

Residential Project Spotlight The Home of Chuck and Helen Campbell



“When we built a new home in Black Mountain in 2007, energy efficiency was a priority. We consulted with Dave Hollister with Sundance Power Systems. Dave helped us design a hot water system, as well as a photovoltaic electric power array. We wanted a partial battery backup system for the necessities – well water, in-floor circulating pumps for heat, and the kitchen appliances. The backup system works like a charm, and has come in handy lately with the recent power outages. “

Project Description

The Campbell Residence smartly takes advantage of solar energy through multiple systems that, combined with other efficiency measures, provide for comfort, energy savings, and security for years to come.



Solar Thermal

The 5 collector solar thermal system cleanly and efficiently provides heat energy to the domestic hot water system, the radiant floor heating system, and also a hot tub. To store all this energy for use when it is called for, a 300 gallon storage tank sits in the mechanical area of the basement, where all of these systems integrate through a VersaCor distribution panel.

System Overview

Location: Black Mountain, NC

Date Completed: December, 2007

Design: Dave Hollister of Sundance Power Systems, Inc.

System Components:

Solar Thermal System

- ~ 5 AET 4' x 10' Solar Thermal Collectors
- ~ A 300 Gallon Custom Storage Tank

Radiant Floor Heating System

- ~ A 6 Zone VersaCor distribution panel with an expansion tank- Manufactured by Sundance Power Systems
- ~ Raupex Tubing
- ~ Pro-Balance Manifolds
- ~ A Prestige Solo High- Efficiency Propane Boiler
- ~ A 120 Gallon Domestic Hot Water Tank

Photovoltaic System

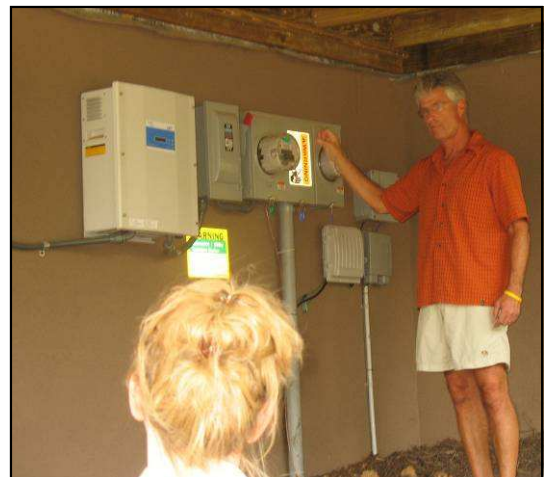
- 7.02 kW Grid-tied System
- ~ 54 Kyocera 130 Modules
- ~ 1 SunnyBoy 6000 (240V) Inverter Backup System:
- ~ 1 Sunny Island 4200 watt back-up inverter
- 8 Rolls 6 963 Amp hour batteries



Solar Electric

The home's electrical load is met with a 7.02 kW solar electric system. This array sits upon a ground-mount that overlooks the pond, perhaps taking advantage of the light reflected from the water.

Interconnecting with Progress Energy's grid allows for the Campbells to become generation partners with NC GreenPower which offers financial incentives for the renewable energy credits produced by the system. A battery back-up system stays charged so that the house isn't without power, even when the utility is down.



"From design, to installation, to fully operational, Sundance was great to work with in every aspect of construction of our home. The employees are knowledgeable, professional, friendly, and willing to do whatever it took to make our installation the very best.

I would recommend Sundance to anyone looking for the 'best solar company in the south-east.' ~ Chuck Campbell, 2009