

## Living Energy Farm

### July-August Newsletter

#### Earthquake!

On Tuesday the 23rd of August, Living Energy Farm was rocked by a 5.8 magnitude earthquake, centered only 5 miles southeast of the farm. The quake was the largest in Virginia's history. Alexis, who was out in the field at the time, described it as feeling like he was inches from a speeding freight train. None of our structures had any damage; however, some of our neighbors in Louisa suffered significant damage to buildings and utilities, and a few minor injuries. Some of us have taken a break from LEF work to help our volunteers from Twin Oaks Community with clean up and repairs to damaged buildings there.



*Earthquake damage at Twin Oaks.*

Strong earthquakes are very rare in this part of the world- in fact, an aftershock of magnitude 4.5 on Wednesday night was the second largest quake in Virginia's history- and we are all hoping that this does not mark the beginning of a new, more seismically active era for central Virginia. Still, this event has caused us to rethink how we will construct some of our buildings. Wooden buildings, which have some flexibility to them, fare much better in an earthquake than masonry buildings. Wood framed strawbale should hold up well to a quake, compressed earth block would not. At Twin Oaks, the building that suffered the most structural damage was built from unreinforced cinderblock. Building to earthquake standards means we will be adding more rebar to foundations, which will increase costs; it also means we will be taking care to strap stoves and heavy objects to the floor. At Twin Oaks, many boilers and water heaters moved as much as a foot during the quake, ripping plumbing from the wall.



*Alexis and Rosa in front of our new solar array, still under construction.*

#### Our New Well

In happier news, the infrastructure of Living Energy Farm took a big leap forward this month with the installation of a solar powered well! The well is 220ft deep and will supply water by means of a DC electric submersible water pump powered by our new 180V solar array. The solar panels, well drilling, pump, electrical and plumbing supplies were financed by a grant from a private foundation in Charlottesville.

We chose to fit this well with a submersible pump because it takes much less energy to push water from its source than to pull it towards you. However, a submersible pump is what we call a "black box"- a complex machine that needs to be manufactured elsewhere, and is not repairable when it breaks. A surface pump, such as the piston pump we are using for irrigation water, is less efficient but is repairable, and can be powered by a variety of means such as solar electric, pedal power, woodgas, or draft animal power. We will have a surface pump to augment the submersible.

In general, we at LEF prefer simpler, cheaper, older technologies that are less likely to fail and can be repaired on the farm. However, there are times when newer, more complex alternative energy technologies are considerably more efficient, safer, or cheaper than their old-fashioned counterparts. One example of this is the submersible pump versus the surface pump; another is solar electric lighting (which require a battery) versus candles or oil lamps (which are a fire hazard). However, these more complex technologies- or the means to ship them- might some day be unavailable or prohibitively expensive. This is why, in the face of peak oil and economic distress, having access to several levels of technological complexity will be to our advantage.



*Processing cucumbers for seed.*

## Seed Harvest Season

August and September mark the peak of harvest season for many gardeners, and seed growers are no exception. Every Saturday this month we are out in the gardens harvesting watermelons, cucumbers, squashes, tomatoes, beans, and sunflowers. In order to save the seeds, some vegetables, including beans, sunflowers, and corn, must simply be laid out to dry before going into storage. Others, such as members of the cucumber family and tomatoes, should be fermented for a few days to improve germination. After fermentation the seeds are wet and require prompt drying. A simple solar dryer with no forced

air circulation would work in some conditions, but we need to be able to dry seeds in wet weather as well. This is why Jon built us a seed drying rack fitted with a belt-driven blower, which is run off of a 180V electric motor that can be powered by our new solar array. The solar panels can provide enough power even on cloudy days to run the blower. In upcoming years the drying rack will be suitable for food preservation as well.

## How to Get Involved

Living Energy Farm is on its way to becoming a practical model for our post-fossil fuel future. Your support can help make it happen. Consider coming out for a Saturday work day, or donating tools, building materials, or funds. All donations are tax-deductible. For more information see our website [www.livingenergyfarm.org](http://www.livingenergyfarm.org), or contact us at [livingenergyfarm@gmail.com](mailto:livingenergyfarm@gmail.com) or 434 409 6006.