The House that Van de Water Built

By Karen Heller

Coming over the hill past the blinking light on the Russell Road, one might notice a new stone house with a two car garage sitting back from the road on the left side. Or one might pass it by and not notice. From a distance the Van de Water's new house doesn't reveal how exceptional it is.

Upon closer inspection coming in the driveway it is still hard to tell why the house is so exciting. It looks like a stone house with light shining out the windows and a wooden garage. But we have heard that the Van de Waters have built themselves an energy efficient home, so maybe the inside will look different and give us a clue.

After meeting three Van de Water children and family dog, the question is where do we begin? I look around for some hidden solar contraption or panel. What I see is a simple wooden kitchen table, large wooden counter and big rustic beams lining the ceiling. It looks comfortable and homey. 'Those big beams provide wood mass and help retain heat,' Peter Van de Water explains. And that begins our tour of the house.

There is no single simple answer to how the Van de Waters heat their home efficiently. We sit down at the kitchen table and Peter explains that it began five years ago before the house was built, when he and his builder Bill White, 25, (an ex-St. Lawrence Student) first studied the site they were going to build on. They noticed that the prevailing winds came from the west. So while planning and constructing the house, they turned the two longest walls parallel to the wind and built a garage on the west side with a slanting roof that directs the wind up and over the house. Then they planted forty trees on the west side of the house.

Our tour continues with the windows. "You lose most heat through the windows,' says Peter. So the windows are thermapaned and the ones on the north and west sides are triple-glazed. Most of the windows face south.

This way, the house gets solar heat on sunny days, "Especially in the winter when the sun is low in the windows," explains Peter. "It can be thirty degrees outside and with the sun reflecting in, we don't need to put any fuel in our wood stove."

From the kitchen area we walk into the living room area. The couches, fireplace and thick rug look inviting. We note the large fireplace which also provides mass and some heat. (although its main function is mood and beauty) and move on to the stairway to the basement.

We can feel the heat coming up the steps. It is emanating from a small twenty-two inch wood stove. Next to the stove is an indoor wood shed and next to that is the wood furnace. On the day we are visiting the Van de Waters there is a hint of Spring in the air, so they don't need to use the big furnace.

The basement is an interesting floor. There's the piano, ping pong table, an antique oxen yoke, snowshoes, and Peter's son Tom sitting comfortably on the couch, trying to get some work done. But the basement tells us a lot more about the house.

First we learn that the house is heated on about fifteen cords of wood a year, cut from a nearby woodlot. "I love wood heat, Van de Water claims. "It's easy to control and it heats evenly, unlike oil which comes on with a surge and the heat goes up and down. With wood heat we're warm all the time."

Then we go outside the double doors Peter uses to bring his wood in and we examine the south side of the house. On the north, west and east sides the basement floor is surrounded by dirt. The soil keeps a constant temperature of 48 degrees Fahrenheit all year long. The south side stays exposed to sunlight. This method of insulating with dirt is called berming.

Coming back inside, we go back around behind the wood furnace to the hot water tank, and (could it possibly be?) an oil tank. Peter explains the hot water heating system. The furnace heats water in the winter and oil is used when the furnace isn't on. And here lies the total cost of heating the Van de Water's house: half a tank of oil PER YEAR, or 125 dollars, or two and a half cents a week. The facts speak.

"When we lived in town, in a big old house," Peter says, "we paid exhorbitant energy bills." Peter also used to spend a lot of his time maintaining the outside wood on the old house. The beauty of the stone exterior says Peter is more free time on weekends. Other benefits of the new house include well water with less chlorine, and land for a summer garden.

Next to the half empty oil tanks we see wood planks with a yellowish foam in between. Van de Water explains that the house was built with two-by-sixes (versus traditional two-by-fours) in order to leave more space in between boards for insulation. The whole house is insulated, most of it the controversial Urea Formaldahyde foam. Today it is questioned whether this foam cuases upper-respiratory disease. But when Peter researched insulation for his home five years ago, the foam was recommended in a N.A.S.A. U.S. government publication.

The trick it seems, is not to burn a better substance in a new way, but to keep the heat already generated in. What's incredible," says Van de Water." are these big old farm houses with no wind break, or new houses being built with a two-car garage on the south side and a view of the road on the north. Probably people and architects don't even know. An Architect living next door when we were building was always coming over and asking "why are you doing this or why are you doing that." The answer is simple energy efficiency: keep the heat in and the cold out.

The Van de Water's new house stays between 63-70 degrees. In four years of living there they haven't had any problems. And at 125 dollars a year, that's an impressive record.

"But how did you find out about all these energy saving methods in the first place," we ask as we head back upstairs. We take a quick look at the third floor: the two bedrooms and bathroom, and say good-night to daughters ready to go to sleep, before we head downstairs to the kitchen table for more answers. The house provides plenty of room for a family of five, but next year when two children will be in college the third floor will be blocked off, keeping in more heat and saving even more energy.

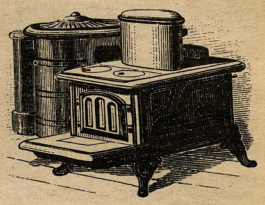
Sitting down at the table, Peter pulls out several books. Among them are titles such as "The $50 and Up Underground House," by Mike Oehler and "Your Energy Efficient House," by Rex Roberts. There are a lot of books on the subject and Peter has bought a few of them at the S.L.U. bookstore.

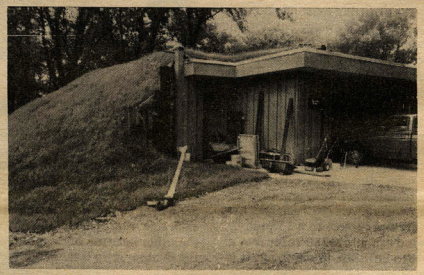
"I would love to sometime design a standard energy efficient house," Peter says. Built with green lumber, on the side of a hill, you could probably build it for the same cost as a trailer.

Peter and his family have learned a lot about heat efficient homes since they decided to build their own. We look at a scrap book filled with pictures of the house as its building progressed. The stone used for the house was originally a pile of rubble on the property until each stone was shaped with a few knocks from a geologist's hammer. "And there's Bill White cutting a rock," and "the girls in front of the house." The house took a year to build.

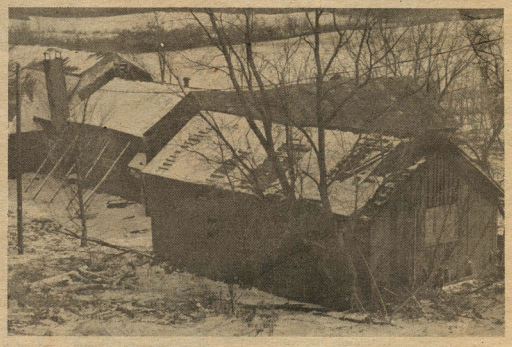
Building their own house must give the Van deWaters a real sense of the building being their home. During the summer Tom had a full time job helping to build the house. Peter likes to discuss ways he might have planned the house differently if he could build it over: like not use Urea Formaldahyde, plan better heat circulation and have more immovable windows.

But the house is doing well the way it is. It looks good inside and out, and due to the Van de Water's care and planning they have a house that should protect them from an energy crunch of the future.

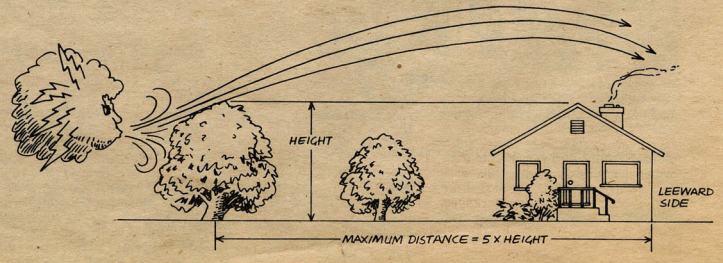




Example of berming



Photograph by Ellen McCurdy



Tall, dense vegetation makes an effective windbreak.