Living Energy Farm January-February 2013 Newsletter

Upcoming Workshops

After canceling two workshops due to wet and muddy conditions, we are rescheduling our **Green Building Workshop** for **February 24** from 1-4 PM. This workshop will take place at 912 Woodfolk Drive in Charlottesville, NOT at Living Energy Farm in Louisa. It is free, although donations are accepted.

And for the third year running we are offering our **Fruit Tree Propagation Workshop** at Woodfolk House in Charlottesville. Because of the huge turnout last year, this year we are offering this workshop on two dates, **April 6** and **April 24**. Look for more details on this workshop in our next newsletter. This workshop costs \$50, and preregistration is required.



Not great solar cooking weather!

Snow Time at Living Energy Farm

Winter has been a mixed bag for us at Living Energy Farm. We had an extremely productive December and early January, thanks in large part to the efforts of Nina, our new building manager. Conditions were dry and unseasonably warm in early winter, which allowed us to get a lot of work done on the foundation for our fossilfuel-free kitchen (see below, Active Solar Heating).

But sadly, Nina had to go back north for a few months, and as soon as she left it turned wet and cold. We'd just had some earth moving done to improve the

road, which made the mud that much worse. So progress has slowed down in late January and February, as we wait for things to dry out so construction can continue.

In the meanwhile, we're busying ourselves with more indoor-type activities. Edmund and Debbie have been planning next year's seed growing gardens. This year we hope to be growing two different varieties of heirloom corn, two varieties of okra, lots of peppers, tomatoes, and watermelons, and a very large grow-out of our favorite winter squash, Seminole. Edmund and Debbie also went out to the Virginia Biological Farmer's (VABF) Conference this February. We enjoyed going to talks about soil health, farm planning, and growing berries. We also talked with other farmers about doing variety trials to find openpollinated varieties of melons, peppers, squash, and other vegetables that are well suited to market growing in our area.

Alexis has been making the most of a wet winter by giving talks on living without fossil fuel in Charlottesville and Richmond. These talks use examples of technology and infrastructure design used by LEF and other sustainable living institutions to educate folks on how to live free of corporate dependence. Alexis enjoys using these opportunities to challenge people to make radical changes to their lives.

Active Solar Heating

What makes a residence unique that uses no fossil fuels? The differences begin right at ground level, with the foundation. We're designing our house and kitchen to be solar heated, using both passive and active features. Passive solar design consists of aligning the house on an east-west axis with lots of south-facing windows and fewer windows on the north side of the house. This simple design feature allows for lots of solar gain in the winter, when the sun is low in the southern sky, and very little solar gain in the



Hot air will be blown through this pipe and under the slab.

summer, when the sun is directly overhead.

Passive solar is simple and effective, but the heat is only transferred to the air inside the house, so heat is not held for long at night or on cloudy days. Active solar heating involves capturing the solar heat with a medium, usually water, which is pumped into storage, often under the floor. The water heats up the floor, which slowly releases the heat back into the house. The large thermal mass of the floor flattens the temperature curve, so instead of having a very warm house when the sun is strong and a cold house at night, the temperature stays more constant.

Many active solar or radiant slab houses use this technique. We've decided to use a slight variation on this design. The main drawback of a water-based system is expense. Corrosion and heat resistant plumbing requires using copper, which is becoming more rare and expensive. We have designed a heating system that uses air instead of water as the transfer medium. The entire southfacing side of our roof will be a solar collector, with sheets of glass fixed a few inches above the sheet metal roof, which will be painted black. The hot air that collects between the roof and the glass will be

blown through duct in the walls and through course rock between the dirt and the slab. Gravel under the slab is required by building code anyway, we are just using courser rock, so this adds very little to the cost of the building. The heat will transfer into the rock and the slab, adding thermal mass which further increases the effectiveness of the system to hold heat over longer periods of time.

Of course, you can't talk about environmentally benign heating systems without mentioning insulation. Sometimes expensive solar heating systems are installed in poorly insulated houses. This is folly in our opinion and leads to extensive use of a back-up system like gas or wood. Our buildings will be super insulated with strawbale walls (R-value 45) and recycled newspaper roofs (R-value 60). We are using thick insulation around the inside of the foundation (reclaimed from a commercial demolition) to hold in the heat absorbed by the dirt under the gravel. While we will have a back-up wood stove, with this system in place we hope to avoid firing it up unless we have a cloudy spell of 3 or more days in the winter.



Kathryn installs insulation inside the foundation.

Fund Drive Progress

We're happy to announce that Living Energy Farm has raised \$1,800 in our fund drive to hire a building manager for our fossil-fuel-free residence! Our goal is to raise \$7,200 by July of 2013, so we're well on our way. Be sure to look out for announcements about fund raising events in our upcoming newsletters and on our website.

Living Energy Farm is a project to build a demonstration farm, community, and education center in Louisa county that uses no fossil fuels. For more information see our website www.livingenergyfarm.org, or contact us at livingenergyfarm@gmail.com. Donations are tax deductible.