



## Geothermal systems make schools more energy efficient 5 buildings use technology that also helps environment

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SALISBURY -- Wicomico County schools install geothermal heating and cooling systems that allow for decreased operating and maintenance costs, in addition to helping the environment.

"When you look at the big picture, one of the advantages is conserving the planet," said Robin Holloway, board president.

Geoexchange technology uses the earth's renewable energy, a few feet beneath the surface, to heat or cool a home or building. Geoexchange takes advantage of the earth's constant temperature -- ranging from 45 degrees in northern latitudes to about 70 degrees in the deep south year-round -- to provide extremely efficient heating and cooling. So far, North Salisbury, Willards, Westside Intermediate, Westside Primary and Prince Street Elementary schools have these systems installed, while the new James M. Bennett High School is well on its way.

Charlie Bounds, assistant superintendent of Administrative Services, said the geo-thermal system consists of a series of underground pipes (5 feet below the surface) and wells (300 feet) that circulate throughout the school.

"It takes heat from the ground and that circulates well to well," he said. "It's a closed loop."

In the winter, water circulating through pipes absorbs heat from the earth and carries it into the school. The Geoexchange system inside the school uses a heat pump to concentrate the earth's thermal energy and then transforms it to air circulated through standard ductwork to fill the interior space with warmth. In the summer, the process is reversed. Heat is extracted from the air in the school and transferred through the heat pump to the ground loop piping. The water in the ground loop then carries the excess heat back to the earth.

"You don't know these are there, they're underneath parking lots and athletic fields," he said.

Older schools have large boiler rooms that take up space and require a lot of maintenance, Holloway said. Bounds said they still have a mechanical room for the piping, but there is one important factor that makes this process environmentally friendly.

"There's no fuel tanks to store," he said. "We're not burning fossil fuels." According to the Geothermal Heat Pump Consortium -- a nonprofit organization working to raise awareness and increase the use of Geoexchange technology -- nearly 600 schools in 39 states enjoy the benefits of Geoexchange.

Bounds said one of the main reasons Wicomico schools considered the system is because of the large number of companies that are getting involved. He claims the cost of installation is only slightly higher than the average heating and cooling systems. "(Long-term) it's probably close to the same," he said. Holloway looks at the overall benefits.

"Our schools last 40 to 50 years, and we want a system that's long-term energy efficient," she said. "Geothermal is also a safer system with the density of kids around."