

Green building that doesn't take much green

by Lara Hartman
and Cindy Hryszko

Increasing material costs in the home building industry have persuaded consumers and builders to seek more efficient and economic forms of construction. Strawbale housing is one low-tech, environmentally friendly, relatively affordable alternative.

Straw construction was first utilized in the late 1800s in the Plains states, in response to the shortage of wood for building. Approximately 200 million tons of straw is available each year for construction, enough straw to build 4 million homes. Waste straw is the remainder of crops such as wheat, oats, barley, rye, rice and flax, after all the food has been removed. A renewable resource in great supply, straw can offer simple construction with great versatility.

Strawbale homes are durable and, with minimal maintenance, can often last a lifetime. There are some straw buildings in the United States that are more than 100 years old.

Strawbales can be used “Nebraska” style as load-bearing walls or as infill material in post-and-beam construction. Straw has a high R-value (a measurement of insulation for building materials). Bale walls can have R-values from R-35 up to R-50, which is

Strawbale homes are durable and can often last a lifetime. There are some straw buildings in the United States that are more than 100 years old.

twice the R-value of regular wood-framed walls. Straw walls also have a high degree of fire resistance, since compressed bales are normally covered with cement or earthen plaster. Properly plastered strawbale walls adequately keep out bugs and rodents.

Costs for strawbale housing vary, but are usually \$2 to \$4 per bale. Distribution costs remain low due to the widespread availability of straw.

Building with bales of straw has become common in some parts of the country, especially the southwestern United States. Many localities have specific codes for strawbale construction, and some banks are willing to lend on this technique.

Organizations such as the Center for Sustainability at Penn State have already been experimenting with this technique. Currently, the group is working to build a solar-powered home called the Morning Star on the Cheyenne Reservation in Montana, testing to see how well the technical core can be reproduced in the western part of the United States. Through this program with the American Indian Housing Initiative, Penn State and partners work to find and build sustainable housing for

American Indians using different strawbale building methods and recording the results in different regions, according to the American Indian Housing Initiative Web site.

The organization has already built houses in Montana, South Dakota and Washington state, working to find regionally appropriate sustainable housing solutions.

An essential part of green design is to construct a home that uses design features that reduce the energy load required for a building. This means that less energy is required for heating, cooling and lighting the space in the building. These design features can optimize heat from the sun to warm a room, through “passive” solar heating, or use sunlight to light a room naturally, through “day lighting.”

Eco-friendly building materials with a high R-value, including SIPs (structural insulated panels) used for walls, double- or triple-paned windows, and cellulose or strawbale insulation, will prevent the loss of heat and save energy.

As solar power becomes more prominent, strawbale housing and other alternative housing technologies will most likely

become more readily available, creating more jobs in the future.

Gov. Ed Rendell recently revealed a proposal for the Pennsylvania Sunshine program, a \$200 million program within his Energy Independence Strategy, designed to help residents pay for up to 50 percent of the cost of installing solar panels on their home or small business. At current electricity rates, the average household could save about \$600 a year with solar panels that produce about two-thirds of the electricity consumed in the home, according to a press release by the Department of Environmental Protection.

The plan intends to have the state commit to about 858 megawatts of electricity generated by the sun by 2021. It takes one megawatt to power about 800 homes.

The Energy Independence Strategy, released on Feb. 1, proposes to assist consumers in cutting energy costs, decrease the state’s reliance on foreign fuels, and expand alternative fuel and conservation business sectors, according to the DEP press release.

Written with the help of Laura Silver of the Penn State Center for Sustainability. For more information on strawbale housing or to view models of completed Center for Sustainability projects, visit:

<http://www.egr.psu.edu/greenbuild>

<http://www.egr.psu.edu/cfs/solarD.aspx>

Ways to avoid buying a home energy lemon

by Kevin Gombotz

1. **The Bill Collector Knows.** Call the gas and electric companies and ask for the home’s average usage data (it is standard to provide this to prospective buyers). This should serve as a check for ‘red-flags’ only, since the previous owner may have had habits quite different than yours.

2. **They Used to Live Here.** Conduct reconnaissance to determine if the previous owner’s energy usage may have been higher or lower than yours. Did they use a woodstove? A heated swimming pool? Air conditioners?

3. **Danger: Electric Sticker Shock.** Note how the house is heated. Electric

baseboard heat is notoriously expensive, hard to control, and vulnerable to future rate hikes. Meanwhile, an electric high efficiency heat pump (like geothermal) can be most cost effective.

4. **A Light in the Attic.** Peak in the attic to note the levels of insulation. If there are less than 8” inches it will easily pay to add more. Fortunately, this is a quick fix.

5. **The Writing in the Walls.** If the house is more than 30 years old, check to be sure there is insulation in the walls. Unfortunately, insulation was not always standard practice and isn’t an easy retrofit. A cable or phone outlet on an exterior wall is a good inspection point. Be sure to stay clear of electrical outlets.

6. **Icicles are Pretty. Pretty Expensive.** If it is winter, lookout for icicles. Icicles form when significant heat loss melts the roof snow and it refreezes. They are usually a sign of poor insulation or severe drafts.

7. **Cobwebs Aren’t Just Dirt.** Note if there are excessive cobwebs. They indicate the presence of air leaks, as hungry spiders like to see what the draft brings in. Air leaks often account for 40-50% of the energy usage in a home.

8. **Let the Sun Shine In.** Take note if the house gets good sun, an asset in the winter heating season. Also, if it has unshaded southern roof slopes it may be a good candidate for a solar hot water or a solar electric system.

9. **Its Good to Have Options.** Look for a house with a secondary heat source (wood, oil, gas, electric). In our climate the heating system is most crucial, and a house with alternatives will be better prepared for a future of uncertain energy prices.

10. **A Place for the Professionals.** Ask your home inspector to keep a keen eye to potential energy efficiency problems. Professionals dedicated to home energy inspections and ratings will have specialized tools such as infrared cameras and depressurization equipment to literally see inside the walls and cracks.

Kevin Gombotz lives in State College and conducts home energy audits for Envinity, Inc.

Another take on public transit and housing

by Andy Lau

Last month I argued that riding the bus is often less expensive than driving a personal car downtown, particularly when considering all of the costs of car ownership and petroleum use. This month, in keeping with the theme of affordable housing, I'd like to continue the topic of transportation costs, particularly the effect of living farther from work to reduce housing costs.

In 2004, a study done by the Public Policy Institute of California found that low-income workers walk, carpool and use public transit at higher rates than their more affluent counterparts, in *Transportation Spending by Low-Income California Households: Lessons for the San Francisco Bay Area*. The study defines households as low-income if income is below 200 percent of the federal poverty level, with high-income being above 200 percent of the poverty level. About 25 percent of households in the study are low-income.

Transportation spending is the third largest budget item for low-income households, with housing being the largest fol-



lowed by food. Low-income households spent an average of \$2,164, or 13 percent of their budget on transportation annually. Higher-income households spent \$6,569, or 15 percent of their budgets, on transportation. Interestingly, one-third of low-income households in the study do not own a car compared to only 10 percent of higher-income households. Many of the people in these low-income households live within walking distance of work or near mass transit and as a group live closer to work than higher-income households.

These data reinforce the perception that living close to work is an advantage, particularly for low-income households. I grew up in a poor household that did not have a

car but was lucky enough to live in downtown Hanover, Pa., where all needs were within easy walking distance. My family, like many other poor and low-income families, could simply not afford to own a car. Fortunately, there was sufficient rental housing available in the town.

As working families move to suburbs or rural areas to find more affordable housing, transportation costs rise. In many cases, the savings in housing costs are greater than the increase in transportation costs. A recent Center for Housing Policy study, *Something's Gotta Give*, found that "low- to moderate-income working families spend 77 cents less for transportation for every additional dollar spent on housing." Stated this way, it reflects the disincentive for families to pay the higher cost of housing that is closer to their place of work. If just considering the combined costs of housing and transportation, people are making an economically justified decision when they choose less expensive housing that is further from their place of work.

There are, of course, many other factors to consider. Here are some negative impacts

of living further from work: commute time increases, traffic congestion increases, and there is likely more dependence on a car. One thing we often forget when considering a car-dependent location is that a large percentage of people do not drive, including children and elderly folks.

Possibly the most disturbing part of insufficient availability of affordable housing for people who work in the State College area is that it may no longer be a choice about where to live. People like me who enjoy the option to walk, bike or ride the bus to work may not have that opportunity. Plus, there is the diminishment of our community when it is not representative of all walks of life.

To view the data from the *Transportation Spending by Low-Income California Households* study, visit: www.ppic.org/main/publication.asp?i=428

CORRECTION

The North Central Regional Planning and Development Commission studied the feasibility of more ATV trails. *Voices* misnamed the organization in our last issue.

Environmentology
Honda thinking in action.

Honda is committed to creating and advancing environmental technologies for a cleaner world.

HONDA



"Action without philosophy is a lethal weapon; philosophy without actions is worthless."

- Soichiro Honda, Founder of Honda Motor Co., LTD.

Dix Honda

2796 W. College Avenue • State College, PA 16801

(814) 238-6711 • Toll Free (800) 829-6711

ENVINITY
Green Design and Construction

- GET A PLAN
- LOWER HEATING BILLS
- KICK THE OIL HABIT

Foster Avenue — State College — 814-231-3927 — www.envinity.com

At Envinity, we believe it pays to go green. This winter our Home Energy Audit is empowering local homeowners with clear paths to better living. With a detailed home evaluation and personalized follow-up consultation, we'll show you improvements that can be felt today and for years to come.



Custom Ear Pieces for Cell Phones

Custom ear pieces are molded to fit your ear for comfortable and secure "hands-free" headset use.

Albrecht Audiology
Personal Hearing Care

Call 814-867-HEAR (4327) (albrechtaudiology.com)

Yellow-bellied sapsucker: A sight to behold

by Alice Fuller

Once several years ago after a talk I gave about bird migration, one of my listeners asked if there was such a bird as a yellow-bellied sapsucker. She, like many people, had heard the name bandied about by comedians and in jokes, and she was surprised to learn that a bird with such a funny and odd-sounding name really exists.



It's true, I told her. One of our woodpeckers was labeled long ago as a yellow-bellied sapsucker. No fault of the bird, you understand, but the name is quite suitable; the bird does have yellowish underparts. It also drills holes in trees and dines on both the sap that oozes forth and the insects attracted to that sap.

The Jan.-Feb. issue of *Bird Watcher's Digest* features a picture of a beautiful male yellow-bellied sapsucker, and there is a lead article inside with more illustrations. I like the way the author started his article: "Like a feathered maple sugar tapper, the furtive yellow-bellied sapsucker maintains a network of neatly maintained sap wells, leaving its mark on eastern forests, suburbs and city parks. And other creatures take notice.

BIRD Watch

Squirrels, chipmunk, and at least 35 documented bird species—from other woodpeckers to hummingbirds to warblers—come to sip sap and snap up insects attracted to these excavations."

I read once that the sapsucker is reported to imbibe the juices of nearly 300 species of trees and vines. The bird sometimes girdles and kills a branch and occasionally destroys a whole tree. More often, the holes cut in the trees tend to disfigure the resulting wood products.

Naturally, the feeding habits of this woodpecker have aroused the ire of orchardists, growers and owners of ornamental trees. Still, one cannot fault the sapsucker for its lifestyle. Some eons ago, a woodpecker discovered the delights of the lifeblood of trees. They dined peacefully for centuries, far ahead of humans in discovering the delicious nectar that flows from the sugar maple tree and the less-sweet delights of other maples, birches and similar species.

In the latest issue of *Living Bird*, published by the Cornell Lab of Ornithology, appears an account of the importance of the sapsucker to another species: "The ruby-throated hummingbird is perhaps one of the greatest beneficiaries of the sapsucker's largess. Many of these hummingbirds arrive in their northern breeding areas in early spring, when few plants are in bloom. The sapwells can be a lifesaver for them at this time, making it possible for the birds to survive without flower nectar. The hummingbirds also consume some of the tiny insects attracted to the sapwell, thus gaining additional protein-rich food."

Unlike most of our woodpeckers that are

year-round residents, the sapsucker, like the flicker, is a migratory species and prefers a warmer climate in which to spend the winter. According to the *Atlas of Breeding Birds of Pennsylvania*, some sapsuckers do breed in the northern counties of the state, with a few scattered records elsewhere in Pennsylvania.

We most often see them in spring or fall migration, although occasionally one may over-winter in our area. One recently turned up in the yard of some fellow birders who live in Stone Valley. The Groves were leading a birding field trip to Big Valley, and while we waited for other birders to arrive from State College, our quartet of birders stopped by their house to see a sapsucker feeding on birdseed. It is always special to see a sapsucker and observe the red head and throat of the male; the female has a white throat instead. Dorothy Bordner's drawing depicts the striking black and white head and body patterns of the sapsucker.

Dorothy also told a remarkable tale to a group of us last fall who were making plans to decorate one of the Christmas trees in the Penn State Ag Arena. She had been to visit a bird bander in Maine who lived next to

Baxter State Park. This bander had been feeding approximately 240 ruby-throated hummingbirds. To handle so many, she used the little containers one gets with pills and vitamins from drugstores. She filled them with the usual sugar-water solution and placed them on porch railings, windowsills and so forth.

One day she found a container full of the long legs of crane flies. The next day she discovered the same thing, so she decided she must watch and see how this could happen. The following day as she watched, a yellow-bellied sapsucker flew in with a crane fly in its bill. It proceeded to dunk the fly in the sweet liquid and then flew off, probably to give one of its kids a sweet treat. The procedure of dunking caused the legs to break off in the container.

Yes, indeed, there lives a bird of flesh, blood and feathers that just happens to be called a yellow-bellied sapsucker. Soon it will be time to look for these attractive woodpeckers in woodlands or perhaps clinging to the trunk of a shade tree. I don't think of this bird as one with a funny name but rather as a handsome migrant that I hope might even visit our yard this spring.

Developing an eco-disaster?



photo by Suzan Erem

This development, across Fox Hollow Run Road from Toftrees, was completely cleared yet the name of the development is "Wooded Hills." The property is rimmed with a new ever-green planting, but acres of deciduous trees were taken out. Local experts say that when forest is destroyed for development, the environment loses the forest floor's water filtration system that recharges the groundwater supply. Wildlife habitat and a source for clean air generated by plant life are destroyed as well. These homes will sell for \$300,000 or more, according to local sources.

Please support the family of U.S. Marine Cpl. David Emery

The 2003 Bellefonte High School graduate's tour was to end Jan. 1 but was extended to Feb. 20. He was gravely wounded in the interim.

His wife Leslie Shivery is eight months pregnant with their first child.

Nittany Leathernecks are collecting donations
at any Nittany Bank location or by mail:

David J. Emery Fund
c/o Nittany Bank
125 N. Allegheny St.
Bellefonte, PA 16823

Contact Doreen Koleno, 548-0006 for more information.

This ad donated by Voices of Central Pennsylvania Support our Troops - Bring them Home!

Little Juniata River ruled a public waterway

by Cindy Hryszko

In the highly controversial case over access rights to a popular fishing site, the Little Juniata River in Huntingdon County, the judge has made his decision. The "Little J" is ruled open to the public.

Three state organizations and a local tackle shop owner fought in court in late January against Donald Beaver for blocking public access to the 1.3-mile stretch of the stream he leases for his Spring Ridge Club.

"We're not out there looking for fights, but sometimes they get brought to you. That was the case with the Little J; it's a popular fishing stream," said Dan Tredinnick, press secretary for the Pennsylvania Fish and Boat Commission, one of the state organizations involved in the suit.

Tredinnick said the Commonwealth felt that local anglers' complaints were too valid for the state not to intercede.

The case came down to the issue of the river's navigability, which under state law means the river is considered a public waterway.

"The Little J was navigable because of its

historic use for commercial trade," said Tredinnick. "It was used as a trading route, so it was in essence a public highway and for the purpose of navigability should be considered a public highway."

In the 57-page ruling, Huntingdon County Common Pleas Judge Stewart Kurtz

"I'm really glad the judge made the right decision and opened the river to the public."

--John Henry

said that the Little J is a navigable river. Local historians at last summer's non-jury trial proved that the river was used for transporting whiskey, grain and other goods from the time the pioneers settled in Central Pennsylvania until railroads were built in the mid-1800s, Tredinnick said.

"This covers the right to move up and down the waterway and doesn't change the rights of the property owners," he said,

adding that if Donald Beaver were not to abide by the ruling, he could be pursued civilly or criminally. Tredinnick said he hopes it won't come down to that now that the courts have spoken on the matter.

In the past, Donald Beaver had tried to exclude the public from using the river for recreation by posting "no trespassing" signs and erecting cables across the waterway at both the upper and lower ends of the stretch.

Since the state won the case, local tackle shop owner Allan Bright of Spruce Creek Outfitters can move ahead in his suit for financial damages against Donald Beaver. Bright claims that the lack of public access has cost him thousands of dollars in business over the years.

"I'm really glad that the judge made the right decision and opened the river to the public," said John Henry, a Huntingdon County resident, who said he has fished near the site in the past. "It's a shame what [Beaver] was doing, chasing people out of that area."

The judge's decision may be of great importance in setting a precedent for future

disputes between public rights and landowner rights.

Tredinnick said that in the 1990s there was a similar case on the Lehigh River, which the court determined was navigable water and therefore belonged to the public.

"Now we have two court cases that establish a precedent, and the court can look back on these cases and see how other courts decided," he said. "There is no automatic transfer, but if that water does meet the criteria for being considered navigable and someone pursues a case, they could refer to the Juniata."

Tredinnick said he could not think of any rivers in the state that are currently in the same position that the Lehigh River or the Little Juniata River was in, but added that he will help fight for public rights to recreational usage of waters if such a situation would arise.

"Because of the high amount of public interest [in Little J], we suspect we'll have other instances brought forward and see more instances and more cases brought to our attention," he said. "I suspect we'll see more of these in the not-so-distant future."

With Lower Rates and Fees, PHFA can help you buy a home.

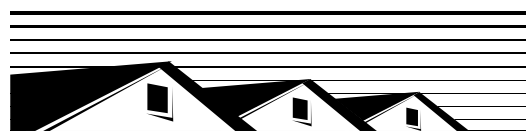
Pennsylvania Housing Finance Agency is committed to providing quality, affordable housing to people just like you. With a variety of programs to meet your needs, PHFA is making homeownership a statewide reality.

For more information about PHFA's 30-year fixed-rate mortgage programs, and to find a PHFA participating lender near you, call the Homeownership Hotline at 1.800.822.1174 or visit www.phfa.org.

PROGRAMS OFFERED

- Keystone Home Loan
- Keystone Home Loan PLUS
- Disability Access Modification
- Down Payment and Closing Cost Assistance

OPTIONS INCLUDING
Conventional, FHA,
RHS, and VA



PHFA

PENNSYLVANIA HOUSING FINANCE AGENCY

Edward G. Rendell, Governor • Brian A. Hudson, Sr., Executive Director