



**Year Built** 2005/2006  
**Home Size** 5350 Sq.Ft.  
**Contractors:**  
 Dave Brown  
 Hughes Construction  
 SolSource  
 Major Geo Exchange  
 Comfort Insulating Systems

## Debbie Lane-Steve Szabo

# Efficient and State of the Art

**Debbie Lane & Steve Szabo**

When we decided to build a new home, we knew we wanted some of the same features we had in our existing home, since we are organic growers.

We also wanted to incorporate energy efficiency and utilize state of the art technology in the construction of our home and out-buildings. The complex consists of the residence, a garage / workshop, chicken coop, and a greenhouse.

The five acre building site we purchased had a farm house with 7 outbuildings. Prior to the demolition of the existing structures we offered the reusable structural materials to people that had a need for them. Several people salvaged a sizeable portion of the floors and walls.

The site has several large trees that were protected during construction. We positioned the new house to take advantage of shading.

With the exception of the chicken coop, all buildings are framed on the exterior with 2"x 6" lumber and are sprayed with 5 inches of Thermal-Stop polyurethane foam. This type foam has zero off-gassing and no VOC's.

For our heating, cooling, and hot water needs we decided to use a geo-exchange system. The only supplement to this system is an on-demand tankless gas heater for the hot water. It boosts the 100 degree geo system hot water from 100 to 120 degrees.

We have been living in the home for 5 months. With the data collected to date via our own kW meter we are estimating a \$790.00 energy bill for heating, cooling, and hot water for the year. This includes gas for the hot water heater supplement.

We also installed a 6.3 kW grid tied PV system. We decided not to utilize a battery back-up, since our electric supplier had reliability issues at the time we installed the system. Instead we installed a 54kW natural gas fired emergency generator that is capable of providing the entire peak load to the house.

- ### ENERGY FEATURES
- 6.84 kW grid-tied PV system
  - Geoexchange system for heating, cooling and hot water
  - Ever Flow on demand hot water booster
  - Energy Recovery Ventilation (ERV) System
  - Thermal Stop R.36 foam insulation
  - Triple-pane Pella windows with integrated blinds

- ### WATER FEATURES
- Low water plants
  - Netafim irrigation system

- ### RE-USE/SALVAGE FEATURES
- Saved all shade trees from previous property



**Debbie & Steve**