

# My Energy Journey

I never originally intended to build a new home, let alone a house that is one of the most energy efficient in the state. My journey began in 2003 with a project that was proposed to me by the Plant Manager of the Toledo Museum of Art, Paul Bernard. I held the Chief Operating Officer position and it was my responsibility to vet such project proposals. My primary motivation at that time was to reduce operating costs for the Museum. The first major project was the installation of four 60 kW gas-powered Capstone Microturbines that produced electricity. The waste heat from the microturbines is used to heat water for use in the Museum's heating/cooling/hot water systems.

The success of that project whetted our appetite to explore new ways to look at our energy needs, which are very demanding in a 250,000 square foot, 100 year-old facility. In 2006 Paul and I met with John Witte, principal at Advanced Distributed Generation (ADG), and Chip Hambro, First Solar, to discuss a 100 kW PV system for installation on the roof of the main Museum building.

Thanks to a grant from the State of Ohio Department of Development and a loan program offered through Huntington Bank, that system was installed and implemented in 2008.

Throughout the process of implementing the project I was continuously researching energy efficient systems and new technology as it related to the Museum. On a parallel track, I had decided to move to a little larger home and was exploring options with homes on the market in the Toledo area. I had chosen the Monclova Township/ Holland area as a primary target for relocation. I would spend some time each weekend driving around in this area looking at homes for sale. I just happened upon the Deer Valley subdivision one

Sunday and saw a model being shown by Decker Homes of Lambertville, Michigan. The Decker Homes model had Unisolar, building-integrated solar shingles on the roof. I had researched this product, but this was the first application of the technology I had seen and was excited that it was in the Toledo area.

I toured the home with a friend, was very impressed with the energy efficiency integrated into this home, and had to meet the person behind this unique building. Bill Decker, Sr. is a man who is passionate about renewable energy and energy efficiency. He and his family at Decker Homes have built homes and a reputation as a builder on the virtues of excellent craftsmanship and energy efficiency. Once I met Bill, I knew with confidence that it was the right thing for me to build a new energy efficient home. All of the research that I had done for the Museum and for my personal education about renewable energy, energy efficiency, and sustainability came together in the building of my new home. Bill Decker, Sr is very knowledgeable about ways to reduce

energy usage and, once we talked about what I wanted to accomplish with my new home, did additional research into the best systems. I won't deny that it is more costly to build a home with energy efficient features. However, that upfront capital cost will be more than repaid over the time I plan to live in my home. This is the last home I intend to own, and I look at that capital expense as prepaying my utility bills!

I incorporated the results of all my study and research into this home. First, I chose a builder, Decker Homes, that believes in energy efficient design. Decker Homes only builds Energy Star-rated homes and each project begins with a well insulated, efficient building envelope which reduces energy consumption by about 30%. Then I chose to incorporate a horizontal loop geothermal heating, cooling and hot water system. This system reduces the energy demand by about 30%. Every light in my home is either a compact fluorescent or LED fixture, reducing energy consumption by over 50% from traditional incandescent lighting. Finally, I installed a 1.98 kW Sharp PV system of 14 solar modules on the roof. Once completed my home was given an energy audit to test the efficiency. I am proud to say that my home achieved a HERS (Home Energy Rating System)

score of 35, which give it a 5+ Energy Star rating, the highest rating possible on this scale. However, I am far from finished. My ultimate goal is to achieve zero net energy usage annually. I am planning to expand my PV system by another 2.3 kW, which should bring me very close to that goal. I am able to do this because of the current incentives available through a State of Ohio Department of Development grant and the federal government's 30% tax credit programs. These programs greatly reduce the payback period for the system and make it more affordable for a larger percentage of the population—people like me!

I have now lived in my home for 10 months. The original estimated total energy cost for my home was a little less than \$1,000 per year on average. Despite the long, unusually harsh winter we had this past year, it appears that I will beat that estimate. And what is it like to live here? I enjoy comfort, quiet and peace of mind that I am doing the right thing for myself, my environment, and for future generations. It has to start somewhere with someone, and I want to be among those who set the example.

By Carol Bintz



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ONE HOME AT A TIME."

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