

# Green dream home

## House is designed to save energy, money

BY LAUREL FIRANT  
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Conserving both environmental and financial resources was a priority for the Henig family in building their new home. "It was very, very important for us to do it as green as possible, as energy-efficient as possible ... and the budget was extremely important," said Itzik Henig, who helped design and construct his Lodi Township residence.

Planned with the needs of his wife, 11-year-old daughter and 18- and 20-year-old sons in mind, the 2,600-square-foot house located at 3417 Zeeb Road has four bedrooms and three-and-a-half bathrooms, plus an additional 600 square feet of living space over the garage.

Built on their 40 acres of farmland, the house is next to 14 acres of deciduous forest. Henig and his wife, Amira Tal-Henig, carefully calculated the orientation of the house, determining celestial north by marking the location of the North Star themselves. That was done to maximize the home's southern exposure.



Itzik Henig and Amira Tal-Henig sit in a shaft of sunlight pouring through one of the several large windows on the south side of their new home on Zeeb Road in Lodi Township.

Most of the windows face south and look out on the nearby forest. The trees help regulate the amount of sun the home receives, with more light passing through the branches and windows in winter. The sunshine also helps warm the radiated-heat basement floor, which serves as a thermal mass.

The home's walls are 6 inches thick (2 inches wider than the code dictates), and state-of-the-art insulation of the walls and roof and Energy-Star-rated windows help maintain the home's temperature. Photovoltaic panels will be installed in the future to capture more solar power.

The home's geothermal heating and cooling system includes five 1,800-foot loops installed 5 to 6 feet underground in front of the house. The apparatus transfers heat like a



The geothermal ground loop is laid in front of the Henig home on Zeeb Road in May 2008. The system transfers heat like a large radiator in the soil.

large radiator in the soil, where the temperature is constantly about 55 degrees. It provides a cooling sink in summer and a source of heat in winter. The system cost \$25,000, and the Henigs hope it will eventually save them about 50 percent to 60 percent on utilities.

The interior of the home is designed to have as little surface area and as much volume as possible to conserve heat. The upstairs bedrooms feature loft-style sleeping areas and open onto a walkway above the living room.

Henig, who is a mechanical engineer with a background in thermodynamics, was intensely involved in the planning and building of the house. "We knew what we wanted and honed the design with *Pierson-Gibbs Homes*," he said.

Pierson-Gibbs converted the Henigs' design concepts to drawings and assembled the home's shell. The Henigs hired the tradespeople needed to further construct the house based on the builders' recommendations after they gathered a few bids for comparison.

Henig served as the general contractor as well as a part-time participant in the construction. He worked on plumbing, ceramic tiling and drywall, and the installation of the hard-wood flooring, cabinets and the basement floor radiated-heat system.

A well for the home was dug by Ann Arbor Well Drilling and a sand-filter-and-trenches septic system was designed

and installed by Washtenaw Engineering Co. The total cost of the home was in the mid-\$300,000s.

The Henigs moved into their house in March. The couple plans to stay there well into their later years, and the home's design reflects that. "Our bedroom is on the first floor. We have everything on one floor so we could stay here," said Amira Tal-Henig. "We wanted low maintenance, high quality."

Winter wheat is grown on their land, and horses from a nearby riding school graze on 10 acres. Henig has been working on his property with a farmer, where they have also cultivated soy and corn. The family intends to maintain and develop the land as an operating farm. They are bringing two old apple trees on the property back to life, and plan to plant more fruit trees and a vegetable garden. In addition to their pet dog, they have 17 chickens, including two guinea fowl that also serve as noisy "watchdogs."

"We live in such a wasteful society," Henig said. "We have to go back to a sustainable way of life. There's so much we can save on. If we insulate a lot, if you wear a sweatshirt in the winter ... you can save a lot of not only money, but resources."

And, he said while walking through his newly completed home, "It's not always that one is so fortunate to be able to build one's own dream."



Itzik Henig and Amira Tal-Henig's 11 year old daughter, Alona, in her upstairs bedroom in the family's new home.

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