



Solar home II: Where the energy is

By Yale Lewis

Last week's article looked at the energy "dream house" of Peter Oxford, who lives about eight miles south of Middlebury, and examined the various factors a potential solar homeowner should consider. In this conclusion of the two-part series, Yale Lewis explores Oxford's use of intermittent energy sources.

The final step in the construction of a solar home is to make use of all available intermittent energy sources. Energy consumption can be ranked on a sliding scale according to proximity to basic human needs — food, clothing, and shelter. Various

'Use more sophisticated energy types only for the jobs they do best.'

energy sources are appropriate for different energy uses. Oxford's maxim is to "use more sophisticated energy types only for the jobs for which they do best;" in other words, electricity and fossil fuels should be used only for entertainment and transportation.

Shelter

The most basic function of a house is shelter. For modern man, especially in Vermont, the need for shelter has become a need for heated shelter. Oxford heats his house primarily with passive solar gain. The southern wall, therefore, is the most critical feature of the house. It is designed for maximum solar penetration in the spring and fall, and minimum penetration in the summer.

Solar gain is a function of the angle of the sun relative to the pane of glass: the closer the sun is to ninety, the more gain and less reflection. In the winter, the sun shines low over the horizon — almost ninety degrees to the wall. In the spring and fall, the sun shines at about forty degrees. As the sun rises higher in the horizon during the summer, more of it is reflected off the skylight and the house stays cool.

As an auxiliary heat source, Oxford burns wood. "I only burn three cords a year and much of that is for cooking. Cutting wood on this scale is good exercise," says Oxford, "although much more would be work. I used to have a sign on my cutting board that said: 'cutting wood warms you twice — once when you cut it and once when you burn it.'"

Food

The next energy requirements are for water heating, cooking, and food storage. Oxford cooks on his wood stove. "It took about a year to get really good at it," he says, "but now I can cook anything — turkeys, quiche,

bread, you name it." Oxford regulates heat either by adjusting the air and fuel intake or by moving the pot on the stove. Since starting the fire is somewhat of a hassle, Oxford uses an electric pot to heat small quantities of water. In the summer he tends to cook less. "You don't want lots of hot food in the summer anyway," says Oxford.

To heat the hot water tank, Oxford uses either an active solar collector or the stove. Each system is linked to the hot water tank which can also be heated by excess electricity from the wind generator. On cold days when the sun isn't shining, Oxford fires up the stove, heating his house as well as his hot water tank. He says that the solar collector pipes never freeze. "They can boil over even in the middle of winter if they don't circulate," says Oxford. "Even so, it's freeze protected — it's rubber except for the copper headers which wouldn't crack if they froze because they are perforated." On warm days when the sun is shining, Oxford heats his water through his solar panel. "I can take a shower as long as I want to," he boasts.

Entertainment

Finally, humans like to use energy to entertain and educate themselves; we like to read by electric light and listen to the stereo. For these

'Cutting wood warms you twice—once when you cut it and once when you burn it.'

uses, the most appropriate energy source is electricity. Oxford's wind system cost him \$13,000. With the \$5,000 tax credit, the initial capital outlay for the wind system would have been the same as hooking up with Central Vermont. (Oxford lives over half a mile from the nearest telephone pole hook-up point.)

Although Oxford does incur some labor cost in generator maintenance, he is completely free of service charges and rate increases (Central Vermont's price has doubled since 1979). He says that the batteries can be expected to last for twenty years if properly maintained. So he has all of the electricity he needs — between 100 and 150 kilowatt hours a month.

Morally, Oxford is free from the cost of nuclear power; Central Vermont generates much of its electricity in the Yankee Nuclear Power Plant. "Any machine can break" he says, "That includes the Yankee power plant and my own wind system. But the consequences would be on a vastly different scale. A melt-down would wipe out much of

the population of New England. If my wind generator collapsed on my house, at the very worst my family and I would be wiped out. Besides the melt-down scenario, nuclear power

doesn't pollute. Wind, like the sun, is free, clean, and efficient. Wood is also renewable. Any man who buys power from Central Vermont is at least tacitly condoning nuclear power."

'Any man who buys power from Central Vermont is at least tacitly condoning nuclear power.'

generates radioactive waste that will haunt us for several hundred thousand years. That is a burden that I don't think we can put on our children; we are jeopardizing their future. My wind system

There is one intermittent energy source which Oxford cannot regulate — snow. Fortunately, snow doesn't need to be regulated. On cold days when the ground is covered with snow, the sun reflects off

of it into the house; on warm days when Oxford wants to reduce solar penetration, the snow melts and the sun is no longer reflected off the ground. "Nature is amazing," says Oxford, "the more I thought about the house the more it seemed to me that nature had already engineered the whole thing."

Oxford built his house for \$38,000, including a one-quarter mile long driveway and a leachfield. Other items, including a 475 foot well, a wood cook range, and the wind system brought the cost of the total project to \$62,000.

continued on page 12



Katrin Sveg, the sorry Swede, tries to seduce Professor Paul Delville, as Ross Barnett and Content Lowell look on, in a scene from "Marriage-Go-Round."

Monogamy and fine dining

By Robin MacAulay and Karen Benfield

Proctor, though renowned for fine food, does not generally provide entertainment (unless you count "scoping" or food fights). Last Friday night was somewhat of an exception as MCAB presented the Alpha-Omega Players' Dinner Theatre.

The Repertory Theatre of America's Alpha-Omega Players tour nationally in three units, each of which is equipped to put on three or four different plays. Each unit is comprised of two men and two women who seem to be able to adapt to varied theatrical environments. Certainly this group made good use of Proctor, utilizing the audience as a classroom to which the actors were lecturing, as they presented *Marriage-Go-Round* to a handful of Middlebury College students. The play, by Leslie Stevens, once ran to packed houses for sixteen months in New York City (in 1958-59).

The subject of the play is

monogamy, a universal challenge facing married couples and college students alike. As Professor of Cultural Anthropology at a fictitious New York college, Mr. Paul Delville (Jeffrey Whitman) is faced with one of the most pressing problems in modern society: the future of the monogamous male.

Happily married to Content Lowell (Kimberley Finley), the college's Dean of Women, he

Says the bodacious young Swede to Professor Delville, her aging French target, "I huv come sousands of miles because I vont yu to be tze father of my ba-by." (One would hope that the unfortunate offspring would not be afflicted with the same German accent that Paul Delville tried to pass off as French). And so the plot progressed with measured chaos, yet predictable resolution.

...an enjoyable and light-hearted evening for everyone with an interest in monogamy and 'fine dining.'

approaches the subject from an observer's point of view until a buxom young Swede arrives as a houseguest and places in jeopardy not only his monogamy, but his personal future as well. Katrin Sveg (Diana Kirk) is the shapely international cosmopolite who has traveled all the way from Sweden in order to challenge biological genetics and produce the perfect child.

The audience, sparse but spirited, grew more responsive as the play progressed. Rare is the chance at Middlebury to enjoy fruit cocktail, chicken breasts, and a varied dessert plate along with professional entertainment. Though poorly attended, this year's Dinner Theater was nevertheless an enjoyable and light-hearted evening for everyone with an interest in monogamy and "fine dining."

ANNOUNCEMENTS

Midge Decter, author of *Liberated Women and Other Americans*, director of the Committee for the Free World, and former executive editor for *Harper's Magazine*, came to Middlebury on Tuesday, April 23 to address the issue of freedom and U.S. policy in Central America. Her lecture, sponsored by the College Republicans was held in Proctor Lounge.

Decter finds it hard to believe that the American public is having such a fierce moral debate about Nicaragua. Decter said "I have been in a state of astonishment for three years." She believes that Nicaragua is a consolidating totalitarian state, one that hopes to export revolution to its neighbors, and a state which the United States must oppose. For Decter, there should be little debate, but rather more education of the public.

overthrow of Somoza, "a corrupt, mean, bad, and above all, inefficient despot." The group of communists took power of the revolution and issued proclamations for universal education and the redistribution of land to the peasants.

From here, said Decter, "the process of takeover is always the same." The land is not given to the peasants but to the regime. The peasants are "collectivized and herded into

communes." Universal education becomes "mass indoctrination." The persecution of churches, the exiling and imprisonment of the democratic leaders, and a shutdown of the press follows.

thinks "a debate on moral grounds is astonishing."

For Decter, the answer to this situation is U.S. intervention, but others, she says, who choose to ignore the seventy year history of communism in the world, oppose other kinds of action. These people have controlled U.S. policy over the years, according to Decter, and this has led to a discernable pattern of response from the U.S. First, "we buy the friendship of the

new power with aid," followed by an internal debate with a large effort to "deny the reality" of communism.

"Once we realize it, it is too late," because communism by this time is already well established. At this point, says Decter, we invariably ask ourselves two questions: "Is it our fault?" and "How do we respond?" Decter claims this is the debate we are having now.

Decter, who sees this as a time for action, notes a tendency of reluctance which stems from the lessons of Vietnam and our mentality that "we can't do anything to upset the Soviets."

Decter believes that the U.S.

The American Civilization Program has added a full time faculty member and will offer courses open to the entire College.

Copies of the Course Registration Supplement, Course Schedule and Registration Information, including the hours designated for each class to register, will be available at Proctor Information Desk the week before registration. Students in the classes of '87 and '88 will register by random numbers which will be posted in Proctor on Thursday, May 9.

Students may register for no more than 4 courses at registration. Those wishing to take 5 courses may not register for a fifth course until the fall drop-add period, after the freshmen have registered.

There will be a \$25 fine for failing to register on May 11.

must face the Soviets when they try to establish a communist ally in our hemisphere. With regard to Vietnam, Decter asks, "are we going to be governed by this failure, or are we going to move ahead?" Hence, Decter asserts that we should support the Contras for two reasons.

First, "it is prudential and necessary to restrict the Soviet influence in our hemisphere." Second, Decter says, "we know that everywhere the communists

unless excused by a Dean. If you cannot come to registration because of illness or other legitimate reason you may have a friend in the same class register for you. Students will be allowed in McCullough only during the hours of their own registration. Your proxy will have to register for you on your random number and for himself on his number.

Students who owe fines and bills will not be able to register until their accounts are cleared. Be sure your debts are paid before May 11. Please bring receipts with you to registration.

Students who will register for EL 208 should check with the English Department during the week prior to registration to choose the discussion section which fits their schedule.

succeed in stabilizing a regime come poverty, oppression, fear and hunger." She stresses the importance of eliminating the communist influences in the region. Should it be necessary, Decter would support sending American troops to Nicaragua.

The discussion session after the lecture was heated and lengthy. Students questioned her insistence on using force, her disregard for "the lessons of Vietnam," and her aggressive attitude toward relations with the Soviet Union.

Students lead chapel service

On Sunday April 28th, an event steeped in tradition took place in Mead Memorial Chapel. The student led chapel service, of which there is always one and often two each year, was carried out under the direction of the student Chapel Committee.

Students were the force both behind the preparations for and performance of the service. Both the form and content of the service were developed by the members of the Chapel Committee, all of whom are volunteers. "We wrote our own prayers and introductions," said sophomore Claudia Wair, moderator of the Committee.

Two homilies were given, one by Wair, entitled "Joy in Faith" and one by senior Janet Small, called "What are my talents." The theme of these short sermons, according to Small, was faith and the grace of God. "We wanted to talk about what the individual could do with God's grace," she said. In her message, Wair talked about the relationship between college student problems and faith in God. "I thought it was a relevant topic for students, something they could relate to," she expressed.

The music for the service, also student chosen, was especially distinctive. The prelude featured junior Robert Luebbers on guitar, and the hymns included such selections as "Amazing Grace" and "Day by Day," with sophomore Sandy Hunt

as the organist.

Chaplain Scott, who was available for consultation in the planning stages but did not participate in the service, described it as "a valuable experience" for the students. "They come to realize that a service has to have form as well as content," he stated. Small reflected these feelings when she expressed her own sentiments regarding the service: "I think it's a good experience to plan and be in charge of a service."

The work of the Chapel Committee, though perhaps most visible at the student led services, goes on throughout the year. According to the Chaplain, the Committee usually meets once a week to discuss past and future services and to plan special events. This year, the Committee organized a Thanksgiving food drive and a clothing - toys drive at Christmas for the benefit of the community. It also sponsored a Lenten discussion group with Reverend Martin J. Heinecken.

Chaplain Scott noted that the Chapel Committee is the "only student organization not asking for money from MCAB." Rather, the Committee decides how the money received during the offertory is to be allocated among needy local organizations.

Although the student led service is over for this year, student participation in chapel is always welcome. Said Small, "We are anxious to have more people come to the service and to participate

in the readings."

Members of this year's Chapel Committee include sophomores Daniel Curtis and Claudia Wair, junior John Buggeln, and seniors Janet Small and Carole Stallone.

continued from page 9

The house has 2,200 square feet. In terms of capital outlay and size, it is average. But in terms of operating costs, it is anything but average — it is virtually free. Free of the financial burden of water, sewage, and utilities; free from the moral burden of pollution and nuclear power.

Oxford is living in the 1980s with the environmental impact of the Middle Ages.

Oxford built his house because he was tired of telling people what *not* to do; he realized that it was time to show them what they *should* do. The house is finished now, and Oxford is living in the 1980s with the environmental impact of the Middle Ages. He is showing us exactly what to do.

**Curtains—Rugs—Hardware—Fabrics—
Toys—Pet Supplies—Candy
Stationery—Picture Frames**

**A Complete Variety Store
Downtown Middlebury**

proudly presents
their



WOODEN NICKEL SPECIAL

...ask about it!

56 Main Street, Middlebury (802) 388-3250