

Three Environmental Success Stories

by Stephanie Odell

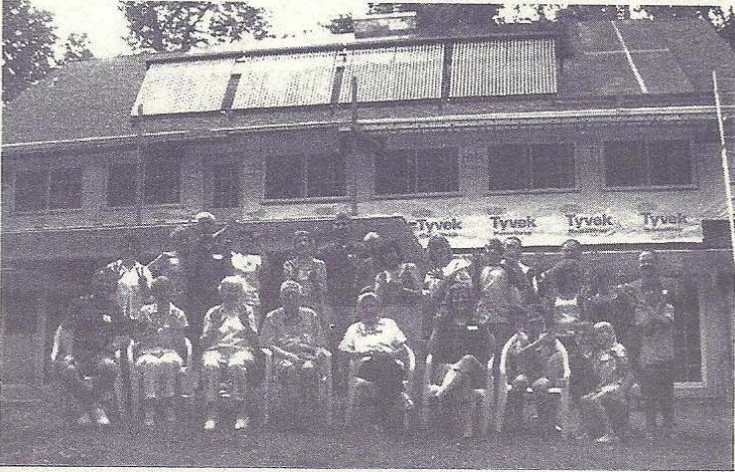
Three success stories from committed environmental activists help show how people can work together using cutting-edge technology and old-fashioned ingenuity to create environment-friendly buildings that are a pleasure to live and work in.

Jan and Alan Rushforth's Home

On a rainy spring day in 2005, Alan Rushforth went to a community showing of the movie *The End of Suburbia*, and he returned home on a mission.

"If M. King Hubbert was correct about "Peak Oil" and the coming end of plentiful, cheap oil that our entire society depends upon, I wanted to take specific lifestyle decisions to reduce our dependence on fossil fuels and reduce our carbon emissions," he said.

The movie is a 2004 documentary about what will happen after oil production peaks and begins to quickly dwindle, and the implications this will have



Gathering to celebrate at the Rushforth's new home.

on the suburban American lifestyle. Alan and his wife Jan live in Bryn Mawr, Pa., a suburb of Philadelphia. Their ranch home was built in the 1960s, and it was due for several upgrades, including a new roof. With some careful planning, they decided to make their home sustainable and green.

They began by digging out the foundation of their house, installing new exterior foam insulation and stucco on the exterior, and adding a new super-insulated second floor. On the new second-floor roof that was now higher than the shadows cast by the trees, they installed a five-kilowatt photovoltaic solar panel system that cut their electric bills by more than half.

In previous winters, Jan and Alan could use up to 1,100 gallons of heating oil. To end this habit, they installed a clean-burning wood gasification central boiler, and a solar hot water heating system that contributes some extra heat on sunny days. The Rushforths managed to reduce their oil use to a mere few gallons a year!

To supplement the solar hot water and wood heat, they installed a large rooftop solar hot air collector that throws extra warm air into Jan's office and helps heat part of the house on sunny winter days. In summer 2007, the Rushforth's hot bath water was 100 percent heated by the sun, and the electricity bills were down to about \$5 per month. They also purchased no fuel oil.

The rooftop photovoltaic system was quite expensive to install, but the price was mitigated after they qualified for one of the last Sustainable Development Fund grants awarded in the Philadelphia area. The Rushforths feel that the energy efficiency and solar investments in their home were worthwhile, educational and hopefully inspirational.

"I don't know if others have renovated their own homes yet based on what we've done, but a lesson we can relay is that it is neither easy nor cheap to

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do a major energy retrofit on an existing home," Jan said. "The best time to incorporate these features is when the house is being built."

Alan's passion continues as he encourages others to save energy on domestic hot water. They have started a business, Rushforth Solar LLC, for cost effective solar hot-water systems for large buildings that use a lot of hot water, like apartment buildings and hotels.

"We're trying to build more momentum for reducing fuel use and carbon footprints for heating water in those larger buildings," Alan said. "We don't attempt to solve all the climate change and peak oil problems, but our motto lately is, 'Do something.'"