Going Green—D'Antonio Residence

Showcase of Energy-Efficient and Green Design

by Peter and Karla D'Antonio

Peter, Tristan, and Karla D'Antonio

SPONSORED BY:

SimpleSolar electric systems

Our Going Green remodel involved the revitalization of a Boulder County solar home. The result is a beautiful home that generates nearly as much energy as it uses. The original Cape Cod–style home is 3,000 square feet, designed in 1986 by Acorn Structures of Concord, Massachusetts. In 1998 a 1,000 square foot addition to the principal residence and 500-square-foot guest house were constructed. Our home is rich with ambient light and a joy we share with friends and family.

We purchased the home in 2007 and completed a cost-conscious remodel project. The project serves to exemplify best practices for an energy-efficient, green remodel. Peter, an award-winning building energy consultant with PCD Engineering, is the engineer of record for four residences featured on past solar home tours. This near-net-zero energy remodel was an opportunity for Peter to showcase PCD Engineering's designs on a more personal scale, and for our family to harmonize with values that are important to us.

Energy use is tracked at the home. The residence generates nearly 100% of its energy from renewable sources. As of May, 2008, the home has generated a surplus of nearly 1,000 kWh, which helps offset most of the supplemental gas used. During our first winter in the residence, we lived comfortably, and the backup heating system was used only three nights.

Remodeling existing homes for energy efficiency, of course, presents more of a challenge than new construction, but it also presents opportunities. Of the over-111 million housing units across our nation, the number of existing residences far exceeds the number of new homes and offers a tremendous opportunity for energy conservation and application of environmentally-friendly retrofit practice. It's never too late to go green.

Going Green, just as our lives, is a work in progress with more upgrades planned. Life is a series of choices, and with each choice we make we have an opportunity to make a difference in our health and the health of our environment. From the food and food packaging we purchase to the cars we drive, there exists the opportunity to close the cycle and reconnect the chain. Each day we learn new ways to reduce waste, lessen nonrenewable energy use, and reconnect with the natural cycle of life, such as composting and adding a vegetable garden to our daily routine.

We look forward to meeting you and sharing our experiences.

Year Built, Extended, Remodeled: 1983, 1999, 2007

Home Size: 4,000 sq. ft.

Contractors:

- EcoBuild (Carpet)
- J.W. Sawyer (Architect for the extension)
- Next Generation Energy (Solar Thermal System)
- PCD Engineering Services (Engineering and Design)
- Rocky Mountain Foam (Insulation)
- Simple Solar (PV System)
- Smartworks (General Construction)

Energy Features

- Residential Energy Audit Program (REAP)
- Passive solar design
- 4.1kW PV system
- Solar thermal system for space heating and domestic hot water
- Spray foam insulation
- High-performance Alpen windows
- CFLs throughout
- Sealed combustion, high-efficiency boiler for backup domestic water heating
- Natural ventilation, ceiling fans, and evaporative cooling

Green Features

- Low-VOC paints
- Water-based hardwood floor sealer
- All natural, biodegradable, wool carpet
- Nontoxic, all-natural cleaners

Water Features

- Xeriscape
- Electric lawn mower
- Yard trimmings are converted to mulch
- Low-flow plumbing fixtures
- Drip irrigation

Re-Use/Salvage Features

- Over 50% of construction waste was recycled
- Existing solar collectors were deconstructed and recycled
- Deconstructed items were donated to the ReSource Yard