

THIS WAY FORWARD

THE BUILDING BLOCK



The drilling rig for Ramsey Medical's vertical, closed-loop geothermal heating and cooling system, in Ramsey.

Going Geothermal

>>> *Harnessing the earth's temperature can provide a basis for heating/cooling buildings and homes.*

By George N. Saliba, Managing Editor

Few people seem to be aware that former President George W. Bush has a geothermal heating and cooling system in his home, as does former Vice President Al Gore. In fact, overall, geothermal heating and cooling systems might be one of the most under-publicized forms of renewable energy.

For a vertical, closed-loop geothermal system to operate in New Jersey, one must drill 500 feet below the earth's surface, where the year-round temperature is approximately 54 degrees. Then, pipes are laid to bring a water-and-antifreeze solution down to the earth's depths – and also to pump it to the surface, where a home or building is located. In the summer, the 54-degree water/antifreeze helps cool a home or business. In winter, the water/antifreeze is “compressed,” bringing its temperature to 120 degrees. This hot solution can then be used to heat a building or home.

The initial cost for installing geothermal is about double that of conventional systems, according to

David Goldsholl, president of Glen Rock-based Eastern Natural Resources Group, Inc. (ENRGI). However, a homeowner may access a 30 percent federal tax credit on the complete cost of the system, while a business has the option of a tax credit, or, via a grant, it may receive a check for 10 percent of a system's total cost. A business also may access a deduction if its building is energy compliant.

Goldsholl adds, “There are some tax credits available through the state, but nothing really large that stands out. Also, the state is currently going through changes, with a lot of things being modified, so you really can't

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count on [credits] being there when you are going to ask for them.”

Regardless of the upfront cost, homeowners might reduce their heating and cooling bills by approximately 70 percent each year via geothermal, while businesses might see savings of about 50 percent. Although energy prices have stabilized in New Jersey during this economic downturn, they doubled in the eight years prior. Goldsholl asserts that energy prices will rise in the future, and, therefore, geothermal systems will increasingly make economic sense.

For an example of brand new geothermal construction, look no further than Ramsey Medical in Ramsey (Bergen County). With occupancy anticipated for as early next month, this three-floor, 32,000-square-foot building at 470 Franklin Turnpike had its vertical, closed-loop geothermal heating and cooling system installed by ENRGI. Other notable geothermal systems in the Garden State include those at Princeton University, Ramapo College and the Morristown Parking Authority.

Goldsholl concludes, “The bottom line is that if someone doesn't know a neighbor or a friend installing geothermal, they are a little skeptical about it. They [feel they] are like the neighborhood guinea pig. They have heard the technology might work, but they say, ‘I don't know anyone else who has installed it.’ People need to hear and read about [geothermal] more, and not just in trade magazines. They need to see it in newspaper headlines and hear it on the radio or T.V. I think once that starts to happen and [geothermal] gains momentum, people will begin to shift.” **NJB**