

The geothermal way to save on energy bills

By Suzie Schottelkotte

Mulberry – When Jack Hathaway’s electric bill began averaging more than \$200, he decided that he’d had enough. But he wasn’t about to sacrifice his air conditioning, so he began looking for ways to reduce his energy costs. Hathaway believes he’s found his answer in eight tons of coiled plastic tubing, measuring 8,000 linear feet, buried four feet under the ground. “It’s a geothermal system,” said Hathaway, 48. “My goal is to have an electric bill that’s less than \$25, and I think that’s going to happen.” With Hathaway’s existing 1,590-square-foot house in Mulberry, reaching that goal seems plausible. But he’s adding an estimated 3,700 square feet of living space onto the back of his home and with a second floor, which creates a greater challenge. “We’re going to be building the addition using polystyrene foam blocks, which are highly efficient for energy,” said Hathaway, who lives at 3045 Dove Lane. “

Combining those together (with the geothermal system) should make for a very efficient house.” Jay Egg, a Tampa contractor who’s installing Hathaway’s system, said that the average geothermal system reduces a homeowner’s electric bill by half. “By comparison, the geothermal system costs about twice as much to install,” Egg said. “But you make up the difference in energy savings, most of the time within a few years.” The system costs about \$11,000 for a 3,500-square-foot home, compared to an estimated \$6,000 for a standard central heat and air system or heat pump. Geothermal technology isn’t new, said Egg, president of Egg Systems Inc. in Tampa. “The technology has been around for quite awhile,” he said. “It’s been used quite a bit up North, but it’s gradually becoming more popular here.”

The system circulates water through underground pipes that ultimately carry water through the home’s air transfer unit. In the unit, the water either heats or cools the air that’s blown into the home, depending on the season. Since the lower ground in Central Florida, beginning at three feet below the surface, maintains a constant temperature of 72 degrees, water passing through pipes in the ground is heated or cooled to that temperature. “You can also tie in a hot water tank to this system, and use it to heat your water,” Egg said. The water circulation system is closed, meaning that the water never leaves the pipes, he said. “We’ve had people ask about leaks,” Egg said. “These pipes are made of high-density polyethylene, the same material that’s used for natural gas distribution lines. We use heat fusion to join the pipes. “Basically, you’re looking at a 300-year life span for this material,” he said. John Currier, manager of energy services for Tampa Electric Co., said that the utility has endorsed geothermal technology. “We think it has a lot of promise,” he said. “It’s a renewable resource because it’s a closed system coming out of the ground, and it reduces energy costs by as much as 50 percent.”

Instead of manufacturing the warm or cool air, as with conventional units, the system uses the ground to adjust the temperature, then blows the air into the home. “The only down side is the cost,” Currier said. “But it makes up for that in the low operating costs.” Ed Goggans, service manager for Lineberger Heating and Cooling Inc. in Lakeland, agreed that geothermal systems hold promise. “It sure sounds like a good system, and it wouldn’t require much maintenance,” said Goggans, whose company installs conventional heating and cooling systems. “I think we always need to look at new technology with an open mind.”

Hathaway said he’s had no second thoughts about installing a system at his Mulberry home. “I’ve known that it works, because my sister (in Highlands county) has been on a system like this for 15 years,” he

said. "They've never had a problem. They have a really large house, and their utility bills are never more than about \$90." Hathaway expected to have the pipes installed this week, then he'll begin construction on his addition. "I'm hoping to have the roof on the addition by the first of the year," said Hathaway, a retired sales manager for Motorola, "if the weather cooperates." Because of the size of Hathaway's addition, he's installing one air transfer unit for the existing house and a second unit for the addition. That will give him more temperature control in different parts of the house, and allow him to close off those areas that aren't being used. The cost for the second unit, Egg said, is about \$1,200. "You don't have to install a separate unit, though," Egg said. "You can do a zoned system with up to 20 zones per unit. But some people choose to have a second unit because it does afford greater control, and there's less energy loss."