the whole "beyond organic" concept is a totally valid issue that our co-op's are really dedicated to, but I'm not thrilled to have the USDA be the judge of what goes beyond organics. That is where the consumers have to come in and vote with their dollars. Some of the areas which are becoming hot topics include food miles, animal husbandry standards, sustainability standards and on and on.

Outside of organics, I think the world's ability to feed itself in a sustainable manner is going to gain prominence as the world's biggest issue. The world population is increasing exponentially and with India and China's growing middle class there is an increased demand for milk and meat. Big agriculture demands a lot from the earth and unless we make our practices more sustainable and water efficient we will pass a point of resource depletion. Organics and family farming are our best options for feeding the world.

For more information go to http://www.organicvalley.coop - Article originally published in the GreenMoney Journal (Summer 2008 issue.) Reprinted with permission. More information at greenmoney.com

Events

Portland: Build It Green! Tour of Homes

Date: Saturday, September 20th **Location:** Self guided Tour (11 AM - 5 PM) and free Information Fair at Ecohaus (3:30 PM - 7:30 PM)

Registration: \$15 per Adult, \$10 Adults with no car, \$10 students & seniors. Free for children under 14.

Tickets: Available in August at Ecohaus and online at *www.portlandonline. com/osd*

Contact: City of Portland Office of Sustainable Development (503) 823-7222, www.portlandonline.com/osd

Twenty homes in the Portland metro area demonstrate the latest in green and solar building practices, from creative use of environmentally friendly materials to rainwater harvesting, energy efficiency and solar systems. Homeowners, builders and architects greet tour goers with expert advice on the design and con-

struction of a healthy, comfortable 'green' home.

A post-tour reception and Information Fair will be held from 3:30-7:30 PM at Ecohaus, 819 SE Taylor, in Portland. Contractors, designers, non-profit organizations, and product/service vendors will be on hand to talk about their projects and answer questions about materials, costs, successes and challenges.

Columbia Gorge Enviro-House Tour

Date: Saturday October 4th

Location: Self Guided Tour throughout the mid-Columbia Gorge Region of Oregon and Washington

Time: Homes open from 11am-5pm. Pre-tour and mid-day workshops also available.

Cost: \$20 per car (please carpool), bikes free!

Registration: Guidebooks available from 9-1 on Tour day at the Gorge Rebuildit Center (995 Tucker Rd., in the Heights of Hood River). Pre-registration and directions available on-line at www.cgec.

Workshops: 4 workshops will be held on Tour Day, please visit *www.cgec.org for information*. Sign up by September 29th.

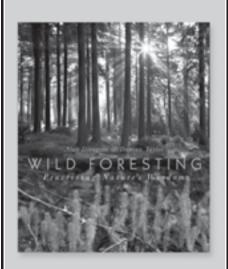
Contact: Tara Keairnes at 541-386-5562 or email us Tour@cgec.org

The 7th annual Gorge Enviro-House Tour will showcase 7 spectacular homes featuring passive and active solar, water harvesting and efficiency techniques, the latest in green products and methods, and the best in natural building with strawbale and earthen structures. Workshops will be held this year, so you have more real knowledge to learn and take home with you. Make a weekend of coming to the Gorge! On Friday we will have a special Green Drinks celebration with keynote speaker and representatives from local sustainable organizations and businesses. Then, on Saturday after the Tour you can enjoy harvest and brew celebrations!!

Please visit www.cgec.org for updated information on all events.







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Book Review

Grave Matters

By Mark Harris

Whatever Happened to 'Dust to Dust'? You Can Still Find It in Green Burial

By the time Nate Fisher was laid to rest in a woodland grave sans coffin in the final season of Six Feet Under, Americans all across the country were starting to look outside the box when death came calling.

Grave Matters follows a dozen such families who found in "green" burial a more natural, more economic and ultimately more meaningful alternative to the tired and toxic send-off on offer at the local funeral parlor.

Eschewing chemical embalming and fancy caskets, burial vaults and costly funerals, they have embraced a range of natural options, new and old, that are redefining a better American

way of death. Environmental journalist Mark Harris examines this new green burial underground, leading you into natural cemeteries and domestic graveyards, taking you aboard boats from which ashes and memorial "reef balls" are cast into the sea. He follows a family that conducts a home funeral and delivers a loved one to the crematory, another that hires a carpenter to build a pine coffin.

In the morbidly fascinating tradition of Stiff, *Grave Matters* details the embalming process and the environ-



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mental aftermath of the standard funeral. Harris also traces the history of burial in America, from frontier cemeteries to the billion-dollar business it is today, reporting on real families who opted for more simple, natural return.

For readers who want to follow their example and, literally, give back from the grave, an appendix details everything they need to know, from exact costs and laws to natural burial providers and their contact information.

Mark Harris is a former environmental columnist with the Los Angeles Times Syndicate. His articles and essays have appeared in the *Chicago Tribune*, *E: The environmental magazine*, *Reader's Digest*, *Vegetarian Times* and *Hope*. He has been a guest on Terrry Gross' NPR show, *Fresh Air*, and has been interviewed by CNN, USA Today, the *Baltimore Sun* and *People*, among others.

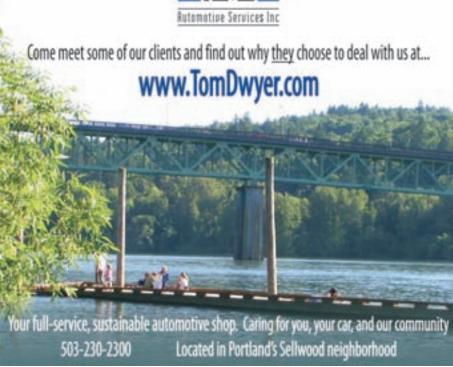
Mark is a member of the Society of Environmental

Journalists. He lives with his family in Pennsylvania. Visit his Web site www. gravematters.us

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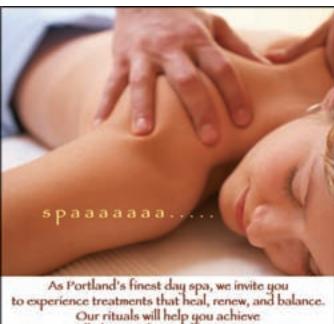
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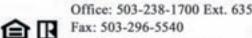
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