

After living in the big city for 39 years, and after three years of planning, the new decade began for William and Barbara Lamb on February 9th, 1990.

In the rolling countryside of Grimes County, seventy five miles northwest of Houston, the Lambs for 20 years, had spent weekends in a pine and cedar cabin by a pond in the woods. Retirement from a 35-year career as a surveyor started Mr. Lamb working on plans for a permanent home nearby. The type of house would be dictated primarily by the climate. The piney woods of East Texas have a well-deserved reputation of staying hot through the summer although the winters are mild. The biggest consideration would always be keeping cool rather than keeping warm, although there are many days in the winter that reminded them of their childhood in Iowa.

From the outside, and in most of the interior, the house appears to be what it is, a comfortable country place with a touch of Victorian look. What is different about it is the use of natural convection currents inside that keep it cool in the summer and warm in the winter. Rather than a concrete slab underlying the main structure, the foundation is pier and beam with a crawl space big enough to sit up in. The interior of the house is surrounded by an exterior "envelope", resulting in a house within a house, sometimes called a double envelope. The north wall is a double wall, separated by one foot of air space, which serves as a chimney for the warm air from the natatorium on the south side that has risen to the attic to fall, through natural convection to the coolness of the crawl space below. The air is then re-cooled as it passes across the cooler earth, enters the pool room, and completes the cycle by rising again to the attic. In the winter time the flow of air is reversed, using the naturally warmer temperatures of the ground to help warm the house.

Supplemental cooling and heating is used as standby during extremes of both hot and cold temperatures. However, the goal of reducing heating and cooling costs has been achieved, and even on the hottest days the house remains comfortable with a minimum of work from the heat pump.