

Living Energy Farm

May - June 2014 Newsletter

A House That Runs Without Fossil Fuel

Our house is finally coming together! We have been working hard on our house designed to run without fossil fuel. With some excellent help from some friends, we have framed it up quite quickly.

Then came time for the trusses - big, heavy, wobbly trusses that were a challenge to raise by hand. But with a big crew of volunteers, we did it, with human power.



We lifted the trusses, and then slowly, carefully slid them into place. This is work normally done by a large diesel crane.



As we go to “print,” we are putting the roof on the house so it will be dry come winter. The main house has more sheathing (plywood/ chipboard) on the walls than the kitchen. Both are strawbale. We have found the cheapest, lowest-impact way to do strawbale is simply to stack the bales inside of a conventional wall. This uses a lot less wood than post and beam construction, and goes up much faster. (It also help keep the building inspector happy.) The sheathing uses up a bit more wood, but provides excellent structural bracing, and means the house will be dry this winter. This house is not small. On a structure where one was assured that the bale walls were going to be built and protected from the elements quickly, then one could forgo the sheathing. That's what we did with our kitchen. The sheathing makes the house look more like a conventional structure, but will still be strawbale and stucco, just like our other buildings.



There are numerous considerations in building a zero fossil fuel house that are very different from “normal” design. Our electrical energy budget is extremely modest. We will have no lead-acid batteries (which are toxic and don't last long). Our nickel iron batteries support LED lighting, but not blowers or pumps at night to pump heat. So in the winter, we will pump heat from our south facing solar roof during the day and store that heat under the floor in the rock and dirt. (See photo below of the solar roof construction on the kitchen.) We also need to control mold and mildew (in the absence of hugely energy consumptive air conditioning). Every room in the house as apertures (doors and windows) on opposing walls to provide cross ventilation at night. We are pumping our agricultural irrigation water through the house. This water will serve as a large heat sink, thus giving us fairly effective air conditioning, only for the cost of installing the pipe! This demonstrates the importance of village scaling. If people are separated from the support systems that provide for them, such integration of systems is not possible.

Our house will be super-insulated, constructed at a very modest per-capita cost, and has enormous thermal mass. These features will allow the house to stay comfortable year-round without fossil fuel, without large battery banks or the heavy, expensive equipment that so often accompanies “green building” projects these days.

We are also putting together the solar roof on our kitchen. This is no more complex than glass over the top of black sheet metal (with insulating foam behind). There are ducts that blow air under the glass (not visible in the photo), and then under the floor of the house. These blowers use the same solar panels that power our irrigation system in the summer. Again, a tight integration of systems that is only possible on a village level.



Sweet potatoes and Seeds

Our business selling sweet potato slips through Southern Exposure Seed Exchange is going well. Sweet potatoes are a great crop from a self-sufficiency standpoint, especially in warmer areas. They are enormously productive, store through the winter, and easily produce slips for replanting in this climate. (White potatoes get degraded by diseases. It is very difficult to save your own seed in the south without perpetually importing seed potatoes from cooler climates.) Sweet potatoes have become an excellent business for us, which we need. We marketed about a dozen varieties this year, with plans to have more in the future.

Our seed crops are doing well this year. We have reduced the complexity of our seed operation this year so we can focus on getting work done on the house and other infrastructure.



Our favorite seed crops are the ones where we get to eat the vegetables and sell the seed, like Orange Glo watermelons! These are wonderful, orange-fleshed melons that we are growing again this

year. Not ripe yet, but soon!



Growing Food on Trees

LEF is a number of projects wrapped into one -- a zero fossil fuel farm and community, supported by a growing open pollinated seeds. Another aspect of our project is that growing food on trees. Such horticultural foods are enormously resilient because the root systems of the trees are massive compared to vegetables or grains.

Unfortunately for us, we have had some hard lessons in the last few years. We have planted or grafted onto wild saplings to establish hundreds of trees at LEF. The last 3 years prior to the current spring were horrific. We have had extreme oscillations of spring temperatures (related to jet stream disturbances caused by climate change). This is hard for young trees. Then the 17 year cicadas showed up. Then last winter dropped to -10F at LEF. Brrrr. We have lost a lot of trees.

Berries have faired better. Though they may not be of primary importance as a food source, they certainly make rural life more fun. We have planted quite a few thornless blackberries over the years. Most are pretty sour. We have found one called Triple Crown that is much tastier. Big and juicy too!



We are shifting some in our focus on which trees we are growing. Asian persimmons have been a food source of great importance in the Far East prior to the age of insecticides (bugs don't like them). But they have not held up well to the cold and oscillating temperatures. So we are shifting more toward American persimmon cultivars, and American-Asian crosses (Rosseyanka and Nikitas Gift). The American persimmons and crosses are even higher in food value (high caloric and nutrient content) than the Asian persimmons. There are thousands of little, wild persimmon saplings all over our land, as there are in many places in the southeast. Grafting onto these wild saplings is by far the easiest, fastest way to produce an orchard. The photo below is an American persimmon (Proc) grafted onto a wild sapling. The photo was taken only a few weeks after the graft was made, and already there is about 4 feet of growth on the new tree! And we don't have to water them as the root system is well established.



Upcoming Workshops and Events

We'll be holding a **Seed Saving Workshop** on **August 23rd** from 1-4PM, following a work day in the morning where we will harvest our seed crops (and probably do some construction). The workshop will teach about growing, harvesting and cleaning open pollinated seeds using both wet and dry processing methods. We will likely be cleaning pepper, watermelon, or okra seeds.

Twin Oaks Communities conference is Aug 29 - Sept 1, a great gathering of community minded folks. The conference is a chance for people interested or involved in intentional communities and other community-oriented projects or businesses to share ideas, network, and enjoy a weekend together. Basic registration fee range is \$90 - \$190, depending on accommodations. Website: <http://www.communitiesconference.org/> (NOT an LEF event.)

We will send out an update about our workshops soon. Please *RSVP a week in advance* if you plan to attend. Beware, sometimes workshops get canceled if no one is interested. If you show up unannounced, we'll probably put you to work, but it might not be in the way you anticipated.

Getting Involved

LEF is an ongoing project. We have workdays every Saturday, and are on the property 7 days a week. If you want to come out on a Saturday, please do. If we you want to come out during the week, best to email us a couple weeks in advance.

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 to the Living Energy Farm Education Fund are tax deductible.

Note, this newsletter was produced in large format, assuming the reader is reading an electronic version. Our prior newsletters were compact to facilitate printing. Please let us know if the large format is a problem for you.