

# COMMUNITIES

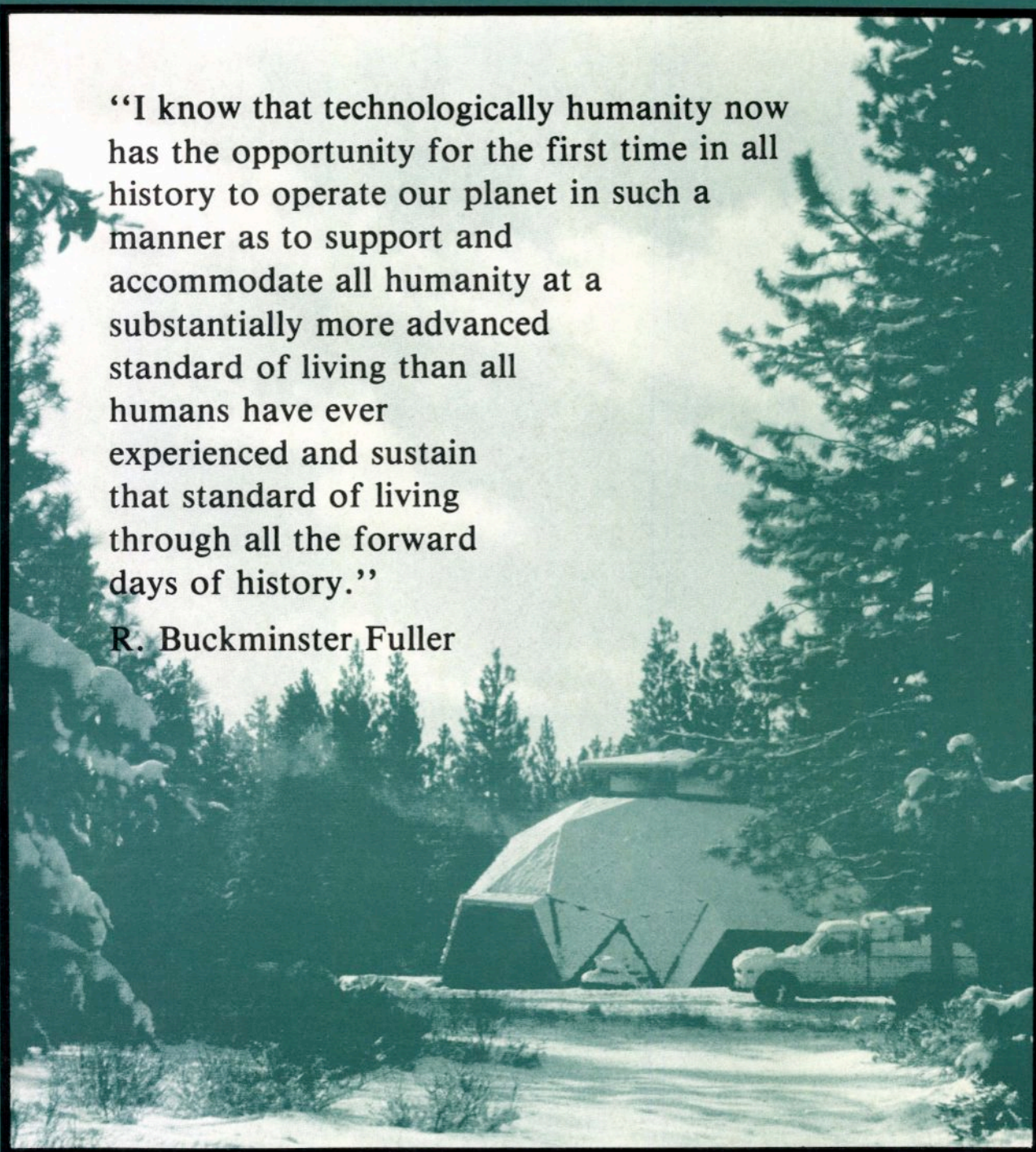
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no. 67

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R. Buckminster Fuller

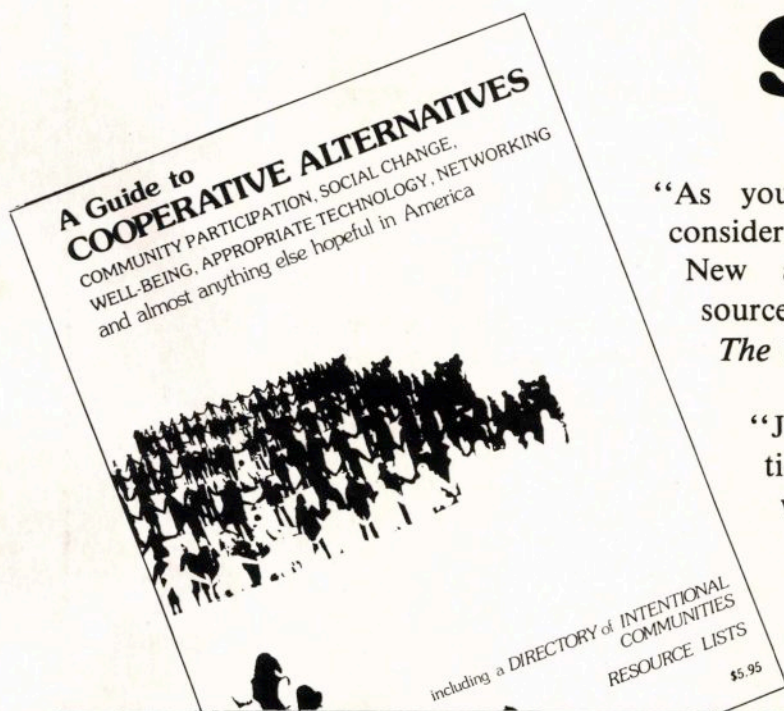


— TECHNOLOGY —

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Cooperation

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Summer 1985

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If your community or organization has a list you would be willing to let us use to help inform people of the services we provide, please write or call collect. Your cooperation will help us continue to build *Communities* into a more successful publication.

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## To Our Readers

Many of the thousands of intentional communities dedicated to personal growth and social transformation are making significant contributions towards ensuring a sustainable future for humanity through their research and development of various technologies. In an article "Intentional Communities, Society's Research and Development Centers" (issue #65 of *Communities*), Corinne McLaughlin made the following observations. "Like bright citadels of hope heralding the dawn on distant horizons, New Age Communities are living the future now. Creating centers of positive vision amongst the fear and crisis in the world, these new communities are living their dreams, escaping the 9 to 5 grind and living a healthier lifestyle close to nature's beauty. Building a better world for themselves, these communities are serving as research and development units for society, experimenting with alternative energy, organic agriculture, holistic health, self-governance and new forms of conflict resolution. They are pioneering solutions to global problems like pollution, energy shortages, inflation, and rising health care costs." *Builders of the Dawn, Alternative Community Lifestyles in a Changing World*, which Corinne recently co-authored with Gordon Davidson, presents a much more detailed overview of the significance

pp. 29, 30 and 32 from Stelle Community  
pp. 35 and 36 from Foundation for Community Encouragement

## Continuity

### COMMUNITY PUBLICATIONS COOPERATIVE

Paul Freundlich, Melissa Wenig,  
Chris Collins, and Charles  
Betterton

of intentional communities and the relevance of their experiences to society.

While many of us living in community would suggest that our accomplishments in enhancing personal and spiritual growth are most significant, it seems that the area of technology provides a more visible evidence of our contributions to society. Since one of *Communities'* objectives is to provide expanded awareness of the significance and relevance of intentional communities, we have devoted much of this issue to technology in community. Perhaps the best overview is presented in the article "Emerging Energy Technology and Intentional Communities" by Dr. Michrowski; "As intentional communities gain credibility and interact more usefully with mainstream societies, their prior research and development of emerging energy technologies will exert political and social pressure for implementation on vaster scales. The examples provided by these communities could make it easier for people to visualize attractive future scenarios where energy is truly available to all in a safe and free manner. United intentional communities may help advanced scientific thinking individuals and networks to affirm their creative activities. Through their unity, they may help

Continued on pg. 5

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# LETTERS

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I have been a subscriber to *Communities* for over ten years. *Communities* has been my main source of contact and information on intentional communities and cooperative organizations. Many times I was left with the feeling that the concept of community was only a theoretical exercise to pass away the excess leisure time of a few elitist intellectuals.

After reading and rereading the Spring 1985 issue I am inspired to believe that the idea of community and cooperation is alive and well and can indeed be experienced as a viable pragmatic lifestyle in my lifetime. You may count on my full support in this direction.

Paul W. Kemper  
Bradenton, FL

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Received a copy of the recent *Communities*, and it is truly a transformation long over due. Having the considerable resources and talent of the people of Stelle working with the communities movement in this way very much affects my perception of Stelle and its place in the struggle, but also how I view the effort to build community. With a more mature, professional appearing journal, my own dedication to the communities movement received a boost. I now view Stelle as more a part of our efforts than a project unto itself. It's wonderful to see Stelle's new activism. I can't think of any group I'd more want to see in the position of encouraging community networking and growth!

Allen Butcher  
Columbia MD

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In his article (*Communities* #66) Art Rosenblum suggests the cooperation of the communities movement with the human Potential Movement and shelters for the homeless. There is undoubtedly much to gain from this. But it also focuses another area of concern: how can we reach out to people before their needs reach a crisis? There are very many people who deal with their personal needs indirectly, unsuccessfully, and ultimately, antisocially. Society handles this poorly. Sure there are armies of psychologists and social workers, but again, we see that help is not forthcoming before the crisis is evident. What if some of the love of community could be provided to those in need before serious help is required?

To this end I propose a "Community at large". Yes, this exists somewhat, defacto, and is referred to indirectly in writings in *Communities Journal*, but it lacks a defined structure. It is difficult to reach out and grab or interact with. I'd be glad to discuss this and try to embody it. Anyone interested? Please write.

Bruce Nappi  
The Millenium Fellowship  
Reading, MA

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Copy of letter to Steve LeDoux

Read your article in *Communities* about sustaining the community vision. You make many good points and offer some good directions. I'd like to add some more.

There are many of us, outside formal community groups, who would like to be part of the movement. Reading about it is not enough. As a subculture, we are much more supportive than mainstream

society and could provide a needed level of transition. We can provide many of the positive inputs you outlined.

Sure, you may ask, why don't we just join a group? There are many reasons. Some are probably no more than excuses for a lack of initiative, but others are exactly the reasons given by senior pioneers for leaving. Lest we get tied up betwixt the chicken and the egg here, I propose viewing this as a problem amenable to numerous solutions, all of which will be more effective as the root problems are reduced. Let me continue with some specific ideas:

1. Associate members at large — each community could maintain a roster of associate members. The associates would be non-voting but contributing elements. In return for their support, a pen-pal type exchange would be set up leading hopefully, to eventual full membership. Visits could be arranged in the meantime. They would be so much more meaningful because of the knowledge and interpersonal base set up.

As a preliminary to this, a semi-formal clearing house needs to be set up to help match critical philosophical viewpoints.

2. Transition programs — many people would go, now, if they were sure! Despite everything possible, many situations will not work out. If a structure outside of the individual communities were available to assure (or possibly insure?) support for reestablishment outside at some level commensurate with that which was left, more would take the risk.

3. Extended Experiments — while outsiders don't have the insider environment, some of the ideology can be tried outside.

Cont. on pg. 55

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# Whatever Happened to Baby Boom?

By Paul Freundlich

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*Biographical Note: Paul Freundlich was a Peace Corps filmmaker in the 60's; a community and co-op organizer and editor in the 70's; and is presently Director of Co-op America, a national membership marketing association based in Washington, DC. Co-op America offers a bridge between socially and environmentally responsible organizations and individuals through a catalog, a magazine ("Building Economic Alternatives") and alternative health insurance plan, and other services. Co-op America, 2100 M St., NW, Suite 310, Washington, DC 20063.*

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It has been reported that Baby Boom, having survived the Iron Curtain in infancy; the Korean War and Joe McCarthy in childhood; the Vietnam War, drugs, sex and rock 'n roll in adolescence; and the women's movement, human potential movement, environmental movement, co-ops, simple living and anti-nukes in early maturity—has disappeared.

The phenomenon is even more extraordinary considering that Baby Boom is the biggest baby in American generational history.

Where did s/he go?

The latest theory is to heaven, recently renamed, "Yuppie Land."

In Yuppie Land (it is said) Baby Boom lives with all the other adults who consume the riches of America.

\* \* \*

The mainstream press may be smug about it, and the alternative press may be bummed about it, but there's a general media agreement that something went wrong.

Could all the politics, principle and activism simply have been a phase? Has the materialism at which the Baby Boom generation rebelled come home to roost?

As an editor of *Communities Magazine* the past ten years, and

more recently, founder and Director of Co-op America, I could easily argue that there are still millions of actively concerned folks working in their local communities, supporting national causes, and dreaming of a just and peaceful life. That's true, but begs the question.

Many more millions in the Baby Boom generation have lost any useful connection to the ideals which changed their lives—and in the process deeply affected this country.

What happened? What can we do about it?

1. What happened?

Everything. All our brave experiments worked and failed in more ways than we could have imagined. We stopped the Vietnam War, shut down nuclear reactors, took back the night, revitalized neighborhoods, pioneered energy efficiency and self-care.

But did that add up to a liveable personal life, politics and economics? For some activists, yes. And in towns like Berkeley and Eugene, Austin and Minneapolis, communities and institutions developed which supported an alternative lifestyle.

For most people, however, it didn't add up. At best, they maintained some personal ways of relating, some

lifestyle choices and spiritual/political beliefs. The opportunities to participate in the security and affluence of America which came as birthright (class, education, race) were too seductive. Maybe the reasons for the initial rejection of those values hadn't disappeared, but nothing conclusive had replaced them. Straight jobs, secure relationships didn't look so bad the second time around.

So we're looking at a continuum from folks who gave up completely to still-dedicated activists, with most people somewhere in between.

To the extent that a movement failed, was it anyone's fault? Not really.

The mainstream society can hardly be blamed for being a vast, complex organism with a strong survival instinct. The folks who promised instant revolution or Ecotopia might be faulted for naivete, but so could the believers. Mostly we did the best we could with the material at hand. In the process we created a viable sub-culture(s), changed mainstream society, and scared hell out of the establishment. Good going, Baby Boom!

2. What can we do about it?

Somewhere between "go with the flow" and "use what we know" there will be happenings and opportunities. Reagan's in his last term; worker-ownership could revitalize a progressive union movement; new buying and viewing patterns will change the media and the economy; a number of local politicians have demonstrated that a progressive, populist, pragmatic line is electable.

But Baby Boom will take some convincing. This time around, folks are going to be looking for a business plan, not manifestos. Not for exhortations about what *must* be, but for how it's going to work.

Respect for the environment, for

the future of our children, for the communities which nurture us, for a sense of social justice are the forces which will drive that business plan. But the plan will tell us how the parts fit together, and who is going to take responsibility for what.

Will we spend as much time arguing over who will write the business plan as we did over who would write the manifestos? I hope not. For a decade and a half now, we've been struggling with the tough questions of making our values stick.

Some of us have been working in alternative institutions, some in the mainstream, most have been scouting the interface between them. While I don't expect egos to disappear, I do find folks with reasonable politics increasingly willing (nay anxious) to reach general consensus about purpose, and move quickly on to planning and implementation. I'd like to think that's because we did so much of that philosophical work already.

From revitalizing our cities, to

guarding the environment, to defining new standards of workplace productivity and participation, to saving the peace, to supporting our personal lifestyle choices, it will take every bit of what we've learned. Creating the option to live in self-reliant communities, while still participating in a wider polity is a new paradigm which we are still seeking.

It turns out that all we struggled for was preparation for more struggle in our adulthood. Lucky us.

Keep it up, Baby Boom. □

### The National Coalition on Television Violence

The National Coalition on Television Violence is a non-profit, scientific educational public interest group working to teach people to shift their entertainment from violent to non-violent. We also publish reviews on research on violence by others in our national newsletter. Members are needed for our co-op community of seven to expand our work against violence. TV, movies, toys, rock videos, sports, games, comics, books are studies and reports are sent nationally and internationally. Non-violence courses designed and taught and non-violent toys, games, books, etc. distributed. Our research has appeared on 60 Minutes, Donahue, Today Show, PBS Latenight, and in many national and foreign newspapers.

Our co-op headquarters is next to the University of Illinois. No cigarettes, alcohol, etc. Children OK. Hard work. Visitors welcome, \$20/week & work.

#### National Coalition on TV Violence

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### To Our Readers cont.

catalyze key developments of the future."

Several of the articles in this issue provide specific examples of how the experimental research and development activities in intentional communities can attract outside funding by demonstrating the project's value to society at large. Most of the technological applications within community are related to basic needs such as more energy efficient forms of housing, ranging from earth bermed homes to active and passive solar designs, food production techniques such as greenhouses and bioshelters, and seeking alternative sources of energy such as the production of fuel alcohol from corn. Many of these initiatives can be applied by anyone anywhere who is interested in ecologically sound, self-sufficient, and sustainable local environments.

To facilitate further sharing of helpful ideas and information, the next issue of *Communities* will feature a new column, "Community Ideas". We encourage any individual, community, or organization who has an idea for making a community a better place to live (through technology or any other means), to send their

ideas/suggestions to: Community Ideas c/o Communities, 126 Sun Street, Stelle, IL 60919.

Future issues will continue to focus on demonstrating the significance of community experiences and accomplishments. For example, issue # 68 will feature articles about past communal societies, their history, accomplishments, and relevance to contemporary intentional communities. An international perspective will be addressed in issue #69 which will feature articles about communities, publications, networks, and organizations around the world which are directly or indirectly related to intentional community. Issue #70 will highlight the many different resources communities provide for accelerated personal growth in mind, body, and spirit. We invite you to participate by suggesting or submitting articles for any of these issues. We also encourage your contributions to Community Ideas and letters to the editor. Your active involvement is essential to our success in sharing the spirit of community with the millions of people who are seeking the better alternatives intentional communities provide.

Charles Betterton

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# Emerging Energy Technology and Intentional Communities

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BY DR. ANDREW MICHROWSKI

One of the social phenomena of our times is the thrust that intentional communities give to emerging energy technologies. The experience is prevalent, and does not respect cultural boundaries. Communities in Japan, Norway, the United Kingdom and India are engaged in the quest for a new way of dealing communally with energy needs.

The interest is not merely expressed through a collection of curiosities and data; frequently resources are invested in actual prototypes often with the aim of recuperating a direct advantage, sooner or later, in the management of the intentional community's infrastructure. There have been attempts to secure an economic independence in energy and to develop a marketable technology by using some advantage derived from emerging energy sciences.

This phenomenon is so common that when intentional communities have a psychic bent, a significant proportion of their channeled information is of a scientific and technological character, stimulating emphasis

for ensuing research and development initiatives. Even intentional communities which are oriented towards spiritual rather than psychic goals underline emerging energy technologies. Those communities which are motivated by socio-economic or by "survival" objectives partake in similar priorities when it comes to energy technologies.

Why may this be so?

This life carries with it a connotation of social and political experimentation. Sooner or later, the willingness to experiment, reinforced by communal skills in networking of information and knowledge, breeds the milieu for the experimentation of uncommon scientific and technological ideas.

If the goals of the intentional community's members remain "clean", the likelihood to search for new potentialities will focus on the unconventional yet ecologically fitting options. If the community is flexible enough, the actual research will articulate an intuitive approach. These observations suggest a link

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*Dr. Andrew Michrowski is President of the Planetary Association for Clean Energy, an international network of advanced scientific thinking based in Ottawa, Canada which is stewarding clean energy systems. The association is promoting such research and development and has published several books on the subject: the proceedings of two international symposia on unconventional energy technology as well as a massive study, **Emerging Energy Science**, done for the National Research Council of Canada. The association is located at 100 Bronson Avenue — 1001, Ottawa K1R 6G8 Canada (613) 236-6268. Dr. Michrowski has worked with such intentional communities as native ones in Canada and has done a thesis on **Planning From Below** which became a manual for many such communities for self-determination in socio-economic development.*





between ways of living and ways of perceiving and acting out emerging technologies. The more future-oriented is the intentional group, the more far-reaching is the research and development "horizon".

The existence of such a link may indicate what the scenario in the actual implementation of emerging energy science and technology may be like.

Communal lifestyle implies sharing and the affirmation of certain equality rights amongst members which are not necessarily valued by other agglomerations of humans. If communal living appreciates "free" energy systems it may be because such systems accommodate the individual's rights to a communal resource.

As intentional communities gain credibility and interact more usefully with mainstream societies, their prior research and development of emerging energy technologies will exert political and social pressure for implementation on vaster scales. The examples provided by these communities could make it easier for people to visualize attractive future scenarios where energy is truly available to all in a safe and free manner. Just as much as monasteries in the Middle Ages demonstrated the social justice of free water supply, so free energy as a right can be shown to have its merits. Perhaps it is through the assistance of the intentional communities that we may eventually see the visions of Nikola Tesla and T. Henry Moray set in place as common goods.

More importantly, in the second half of the 1980s, some intentional communities may co-operate internationally among themselves with the purpose of staging certain emerging science and technology issues more visibly. At present their R & D is low-profile. But, later on, through publishing, NGO representations, submissions to governmental agencies could make an important turnaround for a joint cause. The message for

people-oriented, user-appropriate technologies could surpass multinational corporation logics and the mega-scale concerns of utility managements. Furthermore, the free-agency of intentional communities may make it very difficult for established scientific organizations to deny the existence of new avenues in science and technology.

United intentional communities may help advanced scientific thinking individuals and networks to affirm their creative activities. Through their unity, they may help catalyze key developments of the future. Even unintentionally, through the provision of "manpower" and the intelligent "demonstration projects" they can help coordinate events otherwise blocked by skepticism or by vested interests.

Surely, a necessary ingredient for such a breakthrough lies in cooperativity. It is one thing to be cooperative between very different communities. It is yet another to undertake cooperation with pioneering scientists, some of whom are neither predisposed psychologically nor circumstantially to think "communal". By stressing the concern for establishing a "clean" — and safe science and technology and de-emphasizing personality issues, an important objective may be reached within our lifetime.

Currently, research with emerging science and technology devices reveals curious characteristics.

While it has been possible to merge successfully the theories and observations of advanced conventional physics with the developments originating from articulate unconventional devices, it remains difficult to establish universally acceptable criteria for proof that "free" energy perform as claimed. There lacks a standard for measuring "efficiency" of work performed, for example. The inputs are often not the same as the outputs; the work done is not always the work expected by our conventional infra-

structures. In the case of electrical devices, one may secure lots of voltage, for example, when the investment was both voltage and amperage, and usually work is achieved with both factors.

So far, the very little research invested in unconventional devices, especially electronic ones does explain why many prototypes are plagued with unpredictable performance. A device may "purr and perform" for hours and even days without a hitch. Restarting it at another time is unsuccessful. But then again, at still another time, even without further modifications to the device, performance is flawless. What was the problem? Was it humidity? Was it pressure? Was it contamination? Till expensive tests are done, such bugs cannot be weeded out. It is not only a question of money, but rather the precious time availability of skilled individuals which is currently slowing the process of getting to know the rudiments of an emerging science and technology. In the meantime, this erratic track record is not an advantage for a technology trying hard to make it "big" in a skeptical world and trying to attract potential investors.

The perennial problem of the psychology of the inventors is also present. To unaccustomed eyes, their personalities and phobias hinder progress towards public acceptance. The art of dealing creatively with such individuals and groups, is a difficult one to master. But, some intentional communities have members who have acquired the social and psychological skills of coping with this situation intelligently.

Clearly, the emerging energy technology is only emerging. It is yet immature.

With time, with cooperativity and patience, this technology can grow to become an important characteristic of future civilization. And, intentional communities can be a useful part of the tooling for this clean advent. □

# TECHNOLOGY

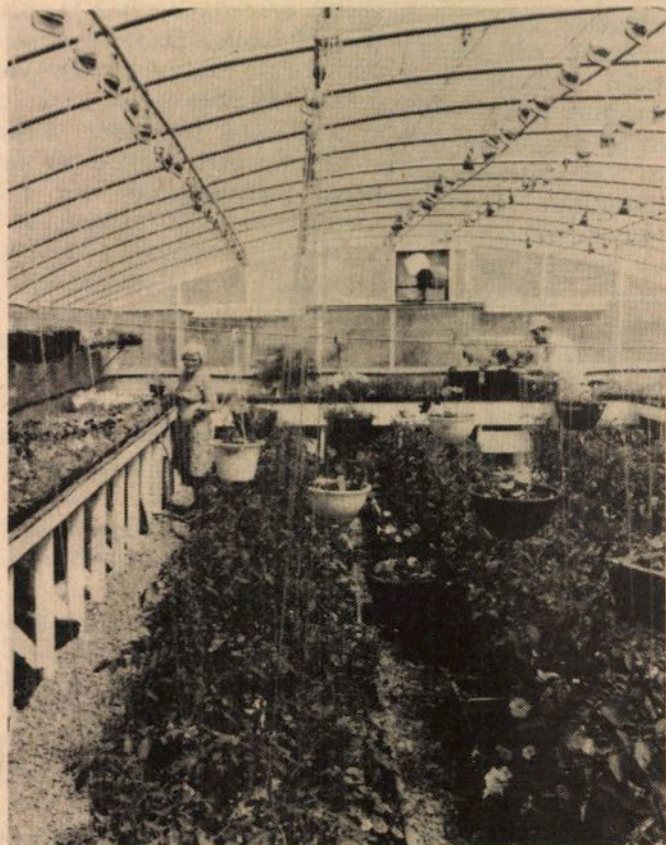
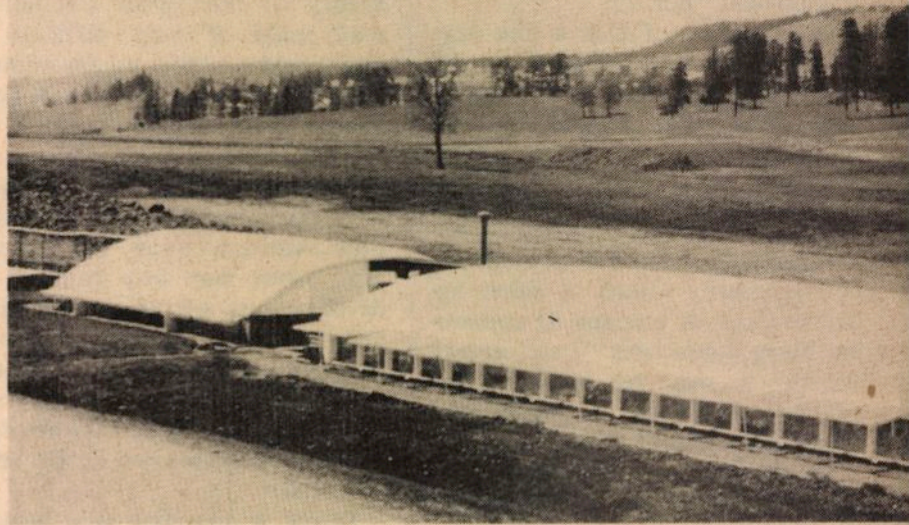
An intentional community to me is one whose members demonstrate cooperative and useful function together. On this basis they have something to offer to the world. This may be a commodity, refuge, or simple friendship and support. Streamlining work and operations in a community gives everyone concerned more space in which to refine other areas of function or expression.

Technology in some way plays a part in all our lives. Most North Americans enjoy the convenience of telephones, motor vehicles, wrist watches, and televisions. Even without these conveniences technology would be evident in our building materials and clothing.

Recent decades have seen people in droves "dropping out" or "getting back to the land," perhaps attempts to leave technology and the mixed-up state of the world behind. Try as they might, technology has followed them along and their connection with the rest of the world has remained. The motivation as many of us know was genuine. Misuse and abuse is rife in the world, including the use of technology. Land has been exploited and millions have lost their lives through the misapplication of technology (all in the name of progress of course!). But a different way is appearing — a way not of exclusion but of inclusion of what works. Technology works when the people behind it operate with integrity, and therefore have the needs of the whole in perspective.

My technological activity is in the greenhouse field and with hydroponics. Many see hydroponics as a new science and I suppose in modern times it is. However, hydroponics traces its roots (so to speak) back to the Hanging Gardens of Babylon and to the floating gardens of the Aztecs. Hieroglyphic records reveal that the Egyptians grew plants in water as did the Chinese. More recently hydroponics surfaced in the 1800s but nothing really developed until the

## Its Role and Function in Intentional



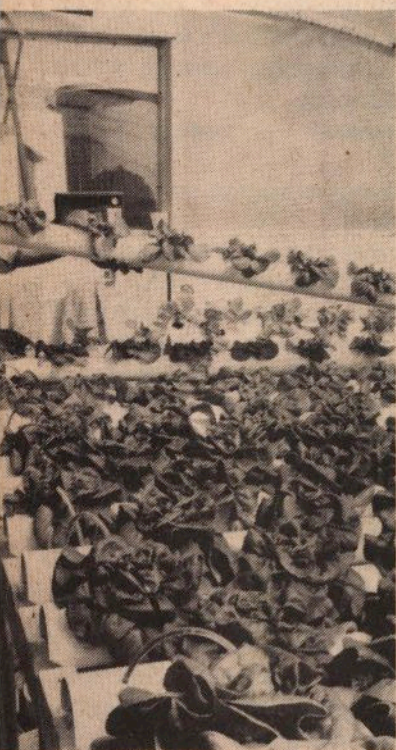
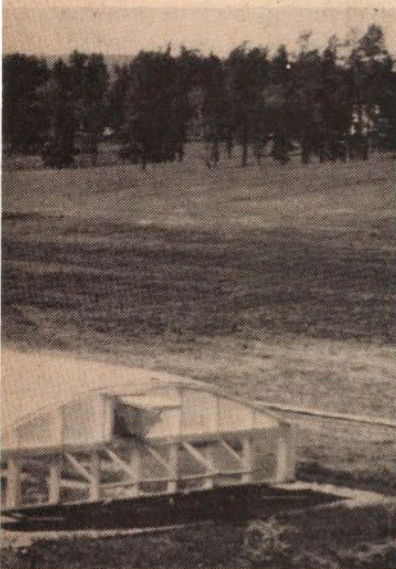
*Bedding plants, tomato vines. European cukes will take the space of the bedding plants.*



*Each "trough" removable for then filling with*

# OGY:

## Communities



lettuce is  
best and  
seedlings.

PETER DALBY

1930s in California. Commercially the technique is now about forty years old.

I operate two greenhouses covering a combined area of 1250 square feet. In size this is considerably larger than the average family would need but is much smaller than a commercial operation. It is ample for our Emissary community of one hundred and twenty strong. The houses are linked by a common vestibule which has the heating system in it. A gas fired hot water heater services both houses. The walls are insulated to R20 to a depth of four feet, as the houses are roughly that deep in the ground. This takes them out of the wind and produces a sleek looking structure. The glazing is double six mil poly (greenhouse quality) with air blown between the layers to inflate the roof. This air serves as an insulating medium. A one inch metal conduit frame supports the plastic roof.

Our climate is subject to the extremes of  $-50^{\circ}$  F. in winter to into the ninetys in summer. The heating system and insulation are adequate to keep the smaller house (about 350 square feet) running year round and the larger house for nine and a half months.

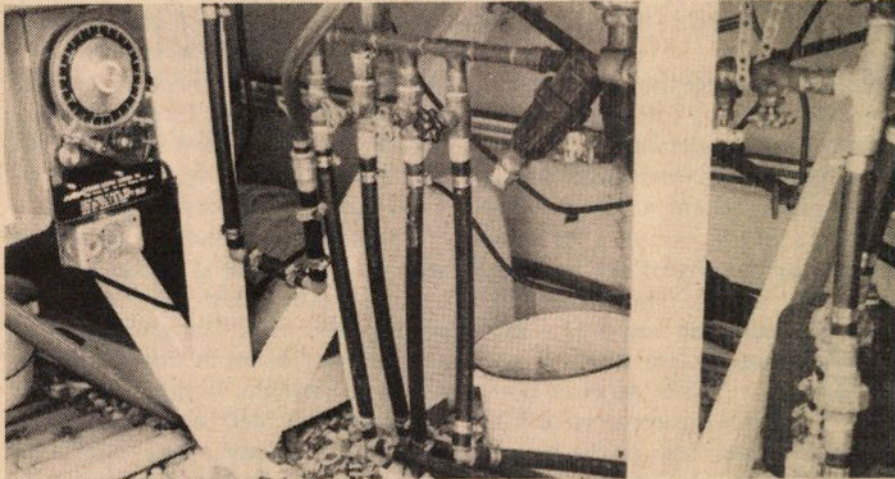
I employ both natural and fan forced ventilation, depending on the time of year. Power venting in the larger house is available for cooler times of year when I don't want the big vents (which provide natural ventilation) open. For natural ventilation at least 16% to 20% of the floor area should equal the number of square feet of vent space. The larger house has 22%, located in the perimeter windows. Each sash is hinged from the top and the greenhouse can be opened all the way around. The roof is curved and the house is glazed even to the north, which may appear peculiar considering solar greenhouse design. However in our extreme climate we see the sun seldom in winter and on a cloudy day, the northern sky is as bright as the

southern sky. Plants growing inside need the advantage of all available light, especially on a cloudy day. Diffused light (as through clouds) does not reflect like direct sunlight, thus an insulated and reflective north wall would have little value here in winter, at least in providing light.

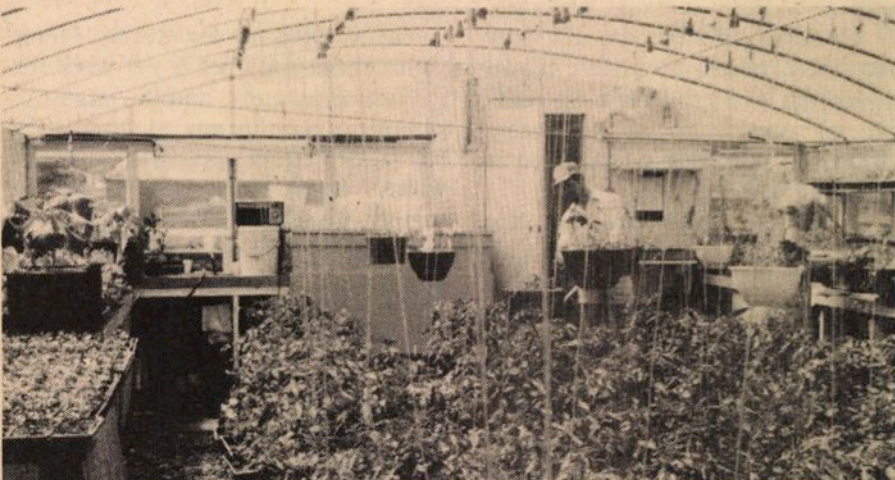
The smaller greenhouse can be run year round because it produces only lettuce, both a low light and low temperature crop. The growing cycle simply slows down in winter because of short daylight hours. Florescent lighting is provided to give the lettuce seedlings a strong start. The main area of the growing crop receives only natural daylight, whatever that may be.

The smallest harvest during winter yields about sixty heads per week for ten or twelve weeks, and the largest in summer climbs to one hundred fifty heads of lettuce per week. Those winter heads take 17 weeks to maturity (about half that time is spent as a seedling and the other half in the hydroponic system) and in summer eight weeks. The system is comprised of a nutrient tank, pump, and water distribution network. The pump feeds a distribution header which trickles the nutrient solution through forty-two troughs in which the lettuce is growing. Each trough is a white pvc pipe three inches in diameter, ten feet long, with fifteen holes cut in the top. On each hole sits a lettuce plant with roots dangling into the nutrient solution flowing by. The nutrient solution is reclaimed at the end of the trough and delivered back to the nutrient tank. That's "the system" in a nutshell! The operator's job is to maintain the environment (temperature, venting, cleanliness etc.), maintain the feed or nutrient solution, and plant and harvest the lettuce. All this requires one person's time for perhaps four and a half per week in winter and seven or eight in summer.

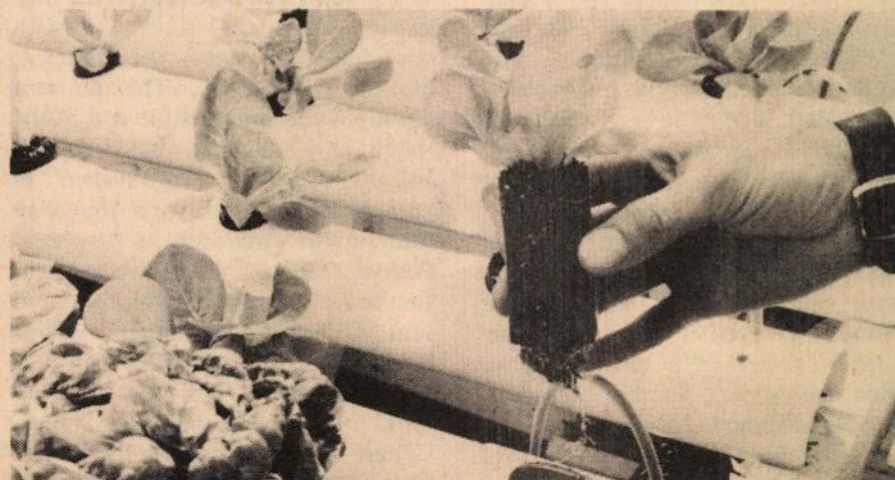
There are numerous pros and cons to hydroponic gardening. Incidentally I present hydroponic gardening here



*In tomato house, showing timer, distribution header, filter, pump on right.*



*Bedding plants, tomato plants. Nutrient tank in background (tomato vines will grow over 15 feet long).*



*Showing a lettuce seedling at time of transfer into the system.*

as a complement to but not a replacement for traditional outdoor gardening. The advantages of hydroponic gardening include:

- 1) ease of sterilizing 'soil' or growing medium, thus eliminating weeds and soil-born diseases;
- 2) control of nutrition — it can be adjusted easily for different needs;
- 3) space saving — plants can be close as there is no competition for water and nutrients;
- 4) no weeding or cultivation is necessary;
- 5) economic use of water — it is directed where needed;
- 6) efficient use of fertilizer;
- 7) a tendency toward uniform results — all plants have the same conditions which is of commercial value;
- 8) and growth is rapid.

Disadvantages include:

- 1) capital investment in the system (other than the greenhouse itself, since hydroponic growing works well outside);
- 2) maintenance — pumps, tanks, etc.;
- 3) and energy consumption — cost of electricity.

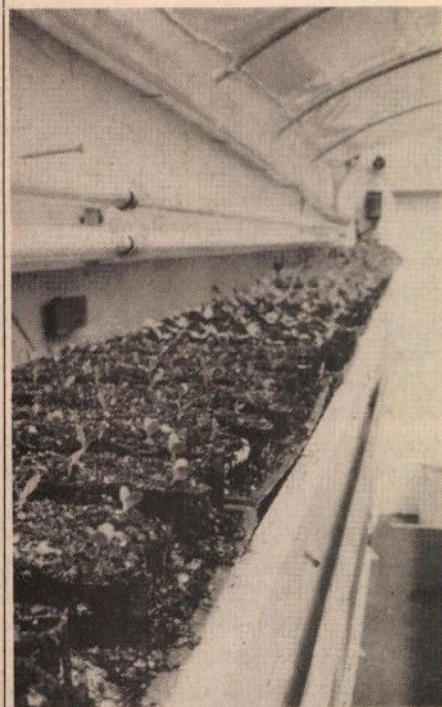
Aside from the advantages listed, I must mention the quality of the food. It is first rate, having been pampered in a balanced and very clean environment from seed to harvest. We never need to wash the produce from our greenhouse! A greenhouse in the back yard also makes it handy to the kitchen.

The larger greenhouse differs from the lettuce house. It serves a dual purpose: for raising bedding plants (flowers and vegies) beginning Feb. 1 and finishing the end of May, and for growing tomatoes and European cukes well into October and perhaps November, depending on the weather. I have 156 tomato plants and 25 cukes. Last year the tomatoes yielded 1900 pounds and the cukes nearly 700 pounds.

This operation is unique in that the tomatoes and cukes are grown in



*In the lettuce house, with seedlings on the left.*



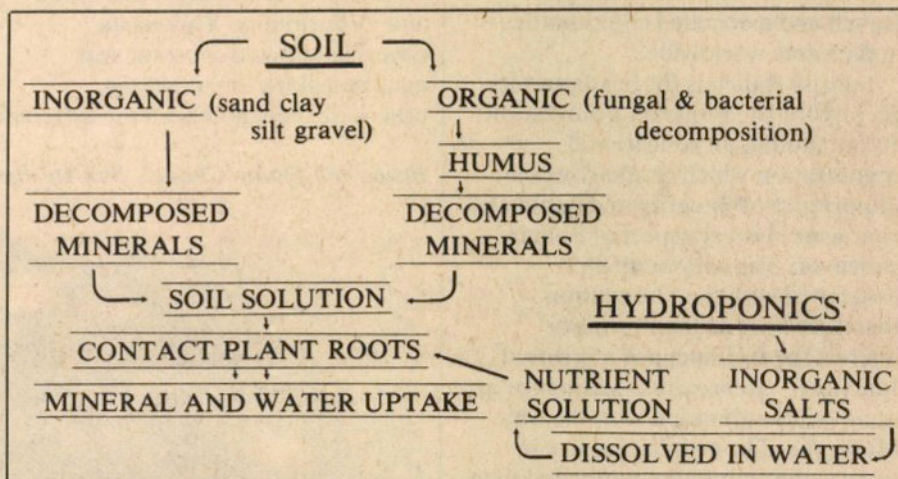
*Lettuce seedlings, looking from youngest in foreground to mature (as seedling) in background.*

plastic bags (about five gallon size) filled with sawdust. The tomatoes sit two to a bag, the cukes one to a bag. The sawdust provides their physical support and the absorptive medium into which the nutrient is fed. A spaghetti tube from a plastic line feeds into each bag, and nutrient flows according to a pre-set timer. The pump may come on twice a day (for five minutes each time) when plants are small, or it may be fifteen to twenty times per day according to plant size and weather. The timer is set each morning; plants transpire much less on a cloudy or cool day and therefore need less water.

People ask if I use chemicals and I reply, "yes." But a deeper question is really being asked, revealing as awareness of how the imprudent use of fertilizer is ruining our agricultural

whether that nitrate is available because of decayed compost or because of being added in salt form into a nutrient solution, the 'diet' is essentially the same. I expect a popular view is that a plant's diet is available by absorption through the roots. However, by volume only a small percentage of a plant's mineral needs comes in this way. In fact 90% of the dry weight of a plant is carbon which comes from the air as carbon dioxide. So in considering the needs of a plant there is more than the soil or nutrient solution, though those aspects are crucial.

The following diagram may be of assistance in further understanding the availability of plant nutrients, at least those that come through the roots!



land and quality of our crops. Let's examine this more closely.  $O_2$ ,  $H_2O$ , and  $MgSO_4$  are all chemicals we know as oxygen, water and epsom salts. Without chemicals there would be no life forms as we know them. The chemical problem in the food growing industry has been the misuse or overuse of many substances, to the peril of both the environment and its inhabitants.

Plants absorb nutrients only in certain forms, mineral forms. For example a plant's favourite form of nitrogen is nitrate —  $NO_3$ , and

In a greenhouse and even more specifically in a hydroponic system the life of the plants reflects the life of the caretaker or operator. That person maintains the balance of environmental factors, including the plants' right nutrition. This is an exacting job; the operator cannot neglect the chores or to finish those details — it may well mean the loss of the crop. To me the true basis of technology rests with people who are responsible and exact, and aligned with the way of life, in its many forms, creates. □

# SUNRISE RANCH

**I**live and work on Sunrise Ranch, a community 13 miles west of Loveland, Colorado, in the foothills of the Rocky Mountains northeast of Denver. The community has existed for forty years now, having been developed from a rundown dryland farm into a productive facility of some 360 acres, a small dwellingplace of less than a dozen people into a community of 150. Technology has played a significant part in this development, not only in the growth of the Ranch itself, but in providing media for dialogue between the Ranch and associated communities and centers worldwide.

Sunrise Ranch is the headquarters facility for the Emissary Foundation International, an educational organization which emphasizes the importance of integrity and quality of character in every aspect of human endeavor. The communities associated with the Foundation therefore have as their primary interest the fulfilment of a spiritual function — to provide a setting for an accurate coordination with the way life works. The people who live in these communities are motivated then to allow a keen perception of the naturally progressing cycles of creation and change to govern their work and the development of their projects. This attitude allows a practical, free approach to the development and use of technology.

One of the most practical fields of application for technology is in the design and construction of shelter. In 1973 Sunrise Ranch began work on an 80-foot Zafu geodesic dome to serve as its chapel/auditorium facility. The Zafu design truncates (flattens) the spherical shape of the roofline, in this case setting the ceiling height at 24

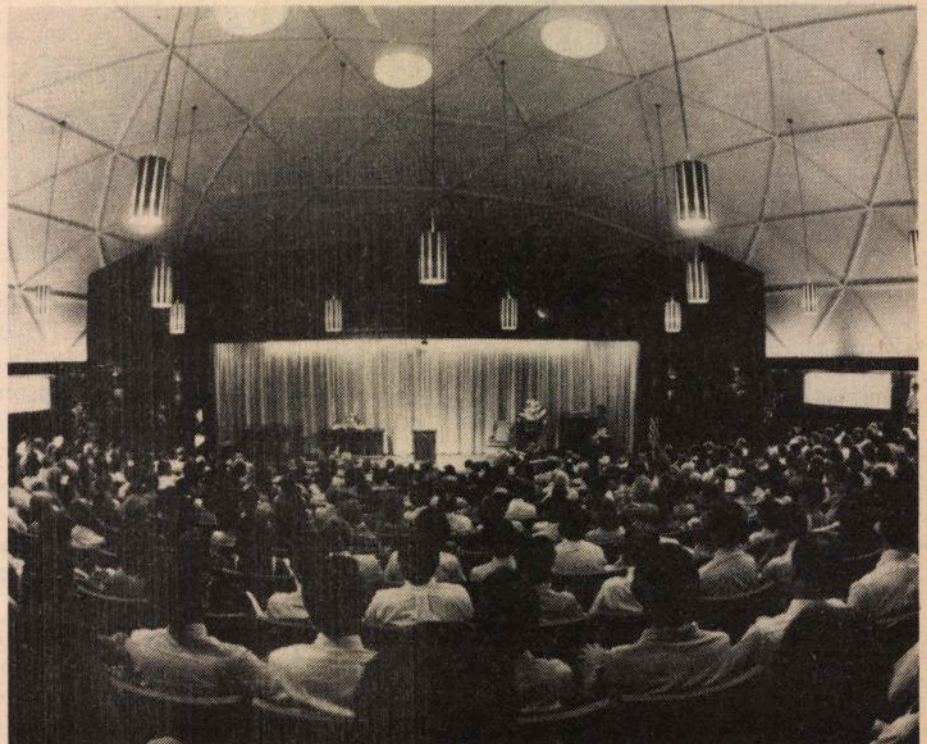
## Adventures with Technology

BY PENDELL PITTMAN

feet. With Buckminster Fuller as a consultant, we built the basic structure of a wood frame using 2x6 lumber. Plywood was used to support the outside covering of ferrocement. An elastameric coating was then applied to the ferrocement in layers — seven layers of Neoprene covered by a layer of polyester mesh. Four more layers of Hypolar gave the Dome exterior its milk-white color and its durability. This elastic covering allows a constant seal against leaking and cracking, otherwise inevitable with the different

Technology must remain the most effective means to a creative end — not an end in itself — or it is not useful. It is effective when it frees, connects, and blends the creative efforts of people.

*Inside the Dome Chapel, Sunrise Ranch.*



rates of expansion and contraction between the wood structure and the ferrocement.

The Dome can seat 472 people, has a 38-foot by 14-foot stage area and uses retracting theater-style seats on a sloping floor. Broad windows offer a panoramic view of Eden Valley and the surrounding Colorado foothills. An overhang surrounding the base of the Dome roof catches moisture and is designed to provide solar shading in summer and solar heating in winter. Venting via a natural chimney effect is created using top and sidewall vents. Temperature is stabilized by fan-coil heating and central air conditioning. Wide use of skylights provides plentiful natural lighting, with theater lighting accenting the stage area. The dome hosts a Rodgers two-manual pipe organ with pipes speaking from the back of the auditorium. The Dome has audio, video and teleconferencing facilities. Finished in 1976, the Dome was then the largest structure of its kind in existence.

It has been said that "work is love made manifest." Our emphasis is to allow spirit to be expressed in practical, down-to-earth ways. The talents offered in architecture and the building trades have been an ongoing creative part of the activity on Sunrise Ranch. Care has been taken to ensure that designs are practical and serve a tangible, not imagined, need.

For instance, the desire to serve highly nutritious varieties of lettuce and other vegetables motivated the recent construction of a greenhouse employing hydroponic technology. The lettuce is planted and grown in a tube filled with peat moss, which absorbs nutrients from a controlled flow of water circulating through the tube. The lettuce remains fresh longer since it is harvested with its root system intact. Washing is unnecessary, because it has had no contact with pesticides, bugs, or dirt.

The full-headed, deep-green hydroponic lettuce could be classed as

"gourmet," and in fact is sold by one Emissary community to top restaurants. It has not, in its short production on Sunrise Ranch anyway, proved to be more economical than its garden-raised brethren. However, the presence of they hydroponic greenhouse has provided the valuable opportunities well worth the production cost: the opportunity for contact with technical people interested in hydroponics, a creative workplace for children, a display of practical wholesomeness and the serenity of the atmosphere provided by the kingdom of vegetation. Perhaps foremost is the direct opportunity to exercise stewardship for the plant world, in a system where people are totally responsible for providing the right atmosphere and fertile nutrients for growth. Sunrise produces much of its own food, grown in soil developed through organic methods over many years.

Like many communities, Sunrise Ranch makes use of computer technology. A minicomputer and several micros, which feed a typesetter, assist in the publication of books, booklets, brochures, regular mailings, newsletters, and other printed material. Sunrise has complete press and production facilities, and maintains a large mailing list.

We have found it useful to move slowly in the acquisition of technological hardware, using models which do not out-perform their applications. For example, several regional centers have purchased TANDY TRS-80 Model III microcomputers to handle their simple mailing list, accounting and electronic mail needs. This computer model is not now on the leading edge of available computer power, but is a model adequate to the need. There are the advantages of a low price for an old model and the availability of service.

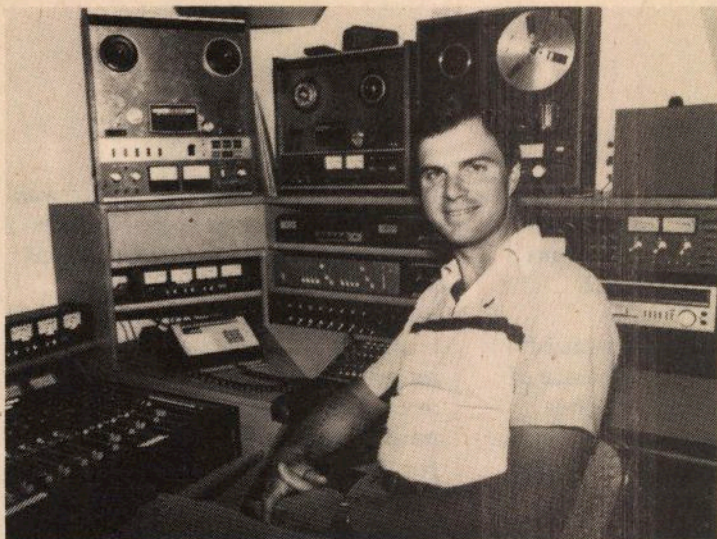
Consumer technology changes so

rapidly that it is advantageous to wait on the acquisition of some products while the price of the new tech drops and complete use is made of the present equipment. Usually there is creative work to be done in finding more efficient, streamlined ways of making the most of what we already have. This lays a proper foundation for right acquisitions in the future.

Emissary communities themselves function as a "family," each providing its own unique character — a hotel in Cape Town, South Africa; a farm near Muncie, Indiana; a convention center in Ontario; or a health spa in southern California. These facilities correspond via electronic mail and other telecommunications daily. Costs for this communication are kept reasonable with the sender asking himself: "What *really* needs to be communicated?" "How soon does it need to be heard?" The surface mail is slower yet cheaper than electronic mail, which itself is slower yet cheaper than telephone. GTE Telemail presently serves our need for an electronic mail service to handle lengthy transcripts at a moderate cost.

Electronic mail and other data is passed between computers via telephone. An alternative medium we have found, should telephones fail, is amateur radio. The American Radio Relay League sponsors a network which daily transmits messages anywhere in the U.S., Canada, and some foreign countries. Anyone can phone a local amateur to originate a message; this is a public service for passing non-commercial greetings. In an emergency this network provides emergency communications. The daily activity keeps the system sharp.

In planning our use of radio, we at first thought of initiating our own network to handle communication emergencies. Our conclusion was that a "private" network would compete with official and other radio activity for the same frequency space, thereby

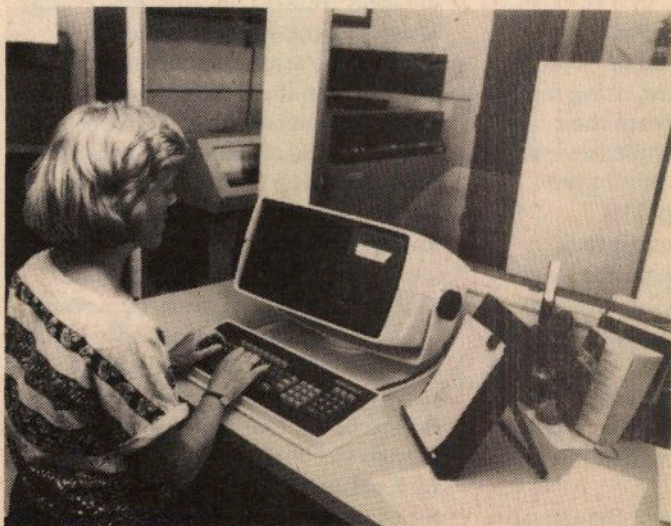


*PenDell Pittman in  
Dome Control Room.*

*Hydroponic  
greenhouse technicians  
and ranch children  
display lettuce.*



*Emissary publications  
are assisted by mini  
computer and micros.*



nullifying everyone's efforts and making us of no use to others in the area with communications needs. So last year Sunrise developed an amateur radio station — N0DZA — as part of the amateur radio message network (named the National Traffic System), and have been assigned this year to coordinate traffic in and out of the five-state region of Arizona, Colorado, New Mexico, Utah, and Wyoming. If you have interest in using the National Traffic System, feel free to contact me.

The Emissary Foundation makes regular use of a corporate jet, a Cessna Citation II. Though the running of a private plane costs money, time is saved and inconvenience reduced with a corporate jet landing at small airports near our communities. Our flight department is run like a small airline: Emissary personnel make reservation requests at their local communities which contact the central travel desk at Sunrise. Flights are then planned to accommodate travel needs. Sunrise has a full-time flight crew, and each Emissary community provides ground support for the arriving Citation.

In our use of technology the central question seems to be: What do we want to do or say? How can our purpose be best served? Sometimes the simplest, quickest way is to use no technology at all, lest more time be spent developing and maintaining the technology than would be expended by doing the job manually. Technology must remain the most effective means to a creative end — not an end in itself — or it is not useful. It is effective when it frees, connects, and blends the creative efforts of people. Given this freedom, we join in setting creation free through our finest, truest efforts in love for our world and our fellows.

Sunrise Ranch  
5569 N. County Rd. 29  
Loveland, CO 80537  
(303) 667-4675



# Ponderosa Village

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## A Self-Reliant Lifestyle

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Those here are special people.  
They have proven to be independent thinkers and  
self-starters with the initiative to take responsibility for  
shaping their lives and their community.

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BY MEG LETTERMAN

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Located in south central Washington state, 16 miles north of the Columbia Gorge, is a small community named Ponderosa Village where a group of individuals are deeply involved in a most interesting and demanding adventure — creating a whole village.

The concepts behind the village are self-responsibility and freedom, voluntary cooperation, living and gardening *with* nature, and personal and spiritual growth. Land and homes are individually owned — this is neither a commune nor a cult.

“Ponderosa Village is a blend of pioneer do-it-yourself atmosphere with the availability of modern tools and technology,” said one villager. “We like that.”

There are 18 families, with 31 adults and 11 children currently living here. There is room for about 95 more families.

“Ponderosa offers a Village library, group buying, and cooperation between members,” said another villager.

Those here are special people. They have proven to be independent thinkers and self-starters with the initiative to take responsibility for shaping their lives and their community.

“(We enjoy) having neighbors who are into self-reliance, but with whom we can share knowledge and skills and companionship,” said yet another villager.

The villagers come from a variety of backgrounds, including engineers, business owners and managers, an aerospace scientist, computer experts, cabinet makers, contractors, a well driller, teacher, mason, editor, lab technician, nurses, secretaries and a concession operator. What they are doing now may have little to do with their former occupations.

“It is the simplicity of the life and the interesting people that make Ponderosa Village a special place,” another villager said.

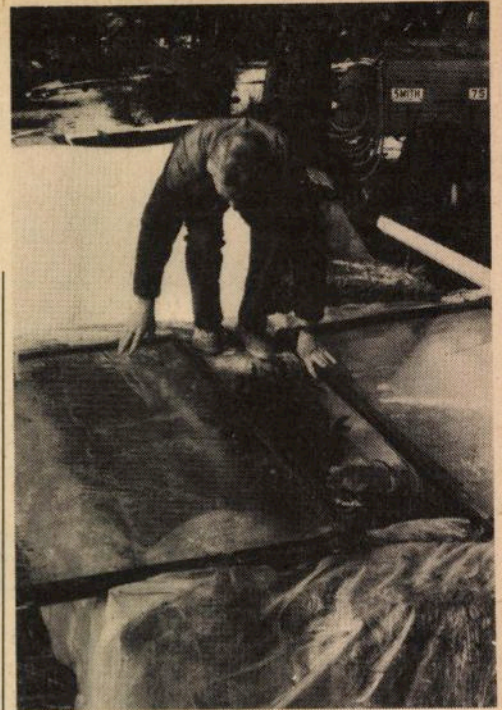
An aerospace engineer is working in a furniture factory and apparently enjoying it. The community has discussed starting

*Ben built several "greenhouses" out of bales of straw covered with plastic. The roof is glass windows.*

a village business, but so far nothing has materialized. The main reason seems to be that each villager wants to maintain his or her own self-determination. There are plans to put out a catalog of products produced here by the individuals.

The homes are varied as the people. In various stages of construction are two geodesic domes, two earth-bermed houses, a rammed-earth house, a well-insulated house, a house made with stacked timbers, a timber frame house and several more conventional structures. Out-buildings include star domes, workshops, greenhouses, a solar wood drying shed, a chick coop, an art studio and others.

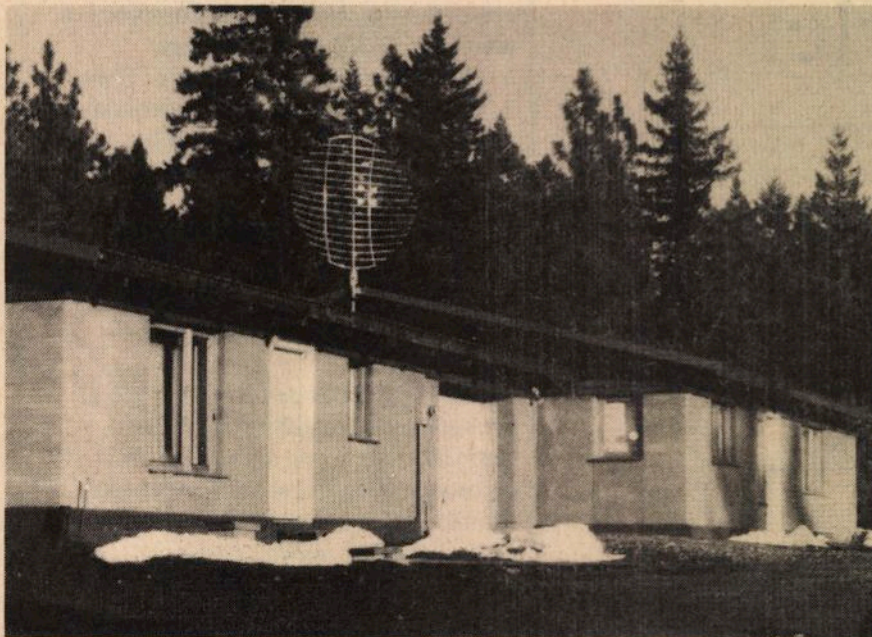
"I'm kind of playing the middle of the road on energy conservation, feeling that with the ready availability of wood fuel and the relatively mild climate, it is unnecessary to go to a lot of expense to



There are only two or three weeks of really cold weather in most winters. However, right when we need it the most, there is not much sunshine. Most of the winter days are partly to completely cloudy, with the sun shining an average of only 25 to 45 percent of the time that it could shine from its low altitude (we're at almost 46 degrees north latitude).

In the summer, there's *lots* of sunshine. Daytime highs in July and August average in the 80s and 90s, with some days over 100 (its dry though). At sundown radiational cooling through the clear air drops the temperatures rapidly, often into the 50s, 40s and even 30s! Our elevation is about 2000 feet, and the land slopes basically southward for good southern exposure. Most of the land is covered with ponderosa pines, Douglas firs and white oaks, and north of us are miles of forestland for additional firewood (with permits). The wind averages less than seven miles per hour for the year.

**W**e talked with the owners of the energy conserving buildings. Probably the most unusual for this neck-of-the-woods is the rammed earth house, with its 18-inch thick outside walls and well-insulated roof. Materials for the walls came from the dirt excavated from the site plus some sand (for texture) and about five percent Portland cement (to make sure it set up), plus enough water to just dampen the mixture. This was scooped up and dumped into sturdy forms (1 1/4 inch plywood with strong backs) and rammed



*The finished rammed earth house is attractive and comfortable.*

save or collect energy."

That's how Ken, a 70+ year-old who is building his own house, summed up the general attitude here. Our situation is this: winds from the Pacific Ocean stream up the Gorge, making our climate relatively mild — winter nighttime temperatures average in the 20s, daytime in the 30s.

with a hydraulic "jumping jack." The wall is solid immediately, so that the forms can be removed and used for the next section of wall. The family has lived in this house for over a year now. We asked Ben, a former aerospace engineer, to tell us about the house and how it was working.

"One of the first things people ask is, 'What is the R-value?' It's probably quite low, which doesn't sound good," Ben said. "The sneaky thing about R-value is that it only measures conduction, and the important things about rammed earth walls are the thermal mass and time delay. Warmth collects on the outside during the day and slowly makes its way through the wall, getting to the inside about evening, and the 'coolth' of the night soaks in about in time for the heat of the day.

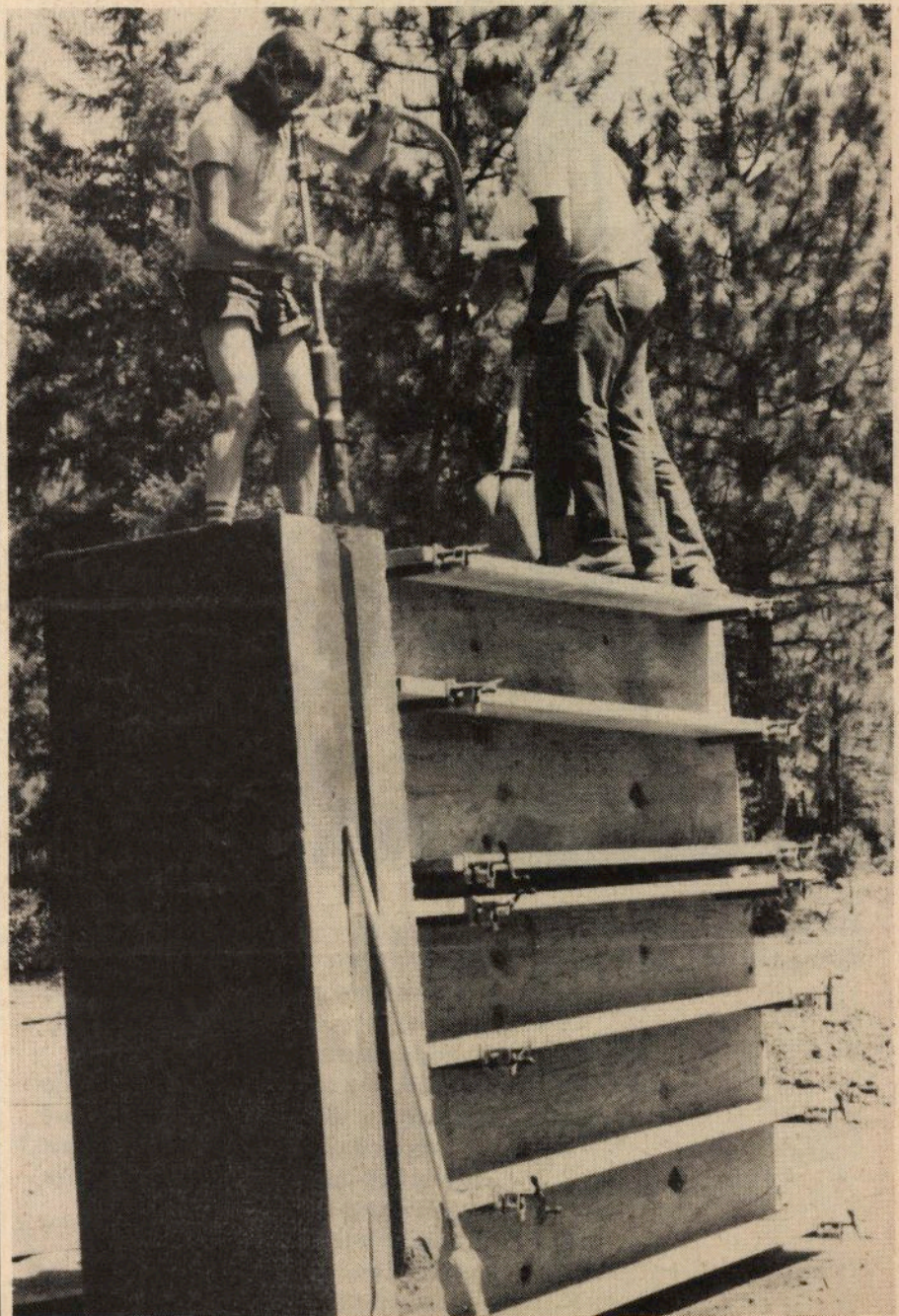
Last winter, we had only plastic over the window openings — three layers of it, but in spite of that, we were quite comfortable and did not burn an undue amount of wood. This summer I made double-glazed wood-framed casement windows. Wood is far less conductive than the metal frames on most windows. Also, this fall we insulated the outside of the north wall with 1½ inch of polyisocyanurate high R sheathing with foil on both sides. We protected the outside of that with waferboard. That combination probably has an R-value of 12 to 15. Now the whole north wall is thermal mass for the interior of the house, instead of being a heat loser. The effects we've noticed so far are that even if we don't have a fire for 24 hours, the temperature doesn't change much, and when we do start a fire, the temperature gain is much more rapid than it used to be. It's working so well that we may continue to insulate at least the northern walls of the east and west walls.

"On the south side, we plan either a greenhouse or a solar wall made with the single-pane sliding glass doors we got for a low price from an apartment house in Goldendale that was replacing them with thermopane. The solar wall will provide

an air space to trap a lot more solar heat and prevent it from being blown away. The huge thermal mass in our walls trades off against R-value if we have solar gain. I think we'll make this house work really well eventually. We're still experimenting.

"We're supplementing the solar heat with a space consuming wood stove now, but are in the process of building and

*The 18-inch thick rammed-earth walls in construction.*





*Ted's dome and some friends during a 'dome raising'!*

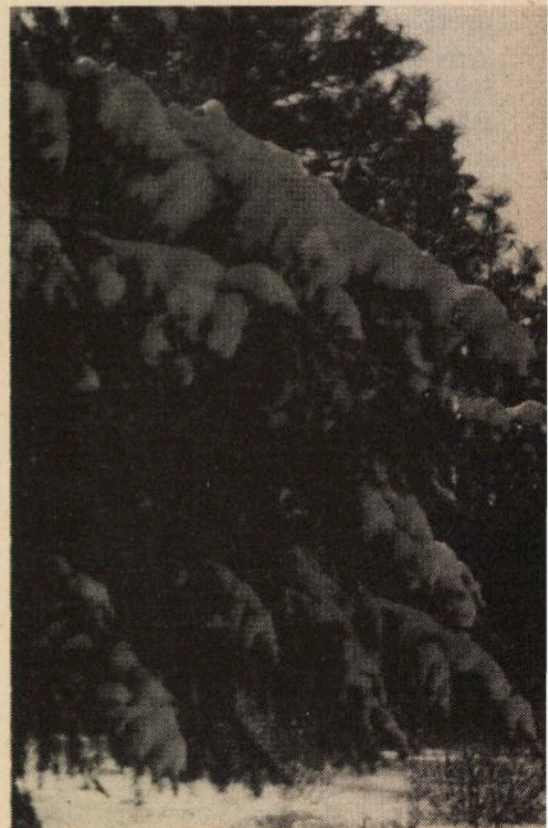
equipping a furnace room out back. We have a 500 gallon tank and a wood-fired boiler with automatic draft control surrounded by a water jacket. Hopefully the heated water from the boiler will thermosiphon to and from the tank. The idea is to fire up the boiler with a hot fire only once a day or so, at our convenience, and store all the BTUs in the tank. When heat is needed in the house, the thermostat will turn on a circulating pump and run the hot water through what amounts to a fancy radiator with a fan

behind it. The storage tank will also have a coil for preheating the domestic hot water before it goes to the water heater.

"You saw us building into the floor our insulated hot water loop. When we're home, we'll run the hot water around the loop continuously, so that whenever we turn on the faucet we'll get hot water quickly without wasting heat in the pipe and water down the drain. I've also plumbed that loop so I can tap off it in several places to add radiators, or whatever type of hot water heating system I want. The little pump that circulates the water is only a 1/35th horsepower — runs on just a few dollars a year.

"How does this place function in the summer?" we asked.

"Oh yeah, it does get hot around here — hard to believe today (temperature outside about 15 degrees)." Ben said. "Last summer when we had quite a long spell of 90-degree temperatures, it stayed comfortably cool inside for two to three weeks. When it



finally started to heat up, we opened the low and high vents and continued to stay reasonably comfortable. Of course, we still had plastic over the windows, so we didn't have as much control as we will have next summer. We'll be able to open the windows at night and let in the cool air, then shut them in the morning. I think this house works really well in the summer," Ben said.

"And out back you have small citrus trees and other plants in some innovative greenhouses," we pointed out.

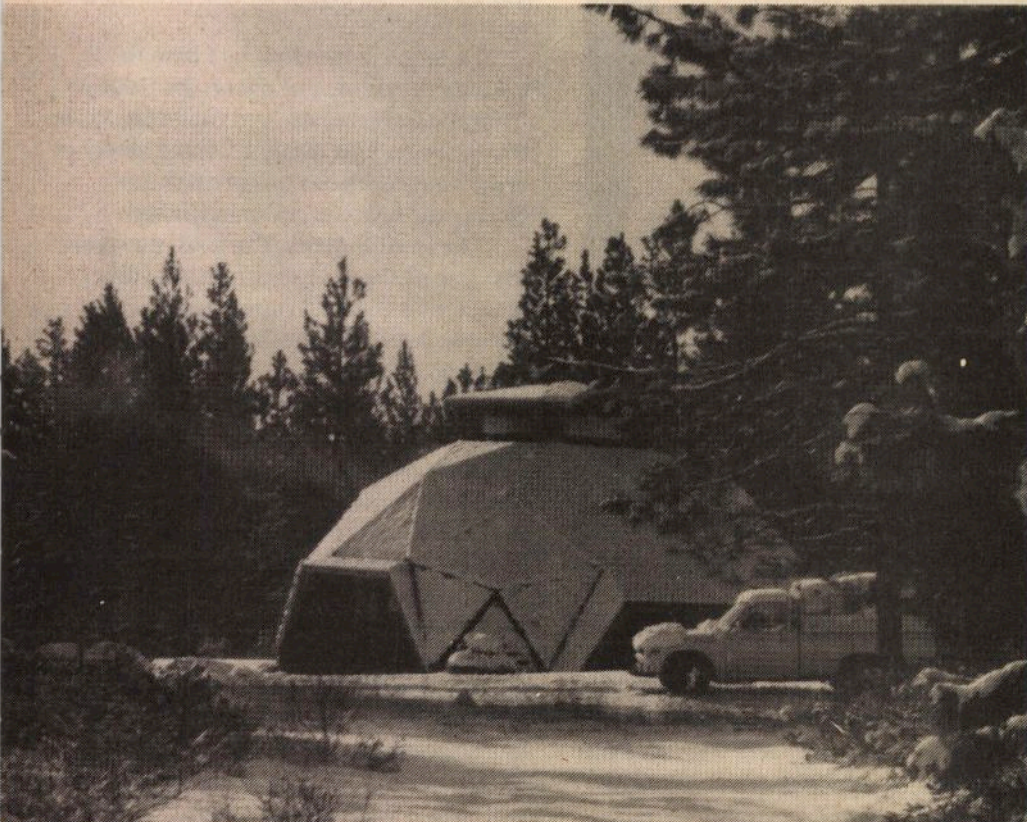
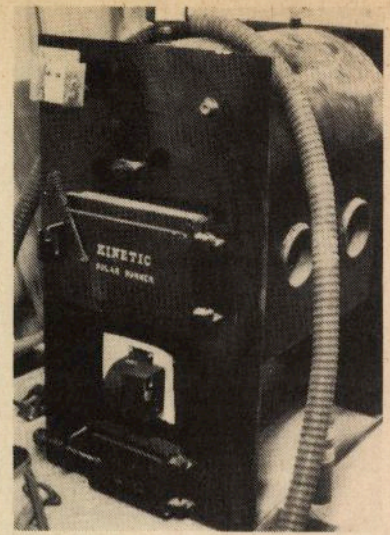
"The set-up is only temporary — I wouldn't call them greenhouses — but so far nothing has had any frost damage. We built them out of bales of straw piled on top of each other like bricks. Plastic sheeting covers them to keep them dry. The opening is 'glazed' with the recycled glass doors I mentioned before, and I put a light bulb in each to provide a little warmth when needed. At night, on cloudy days, and when the daytime temperature is in the teens or lower, I cover the glass

*A kinetic solar burner*

with styrofoam panels. So far, even at zero degrees, the plants are doing fine."

We went across the road to talk to Ken, a former psychiatric nurse, about his earth-bermed house.

"The house will be bermed on the north and west walls," Ken said. "Instead of the usual concrete, I decided to make those walls pressure-treated (Wolmanized) 2x6s and plywood. They are insulated — probably R-19, as are the other walls and the roof. The south wall is about 75 percent double glazed glass for solar gain. The garage, laundry, and storage space are located on the north side to provide for further insulation for the living space. I'll put R-11 in those walls. To provide for good air circulation in my house, I put 8-inch tubes under the floor to return cool air for the north side. And I will not run bedroom partitions all the way to the roof. I'll use one of those Casablanca type fans to circulate the air. I'm bringing in outside air for combustion in the stove.



*Inside Tim's greenhouse barrels of water are used as solar collectors.*

"You might mention that I have established the eave angle and length to exclude the sun in summer and admit as much of it as there is in the winter. Also with the clerestory windows, I get a lot of light without having to use electricity in the back part. And I'll be able to open them in summer to vent hot air."

We asked Ted about the energy features of the 45-foot dome he and Lisa have occupied for the last year and a half. Ted is a former concessions operator.

"One of the things that attracted us to the dome was that studies show them to 50 percent more energy efficient than conventional houses of the same size, even with only R-11 in the walls and roof. We have incorporated large thermal gathering windows in the side openings of the buildings and skylights in the roof. On sunny winter days, we usually do not have to start a fire in our woodstove, the only



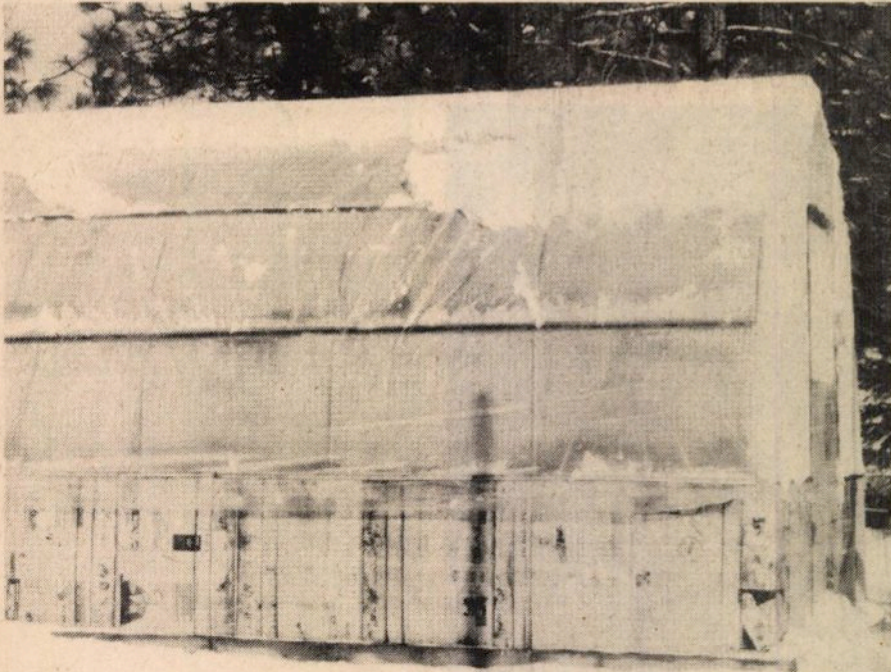
from the stove can rise and move around the ceiling, and, as it cools along the north side, it can drop through the spaces I left at the back of the loft, returning to the living room. I *know* it's working because if I forget to turn the damper before I open the stove door, a little smoke comes out. Within 30 seconds, I can smell that smoke clear on the other side of the house on the floor!

"To make it even better, I plan to insulate the floor, put tile on the floor in front of the windows, and rock behind the stove. When I get done, I'll have *plenty* of heat. I may even have to provide for getting the heat out, even in winter!

"The local Indians, I'm told, have said that one of the foolish things the white man does is to build square houses. Besides, I think domes are more aesthetic."

Tim's well-insulated house incorporates many of the features already mentioned in the other houses above. The walls have insulation values of R-21, the south side roof R-33, and the north R-43 or so. With Tim, an industrial engineer, we talked mainly about his "greenhouse" and his solar wood drying shed.

"I wouldn't call what I have a greenhouse. I refer to it as a temporary growing space, but I admit it looks more like a greenhouse than Ben's. I used copper conduit for the structural ribs, with wood cross-pieces running



*Recycled photo-offset "plates" were used as covering for the kneewalls of Tim's greenhouse.*

supplemental heat we use. Because of the shape of the dome, the air circulates around the house very well. There's a loft across two-thirds of the dome, with the opening over the living room. Warm air

horizontally, onto which is tacked the plastic covering. The lower walls are covered with used aluminum plates from a print shop. Late in the summer, I insulated all of the north side and the 28-inch kneewall on the south side to provide protection around the plants themselves down near the ground. I also added four 55-gallon drums painted black and filled with water for thermal mass. Adding the barrels helped tremendously — I'd like to have at least two more. The tomatoes were not damaged by frost until the middle of December after we had had three cloudy days with the temperatures in the teens and twenties all day long. A 12-degree night finally got them. With supplementary heat, I could have saved them, but I decided it wasn't worth it in December and January around here."

"What about your wood drying shed?" we asked.

"The wood shed is 7 feet by 15½ feet. Stacked all the way to the rafters, it holds about four cords of wood. I used a metal grate as the floor, with space under it that opens to the south. A sun-heated air collector running down the slope provides warm dry air to the wood shed. The air will flow through the wood and be vented at the top on the north side of the shed."

My husband, Larry, a former aerospace scientist, and my (I've edited newsletters) earth-bermed house incorporates some of the same features as Ken's earth-bermed home. It's bermed on two sides, with 2x6 construction of outside walls, tubes under the floor for air circulation, overhead fans, eave angle and length and outside air supplied to the stove. In addition, the northern part of the roof will be earth-covered; there will be a greenhouse on the south side with vents and/or heat exchangers in and out of the living quarters; a hot tub connected to the greenhouse for thermal collection and storage (also to be used as a preheater for domestic hot water); earth tube to temper incoming fresh air both winter and summer; masonry fireplace for thermal mass; adjustable vents between floors and

between upstairs rooms and flue plenum; storm entrances; roof vents to exhaust hot air in summer; attached root cellar for storage without refrigeration; "demand" hot water heater. Parts of the house can be isolated from each other to conserve warmth or 'coolth.'

Saving energy means saving money, and that's important to the villagers. All



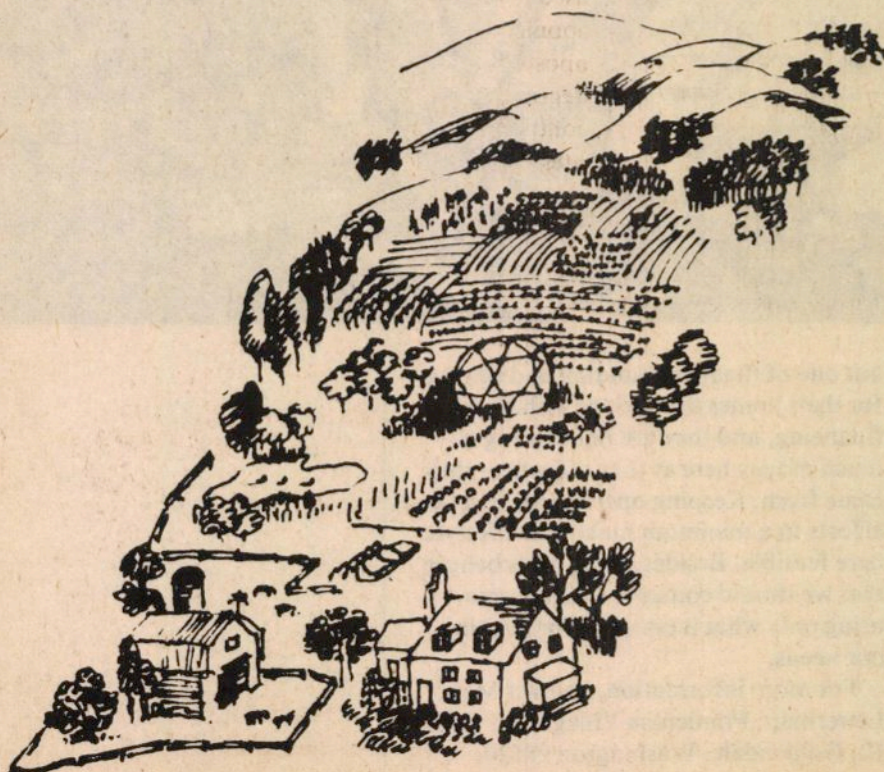
but one of them are building and paying for their homes themselves with no bank financing, and they are not earning as much money here as they did where they came from. Keeping operational costs and efforts to a minimum makes the lifestyle here feasible. Besides, most of us believe that we should conserve all resources, using only what is essential for meeting our needs.

For more information, contact Meg Letterman, Ponderosa Village, Rt. 1, Lot 17, Goldendale, Washington 98620. □

# THE WINDSTAR BIODOME

## PROJECT

Windstar's Biodome is a solar heated dome structure that provides an environment for high yield food production integrating horticulture and aquaculture. When the Biodome is combined with traditional agricultural methods it provides a year round local supply of fresh food. Project research is exploring a family of designs to adapt the Biodome to different climates. At Windstar, prototype Biodome designs are producing fish and vegetables in a cold mountain climate. Backyard gardeners, small family farmers, community groups, and specialty commercial growers can adapt the Biodome design to meet their food growing needs.

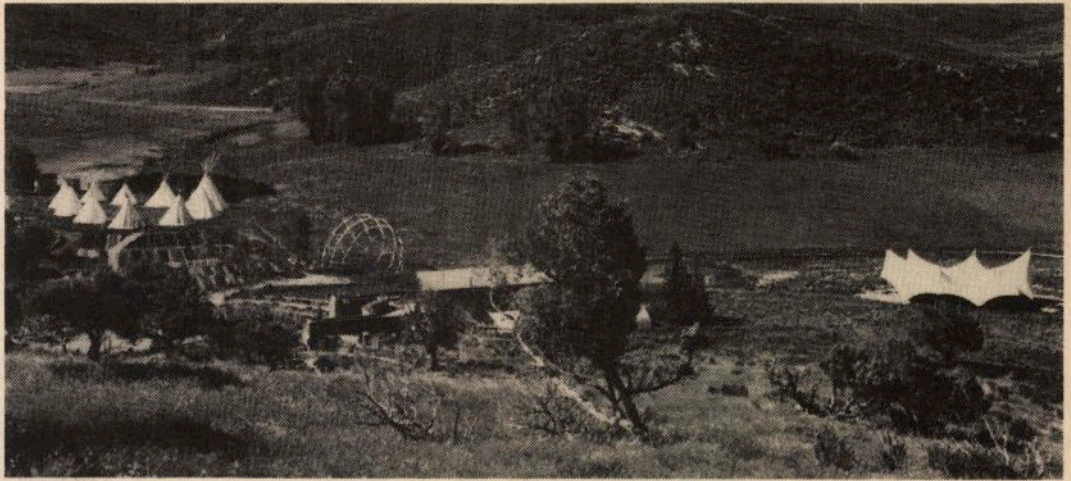


## The Biodome Structure

The Biodome design utilizes the concept of the "basket weave" (deresonated tensegrity) dome developed by Buckminster Fuller. This type of dome requires less structural material than a conventional geodesic dome. Windstar developed the innovative connecting hardware which makes it possible to use standard pipe as the main structural component. An inflated plastic double layer skin is attached to the structure creating a durable and effective greenhouse glazing. Dome structures enclose the most volume with the least amount of surface area. By filling the volume of space with planting systems rather than just utilizing the ground floor area, a very high density of food production can be achieved.

The double layer inflated "pillows" are made of new, long lasting plastic materials. The outer skin of the pillow is made of a polyester film coated for high light transmission. The inside layer of the pillow is made of a polyester film with a metallic coating (Agrifilm 88, Southwall Corporation). The inflated pillows allow the sun's energy in while reflecting heat back into the dome. These plastic materials optimize





performance factors such as insulating value, light transmission and durability. The pillows have an expected lifetime of 12 years.

The skin of the Biodome can be altered to operate in a wide range of climates. The structure itself will withstand high winds and extreme snowloads. The Biodome can be assembled with hand tools. Each of its structural members weigh less than 20 lbs. and can be positioned by hand. The Biodome has great potential as an efficient, cost effective greenhouse kit structure.

## The Solar Greenhouse

Traditional greenhouses require fuel based energy inputs for heating and cooling. The Biodome looks to

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*“I consider Windstar to be the number one priority in my commitment to positive transformation on this planet. It is a project worthy of everyone’s support. I invite you to participate.”*

*John Denver  
Founder and President  
Windstar*

the sun to provide passive solar heating and cooling. By integrating aquaculture into the greenhouse system energy is stored in a unique passive solar design.

Growing beds on different levels within the dome are combined with the fish ponds to put more area in food production than the land area occupied by the dome. Pond water serves as thermal mass as well as a growing medium for fish and aquatic plants. The pond is also a source of nutrient rich water which is used to irrigate the Biodome’s hydroponic system. Plant wastes are composted and recycled in the dome. Integrated pest management is used to control insects. Different microclimates within the Biodome provide environments for a diversity of species.

For regions without electricity, power can be provided with a photovoltaic panel system which converts the sun’s energy to electricity and then stores it in batteries. Although the electrical uses are small they are important to support a high density of food production. The electrical functions of the dome includes fans for ventilation and pumps for water circulation and pond aeration. This independent power option widens the range of potential locations for a Biodome.

Harvest from the Biodome can be planned on a year round basis enhancing the productivity of outdoor food production. The extremes of weather are moderated by the Biodome, creating more resiliency in a food system.

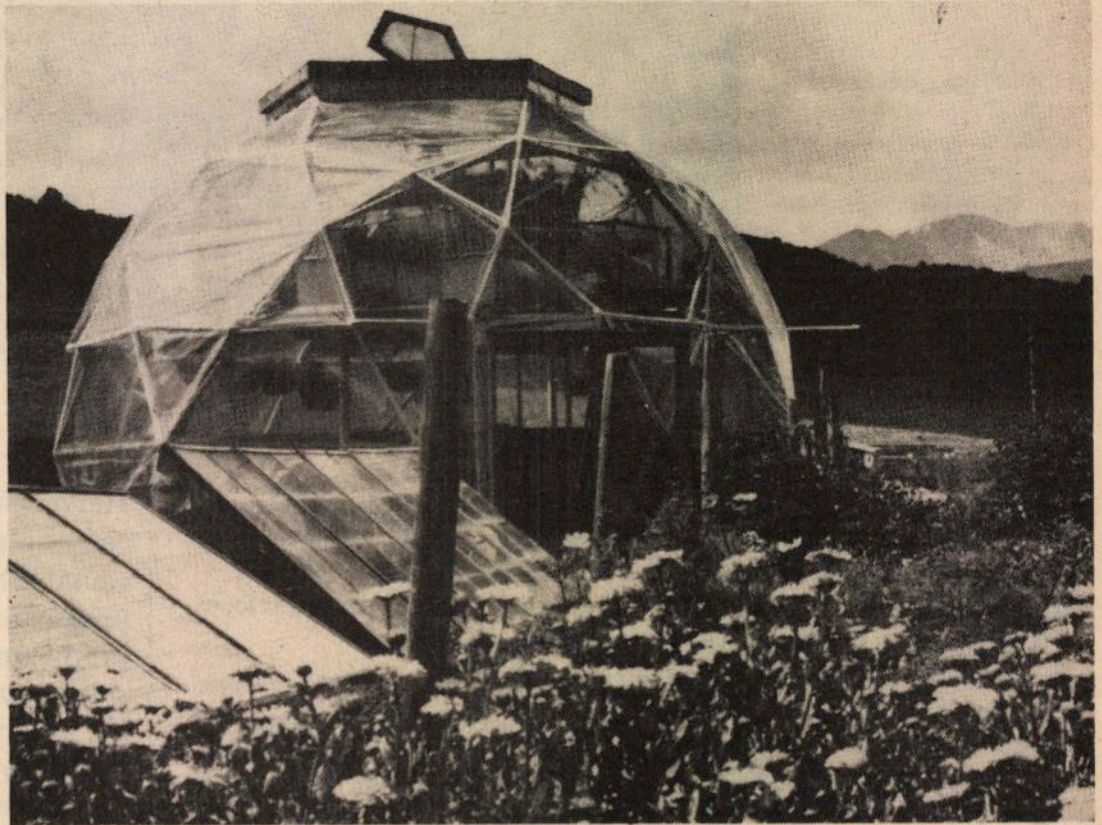
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The semi-closed environment and the small land area used by the Biodome allow it to be placed in different climates and in a variety of rural and urban settings. It has great potential to increase food production in marginal growing areas. The Biodome can function by itself or be integrated with outdoor agriculture.

## Sustainable Agriculture

Today there are a number of problems facing agriculture. Among these are the erosion of our topsoil, extensive use of pesticides, the declining rural economy, the dependence on fossil fuel, the depletion of our aquifers, and the disappearance of the small family farmer. The Biodome is part of the work in sustainable agriculture that addresses these fundamental

## EXPANDING POSSIBILITIES IN THE GROWING OF FOOD



problems. The Biodome concept demonstrates a practical method of producing fresh food locally that conserves water, land and energy.

### How You Can Participate

Windstar welcomes your comments and ideas on the Biodome Project. You are invited to attend workshops and lectures to learn more about the Project. Each summer, internships and apprenticeships are offered at Windstar on the Biodome Project.

Windstar's projects are supported by tax deductible contributions. Your financial gift is one important way to participate in the Biodome Project.

Windstar is a non-profit education, research and demonstration center

co-founded by John Denver and Thomas Crum. It is located on 985 acres high in the Rocky Mountains. Windstar's purpose is to find workable approaches for a sustainable future. A major focus of Windstar is to create viable alternatives in energy and food production and to demonstrate the interrelationships within these systems.

Windstar would like to express its gratitude to all the people who have contributed their ideas, time, energy and funds toward the success of the Project. We would also like to thank the following sponsors that have made the early stages of the Biodome Project possible.

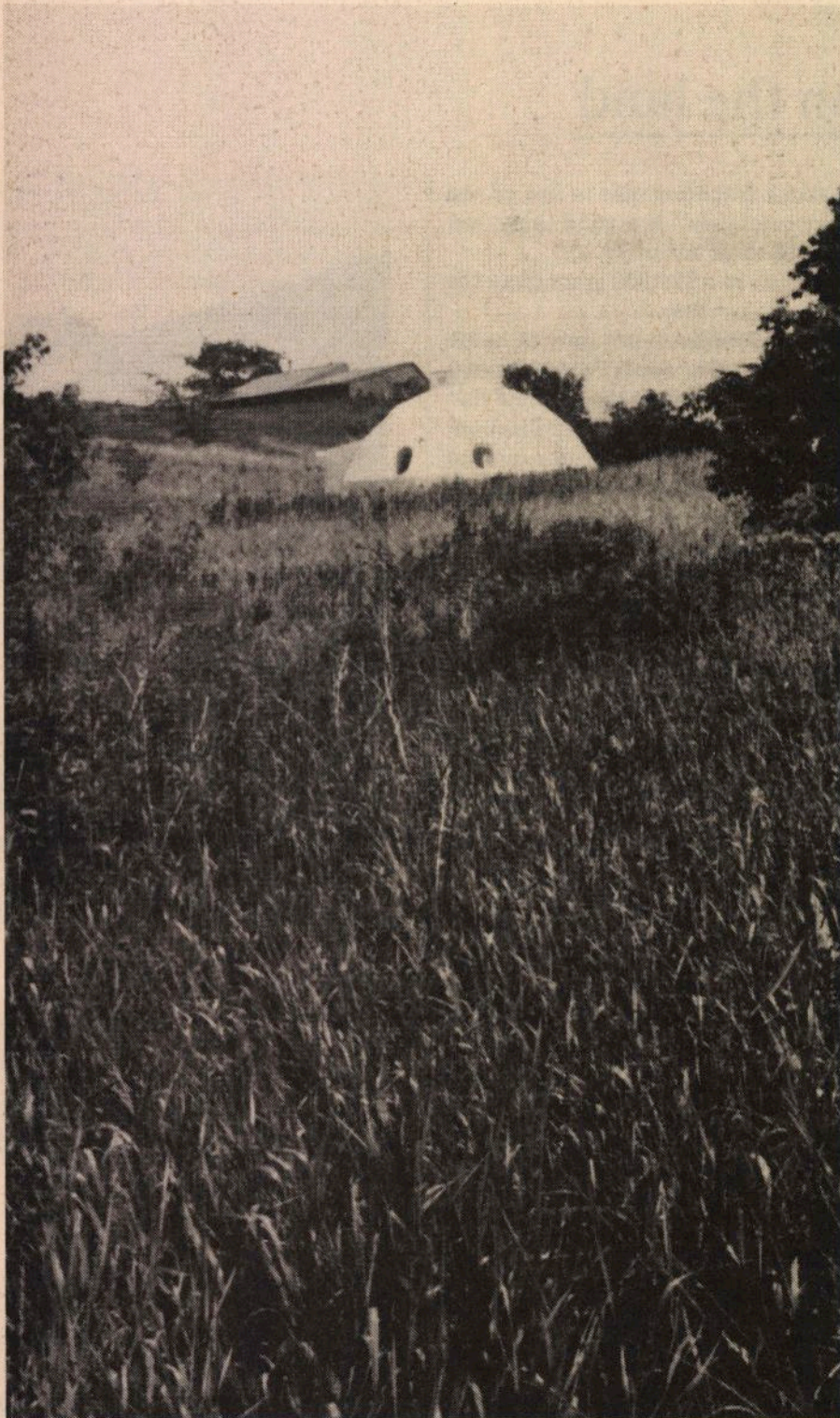
David Dulaney, MD  
The William H and Mattie Wattis  
Harris Foundation  
The Vidor Foundation

Solar radiation passes through an inflated pillow system providing light for photosynthesis and passively heating fish ponds. The inflated pillow system has a heat mirroring surface which reduces heat loss at night.

---

Southwall Corporation  
3M Corporation  
Ted Goudvis  
Energy Savers Imports  
Anne Cooke

For more information write to:  
**The Biodome Project**  
Windstar Foundation  
Box 286  
Snowmass, Colorado 81653



# WALK GENTLY ON THE EARTH

*“To walk gently on the earth,  
to know the spirit within, to  
hear our fellow beings, to  
invoke the light of  
wisdom — and to build the  
future now.”*

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This credo expresses a vision that has drawn 300 Associates from around the country and abroad to support the High Wind Association's experimental work in exploring ways of creating a more harmonious balance between people and nature. Most of this work takes place on a 46-acre farm on high rolling land in rural Wisconsin, 55 miles north of Milwaukee.

Drawing on earlier experiences with New Alchemy, the Findhorn Community and Lorian Association, the founders first organized a series of innovative seminars and conferences, often in conjunction with the University of Wisconsin.

High Wind's physical expression began in 1980 with a task group to build a "bioshelter." This evolved into a community, combining education with interests in ecology, shelter-building and renewable energy—all seen in the context of an overarching sacred intent. Our overall governance is by a board of directors, including a number from the farm. Decisions about the functioning at the farm are made by the residents. Nine people live full or part time (in four buildings), engaged in such activities as organic gardening and guest/learning programs.

High Wind operates the major alternative bookstore in Milwaukee and maintains a networking base in the city. Its substantive quarterly newsletter details the philosophy and challenges of daily life in the community, its gradual evolution toward a sustainable village (we've just acquired an additional 20 acres), and the relationships between alternative models and mainstream culture.

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LISA PAULSON

# Strategies for living lightly on the land

At the High Wind farm one of our central tasks is exploring how to live on the earth: To be interested in living lightly or "appropriately" is a good thing, but what, in the minute particulars, does one intend to do about it?

High Wind had this in mind in 1980 when it received a \$25,000 grant from the U.S. Department of Energy to start building a "bioshelter."

A bioshelter is generally thought of as a building designed not only to house people but to function as a place to more fully meet their needs, with resultant savings, most notable in energy. Agriculture is at the bottom of the pyramid that makes up all cultures. This is no less true of contemporary Western civilization, although we tend to lose sight of that fact. Yet the fundamental non-sustainability of our agriculture is increasingly apparent. It depends, for one thing, on a heavy investment in non-renewable energy. For another, it is using up, rather than conserving, soil and water. If a living environment can be fashioned that functions in miniature as does the planet, being solar powered and recycling everything while sustaining life, we will be able to suggest part of a solution to the non-sustainability problem.

Our particular bioshelter is a 76 by 31-foot structure of fairly conventional construction. It is superinsulated and is part passive solar residence and part demonstration/research greenhouse. The goal for this building is to explore the possibilities, in a challenging northern climate, of a family being able to live more independently of the market economy than we might generally expect. This means the ability to raise a significant portion of food needs, provide heating and cooling and recycle wastes, all largely under solar power.

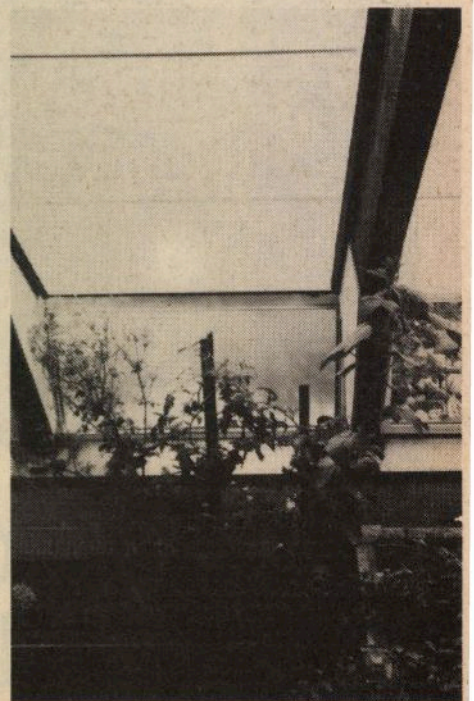
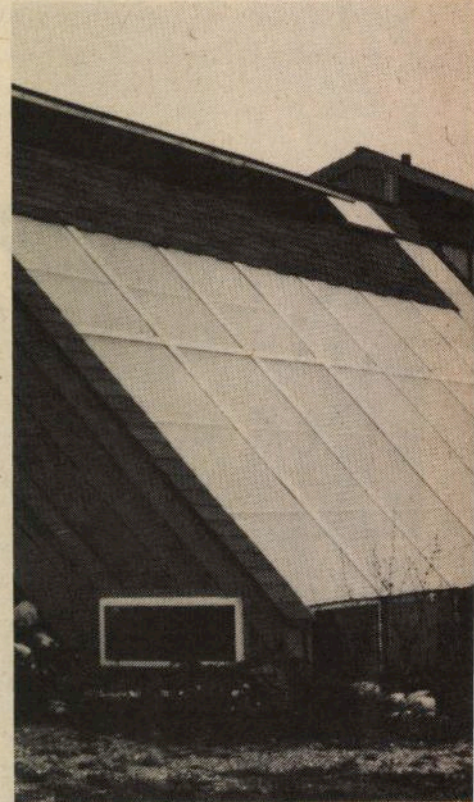
We might suggest a parallel to the old architectural phrase for a house as a "machine for living": the bioshelter as "organism for living."

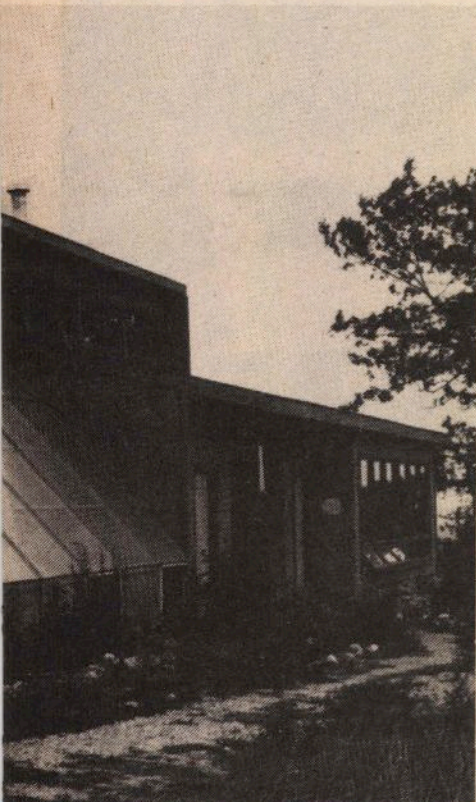
The core of the scheme goes something like this: In a passive solar greenhouse you need something to soak up the solar "gain" on a bright day. A good candidate for this is water, with its high thermal density and conductivity. So why not have big water tanks in the greenhouse, and make them do double duty by using them to raise fish? Further, the water in this closed system needs to be purged of its fish wastes, so what better thing to do with it than nourish plants? Some of you will recognize this idea: the New Alchemy Institute on Cape Cod, and others, have been working along these lines for years. We want to contribute to this research and find out what form it needs to take to be viable, graceful and, not least, cost-effective in our region.

What we have now is the basic building. The residence side is generally complete, although it lacks some of its essential night insulation for the windows, some of the thermal mass and air handling system to maximize solar gain and other details. We have been using the greenhouse side in a minimal way, but the full, integrated growing system has yet to be designed in detail, and built.

What we have in mind at present for the aquaculture facility is two growing modules of about 1,000 gallons each. These will consist of two tanks apiece and will probably include a biodisc filter and clarification system, much along the lines of the Rodale-developed scheme. We plan to start with a layout that will lend itself to modifications, so we can try various aquaculture and hydroponics experiments.

High Wind has been experimenting with other types of alternative building systems as well, with an eye to low cost and energy efficiency through use of unconventional materials. The third of three domes is about completed; it is 23





feet in diameter and is built from one-foot-thick styrofoam blocks with a wall insulation value of R-45. It is covered on both sides with a fiberglass-reinforced cement material and has no other supporting structure. We expect it will come in for about \$12 per square foot.

There have been some problems. Domes always have a potential for leakage, and this one has been no exception. It appears that a structure of this size really should have some control joints in the outer skin to prevent cracking. The tiniest crack in the roof part of the skin causes a leak, and we've had a few. We think we have solved this problems with the application of a two-coat elastomeric roofing material. Time will tell. Yet the building is beautiful and we feel it has real potential. The use of large panels of styrofoam in more conventional construction also has definite promise. It seems to reach cost-effectiveness in building schemes in which it is self-supporting and needs little or no other structure. There are several commercial systems available for the coatings which yield very pleasant finishes.

High Wind is above all an evolving experiment in community, and its work in building shelters—not to mention its organic gardening and an array of educational programs—are all part of its unfolding activity.

If you are interested in visiting the High Wind Farm you should write: High Wind Association, RR 2, Plymouth, WI 53073; or call (414) 528-7212. For more general information or details about upcoming programs contact our Milwaukee office: 2602 E. Newberry Blvd., Milwaukee, WI 53211, (414) 332-9503.

DAVID LAGERMAN

## Community dilemmas

Alternative communities present in fairly exaggerated ways some of the dilemmas and paradoxes of a changing culture. The mysteries therein provide tension, but also unleash creative energy as they explore useful approaches in dealing with daily personal issues as well as planetary concerns. Here, by way of illustration, are six such dichotomies, drawn from High Wind experience, that work out thier own balance into a new integration.

### 1. Elitism and diversity —

Alternative communities get their internal cohesion and strength through shared visions and values and “sounding the note” in defining their purpose. This opens them up to-being called elitist—an elitism not in terms of socio-economic factors but in their values. Yet their ultimate importance is their relationship to the diversity of the larger society.

### 2. Public learning center and place for personal growth —

Alternative communities potentially have a special role to play in creating and testing new models, and communicating and sharing their findings and process. The participants, however, have their own individual needs of growth, family nurturing and private space free from any public involvement.

**3. Outside and inside the system —**

By their very nature, alternative communities challenge the status quo on many fronts; in effect, they embody alternatives to various aspects of mainstream culture: growing food, building shelter, land use planning, making decisions, and so forth. At the same time there is need for a certain degree of credibility that comes from working with and participating in existing value and institutional systems.

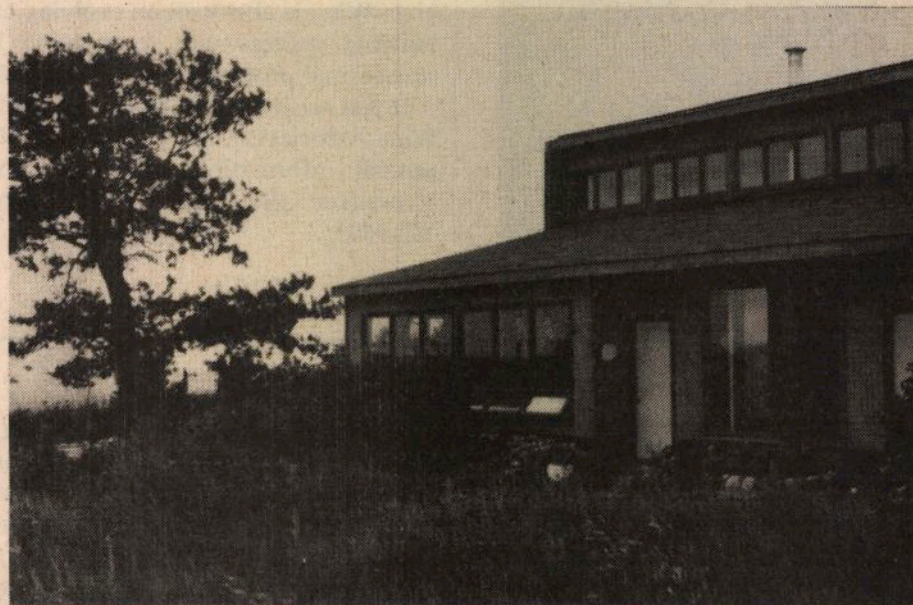
**4. Economic insecurity and market economy jobs. —** Many participants in alternative communities have dropped out or would like to drop out of models for earning a living as practiced in the existing market-oriented economy.

Nevertheless, this economy controls most of the wealth, sources of money, and welfare and social benefit systems that affect one's material well-being.

**5. Transformational leadership and pragmatic leadership —** Participants in alternative communities make conscious efforts in redefining the ways that power is used. Honest attempts are made to move away from adversarial relationships, to resolve conflicts without cementing rigid majority and minority positions. Nevertheless, particular individuals and sub-groups wield special influence, and there is sometimes a thin line between effective governance and paralysis from complete dependence on consensus.

**6. Playfulness and crisis orientation. —** Alternative communities tend to be unusually sensitive to the precariousness and manifold crises facing humanity and the planet at this historic moment. Yet having fun, being able to laugh at one's foibles and efforts, being adventurous, taking time for appreciating nature and beauty, celebrating, are intrinsic to communities that work.

BELDEN PAULSON



**A Living/Learning Seminar in Alternative Communities**

A Living/Learning Seminar in Alternative Communities will be offered in spring 1986. Sponsored by three communities and the University of Wisconsin, this unique three-month experience will give participants the opportunity to live at High Wind, Findhorn in Scotland and Eourres in the French Alps. The seminar begins the last week of March, 1986 and ends about mid-June. It is offered for academic credit or on a non-credit basis. Twelve people drawn from all over North America participated in a similar seminar last fall. After more than fulfilling expectations, that experience prompted us to build on that model for next spring. For more information about content, registration and cost, contact Belden Paulson, University of Wisconsin, 929 N. Sixth St., Milwaukee, WI 53203, or tel. (414) 224-4040.



## E.T. FOAM HOME (EMERGING TECHNOLOGY)

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BY TIM WILHELM  
AND GARY HOUK

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For over twenty years, the residents of the community of Stelle, Illinois have been actively seeking and exploring better ways of living, particularly in the areas of self-development, self-government, and self-sufficiency. One major aspect of the community of Stelle is its function as an experimental workshop where models for community level self-sufficiency can be tested and monitored.

The Stelle Group established an Office of Technology in 1978 to research and develop various self-sufficiency systems and machinery items. In order to provide a viable alternative petroleum for both transportation fuel and industrial chemicals, we began experimenting with the production of industrial-grade alcohol made from corn. In 1980, the U.S. Department of Energy awarded The Stelle Group a \$50,000 grant to compile a design package for a 1,000 gallon per day fuel-alcohol production plant. (The completed design package is available for \$17.50 from: National Technical Information Services, 5286 Port Royal Rd., Springfield, VA 22161. Telephone: 703-487-4600. The 185-page report includes an illustrated report and specifications on the pilot plant we built, operating procedures, regulatory information, and financial worksheets.)

A number of the houses constructed in Stelle have served as "prototypes" for experimenting with active solar, passive solar, earth berming, and thermal envelope concepts in a build-and-test search for the most viable alternatives in housing.

In our continuing search for utilizing solar energy. The Stelle Group applied for and received a \$52,000 grant in 1983 from the Illinois Department of Energy and Natural Resources to demonstrate the effectiveness of applying "solar greenhouse" criteria to a commercial-sized greenhouse. Why the interest in solar

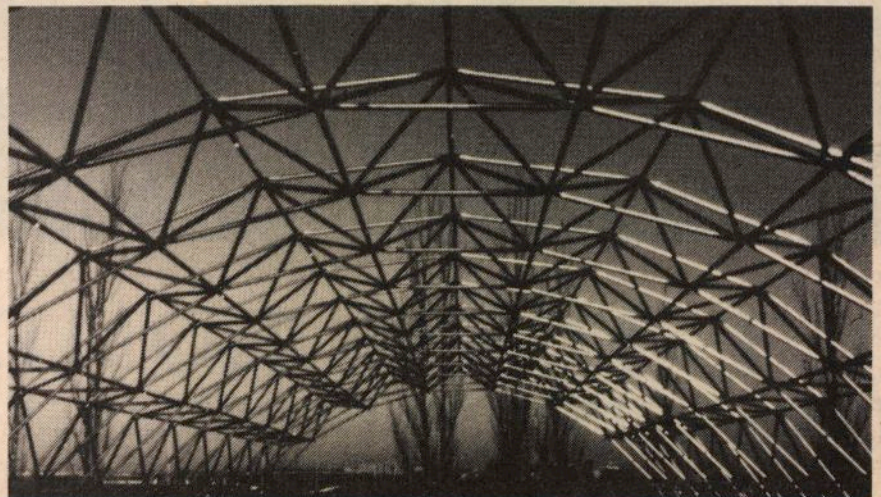
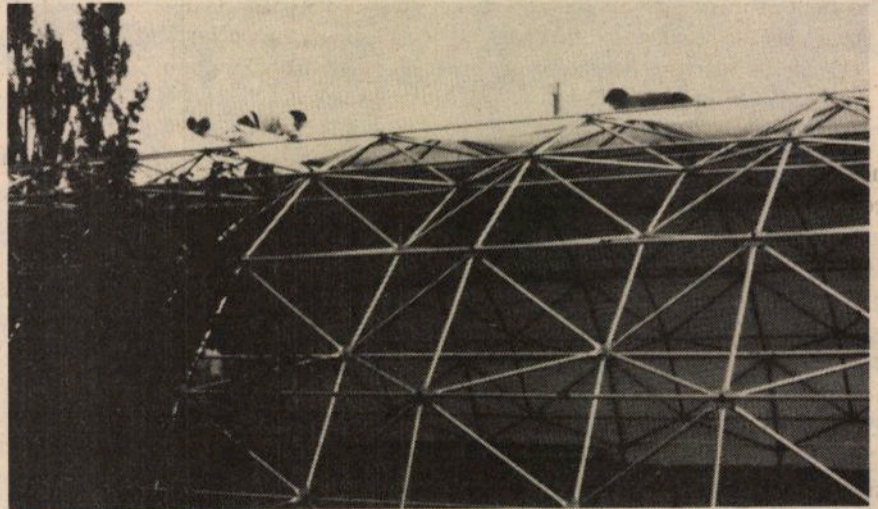
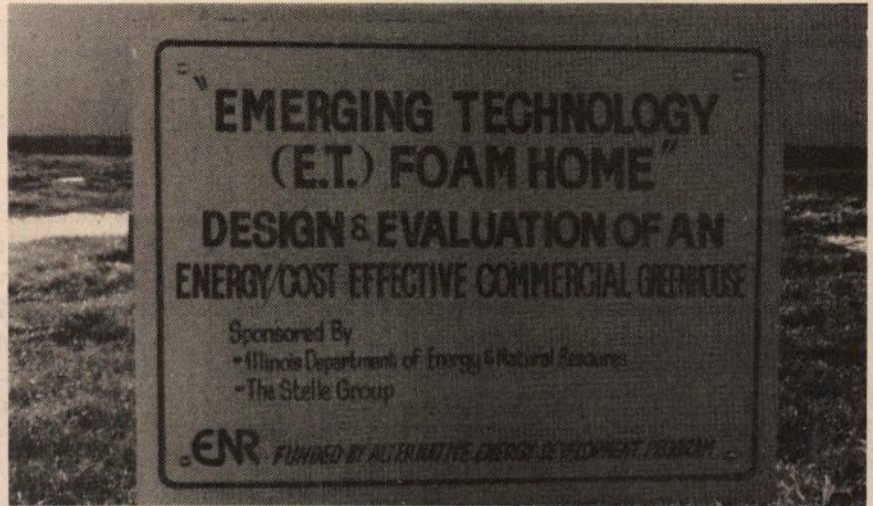
*The typical commercial greenhouse is not an overly impressive structure. In fact, there is hardly anything to it. And, while it is generally an inexpensive building, it is also lacking in structural integrity.*

greenhouse technology? To answer that, perhaps a little history would be helpful.

A number of commercial growers in the greenhouse industry have reported that heating and energy costs account for as much as one third of their total operating expenses, and the costs of electricity and heating fuel continue to rise. Further, it is common knowledge that the traditional commercial greenhouse is a gluttonous "energy hog." Being totally skinned with a single thin sheet of glazing material and employing virtually no thermal insulation, heat supplied by the furnace freely escapes, and no significant portion of solar heat gain is able to be trapped for later use. In fact, on bright winter days, heat from solar gain is quickly vented to prevent high temperatures from developing in the greenhouse, while at night the furnace pushes hard to keep the inside temperature from dropping too low. The modern version of the traditional greenhouse is a simple frame, covered with a double layer of polyethylene film. By substituting double-poly glazing for a single layer of glass, fuel consumption can be cut by as much as 25%. The double-poly technique is a sure step in the right direction, but only one of several that could and should be taken. For these reasons, energy conservation and solar energy techniques have the potential for making a positive and significant impact on a commercial growing operation.

For a greenhouse to be defined as a "solar greenhouse" the following criteria apply:

- orientation of the longest face of the structure along an E-W axis, so that the long face is azimuthally perpendicular to the sun's rays at solar noon; longest side facing the sun.
- insulation applied to the entire





- north face of the structure, protected with an all-weather siding.
- use of a double-skin glazing on the full south face of the greenhouse.
  - the installation and effective use of an intermittent, nocturnal insulation to cover the "window" (glazing) during sunless hours.
  - the installation of a reflective surface on the interior of the north wall to direct light onto the north side of the growing area (according to the Brace Research Institute this technique can increase the effective luminosity, resulting in up to a 20% increase in plant growth.)
  - the installation and effective use of a heat storage system to trap and store excess solar gain, in order to release it into the heated space as needed during sunless hours.

The "solar greenhouse" concept is not new, nor is the application of the concept unheard of. However, to date its only common use has been in small, private, hobby-scale greenhouses (more often than not) attached to the south side of a residential structure. It appears that the reason for this trend has been economical. Conventional techniques for building "solar greenhouses" are more expensive than what the commercial grower would normally afford.

A major goal of our project was to meet the "solar greenhouse" criteria in a commercial-size structure by employing techniques that not only saved substantial amounts of fuel, but did so with a reasonable front-end capital expense. Economic viability of the techniques and materials chosen was ranked as important as their performance and their suitability to the commercial growing environment. Meeting this major goal turned out to be our major challenge, especially in light of standard building practice in the commercial greenhouse industry today.

The typical commercial greenhouse

is not an overly impressive structure. In fact, there is hardly anything to it. And, while it is generally an inexpensive building, it is also lacking in structural integrity.

In speaking with one greenhouse manufacturer we learned that their "beefed-up" model would hold up to an 8 PSF (pound over square foot) snow load and a 17 PSF wind load. In evaluating these figures we were surprised that the party who relayed them to us was more boastful than embarrassed. We learned that, even with a greenhouse of the nature he described to us, the grower must use his heating system to "melt off" any snow load in order to keep the building from collapsing and destroying his livelihood; an interesting use of heating fuel.

It quickly became obvious that if we intend to conserve heat energy (and thus refrain from melting off snow) that we would therefore need substantially greater strength in our superstructure. Further, we would need to add this strength in our superstructure. Further, we would need to add this strength in a way that did not adversely effect the light levels in the greenhouse via shadowing, and also in a way that maintained cost competitiveness with conventional structures.

In deciding on the structural technique and frame design, the following considerations were used as criteria.

- Low cost
- High strength-to-weight ratio/residential loading specs
- Sparsity of frame members/low shadowing of the interior
- Adaptability to conventional greenhouse configurations.
- Ease of construction.

We settled upon the use of a tetrahedral space frame, designed in a barrel arch configuration. We modeled and sized our frame to match the

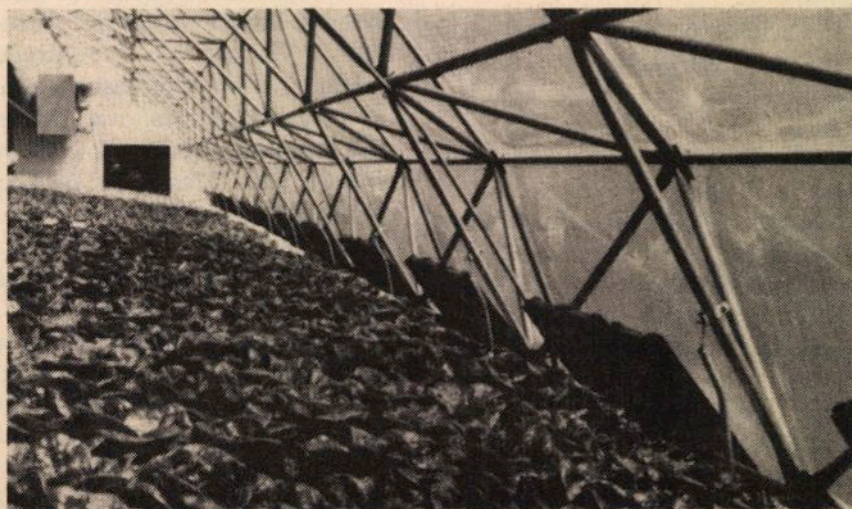
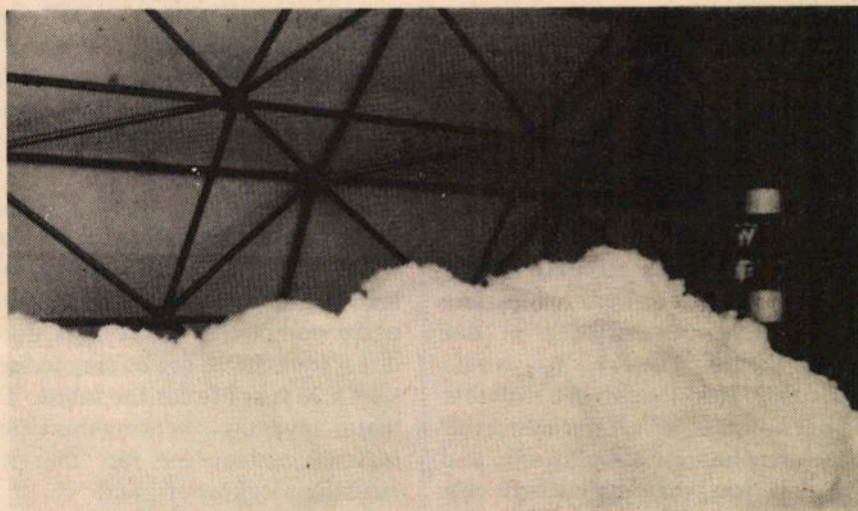
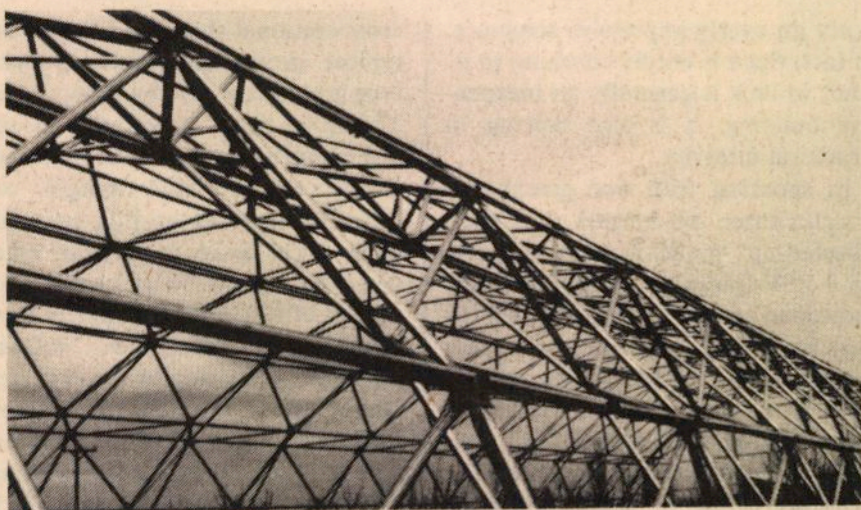
cross-sectional shape and length of a typical ground-to-ground Quonset-type greenhouse sold by Stuppy Corp. The entire super structure is essentially comprised of tetrahedral modules constructed of high-strength steel tube. We arrived at this particular geometrical design only after extensive experimentation and testing with the aid of a structural engineer and a sophisticated computer software package. According to the engineer's report about the specific geometry that we finally settled on, the frame would hold a 30 PSF snow load and 45 PSF wind load. Even though this was such a marathon improvement over the "beefed-up" 8 PSF snow load for the standard greenhouse we went ahead and tested it anyway. Using 55 gallon drums of water which simulated 20 PSF verticle load, the frame only deflected 1/4 inch.

The material chosen for the north wall is an architectural fabric made of woven polyester, vinyl impregnated and top-dressed with a urethane-based compound. Since it is not in direct sunlight we are hoping to see at least a 20 year life for the fabric. Two major advantages in using this type of material include the fact that it is virtually leakproof and if it is damaged, it is easily patched.

The southern exposure is double-glazed (2 layers) with 6 mil sheets of Ethyl Visqueen's "co-extruded" greenhouse film. The reason we chose the co-extruded film over the standard visqueen is because it is virtually pinhole free. This is a significant characteristic because the cavity between the 2 layers is filled with an aqueous foam during night-time hours to act as insulation.

The entire perimeter of the greenhouse to a depth of two feet is insulated with two inches of styro-foam board. Above grade the entire north wall and both ends are insulated with fiberglass batting; the end

*... it is common knowledge that the traditional commercial greenhouse is a gluttonous "energy hog."*



walls with R-19 and the north wall (100 ft. long) with R-30.

Dow Chemical donated a large quantity of "Enerphase Panels" to our project for testing and demonstration purposes. They are intended to be radiantly charged by direct solar impact, causing them to heat up and the compound within to melt, which causes an absorption of heat energy. At night, as the inside temperature drops, the panels release heat energy into the greenhouse while the compound begins to solidify.

Having been completed in the winter of 84/85, the thermal performance of the new greenhouse will be monitored through the winter of 85/86. We expect to cut fuel consumption by 70% (or more) and see the capital expense for this type of greenhouse being competitive with standard commercial greenhouse packages.

When monitoring is completed, a full project report will be written and made available to the public. The report will include full construction drawings, explanation of construction experiences, and monitoring results.

In summary, we feel this project has served as a prime example for how the uninhibited, innovative and experimental approaches that are often inherent in an intentional community setting can attract outside financial support and in turn, allow the intentional community to be of service to the world at large. For more information on this project, please write to:

Timothy J. Wilhelm  
The Stelle Group  
127 Sun Street  
Stelle, IL 60919.

# Oikos

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\* *Oikos* - the Greek Word meaning house, home, household, family, temple, etc. German naturalist Ernst Haeckel coined the word ecology from the word *Oikos*. He saw ecology as "the science of the relations of living organisms to the external world, their habitat, customs, energies . . . etc.

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c/o A.J. Jorgensen, 130 Valley Road, Montclair, N.J. 07042

NAME \_\_\_\_\_

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# REACHING TOWARD COMMUNITY

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Any group of people, be they politicians or business executives, be they of mixed races or mixed religions, can be led into genuine community . . .

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by the Foundation for  
Community Encouragement, Inc.

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**T**he Foundation for Community Encouragement, Inc. was established to encourage the development of community wherever it does not exist and assist existing communities, whether secular or religious, to strengthen themselves and their relationships with other communities, ultimately thereby fostering the movement toward world understanding.

A community is a group of people who have become able to transcend their individual differences so as to work together toward their common good.

A group of people do not become a community easily or accidentally. They must first learn to be sufficiently committed to reaching toward community, that they are willing to forsake some of their traditional individual defenses and habitual ways of behaving. This requires risk. Without these defenses and habits, they are vulnerable. Yet it is only through the risk of being vulnerable that they can ever learn that they are safe and basically accepted. Community is achieved, therefore, through a process of increasing mutual commitment and vulnerability. Once achieved, it is a safe place in which individual growth, change, "conversion", healing and joy automatically occur because of the prevailing atmosphere of acceptance — yea, celebration — of individual differences and mutual understanding. In the process of developing community, individuals at a grass roots level learn the basic, essential skills of peace-making.

A true community is also a remarkably effective decision-making body. Because it is a safe place, compulsive leaders become free, often for the first time in their lives, to not lead. And the shy and reserved become free, when appropriate, to

offer their gifts of leadership. Consequently, once it has become a community, a group is prepared to effectively take on new additional tasks, whether it be something like lobbying against the arms race or for increased services to the poor, or reinvigorating a parish, synagogue, business or government agency.

Anti-community, divisive factors are always at work, however, A community, therefore, must forever attend to its own health, and while external service be its ultimate goal, self-scrutiny and the other efforts required for self-maintenance must remain its first priority.

#### BACKGROUND

Large numbers of readers of *The Road Less Traveled* and *People of the Lie* have written to M. Scott Peck, M.D. asking for some kind of advice, help or referral. It has become clear that most of these requests originate out of a lack of local community. There is often something radically wrong when an individual in Texas, for instance, needs to seek help in Connecticut. Either needed services do not exist in the local community, or the local community is so unintegrated or weak that its members do not know what its resources are or how to find them.

Meanwhile, Dr. Peck has been traveling throughout the land conducting workshops and lecturing. The one constant wherever he goes, whether it be the northeast, midwest, south or west, is the lack of and thirst for community — even in the places where one would most expect to find it. Typically, for instance, people during workshop breaktimes will ask him questions, saying "I can't talk about this in the group, Dr. Peck, because some of the members of my church are here."

In response to the yearning for community Dr. Peck began to con-

duct an increasing number of Community Building Conferences. Gradually it became clear the community building process follows some very clear-cut laws and dynamics, and that there are very specific, replicable



community building techniques. Successful community building leadership does not depend upon Dr. Peck's personality. Its technique, rules and skills can be effectively taught to others who possess sufficient maturity and some intuitive understanding of psychospiritual issues.

Finally, it has become clear to many that the problem of achieving world peace is at root a problem of community. We Americans are hardly likely to be able to relate well with the Russians or others of distant cultures when we have not yet learned how to relate in community with the person in the pew next to us or our neighbor down the street, much less with our neighbors on the other side of the tracks. Peacemaking, like charity, in many ways needs to begin at home — in our synagogues and churches, in our town councils and city governments, in our businesses.

For these reasons Dr. Peck met with ten others from December 2 to 5,

*The foundation for Community Encouragement, Inc.  
The 1900 Building, Suite 412  
1900 North Winston Road  
Knoxville, Tennessee 37919  
(615) 690-4334*



1984 to establish The Foundation for Community Encouragement (FCE). The founders are of varied religions and other persuasions but have a common commitment to peacemaking and community. The founders charged FCE to fulfill the following tasks.

- To work with individuals seeking personal help and with their local institutions so that such individuals can receive the support they need within their local communities and thereby strengthen these communities.
- To research other community building agencies in order to network with such agencies and serve, as appropriate, as a center for the coordination of community building activities.
- To encourage the desire for community building and provide consultative services to meet the need.
- In addition to its broader aims, to research the needs for community building within its own geographical area and, working with the citizens, develop plans to meet those needs.
- To engage in ongoing fundraising efforts to maintain its organization and subsidize its services and programs.
- To conduct ongoing inhouse training in community building consultative skills.
- To serve as a public training center for community building leaders.
- To conduct ongoing research and evaluation of its own activities to ensure its integrity and accountability, to continually improve its effectiveness, and to add to the general body of knowledge in the field of community development.

It should be noted that the Foundation is not an isolated phenomenon. Instead it is but a part — albeit potentially a very key part — of what

might be called the Community Movement. It is impossible to date the exact onset of such quietly earthshaking movements, but the formation of the first Alcoholics Anonymous group in 1935 was a major starting place. Now there are AA groups in every hamlet of the nation along with a variety of other self-help groups modeled after it. Some roots such as the sensitivity group movement of the 1960's seemed to have outlived their usefulness, while newer roots, such as the Cursillo movement, are currently very vibrant.

Another extremely important part of the Community Movement has been the rise of community social action groups over the past two decades, such as those which have achieved better urban development or legislation supporting the rights of the handicapped. For a subpart of this movement a whole new term has been coined: networking. Finally, the Community Movement is additionally supported by some ancient communal institutions such as convents, monasteries, and local Hebrew schools. It is not the purpose of the Foundation to compete with any existing part of the Community Movement. To the contrary, its purpose is to encourage and strengthen all other communities and legitimate community building organizations.

#### **THE COMMUNITY BUILDING PROCESS**

Only some highlights can be mentioned here. Any group of people, be they politicians or business executives, be they of mixed races or mixed religions, can be led into genuine community, but they must first be clear about the demands and commitments involved. One or two leaders can lead a group of up to sixty into community in one and a half to two days. Groups as large as four hundred

can be led into community by two trained leaders in four days, but the service of twenty small group leaders (who need not necessarily be highly trained) are required. Participants must be informed beforehand that community building is not a passive process, such as listening to a lecture, but that their active participation is required and the learning involved is experiential. They must also be prepared to commit themselves to the whole period of time involved, not to drop out and to "hang in there" through desert periods of doubt, anxiety, depression and uncertainty.

Group leaders need to be familiar with some of the techniques and traditions of "The Tavistock Model" and the Cursillo Model, but there are basically no gimmicks and no magic. Leaders must above all else be sufficiently mature to speak only when necessary and not let their own ego get in the way.

There are three stages of community building. The first is *chaos*, into which the group immediately descends (unless they delay it by trying to fake community — which never works). The chaos centers around healing and converting whereby the group members attempt to fix or change each other. In so doing they become angrier and angrier with each other and, as a group, more and more confused. Once chaos has been fully experienced, the leader must point out to the group how they are obviously doing something very wrong and require that they reflect at length and in silence upon the reasons they are failing. Contemplation is invariably required; meditation and/or prayer at this point, if appropriate, may also be advised. The group will then move into *emptiness*. This is a frightening and in some ways quite painful period, and the leader must often work quite diligently to keep the group from trying to escape from it back into chaos or into organization.

During this period, the group members must empty themselves of preconceptions, personal defenses and prejudices. They come to realize that usually their need to convert or "fix" others arises out of a self-centered desire to maintain their own comfort. Although it may be quite brief, it is a time of sacrifice. Once this sacrifice is accomplished, then the group will move into genuine *community* where the members become vulnerable, authentic, accepting and flexible with each other. Much sadness is expressed but great joy is experienced and the group has now become ready, as a community to work effectively.

The process was eloquently and succinctly stated by a middle aged woman two-thirds of the way through a one and a half day Community Building Conference led by Dr. Peck in the autumn of 1984. "I know Scotty told us that we weren't supposed to drop out," she said, "but when my husband and I got home last night we were thinking about doing just that. I didn't sleep well last night, and I almost didn't come here this morning. But something very strange has happened. Yesterday I was looking at all of you through hard eyes. I'm not sure I can quite explain why, but today I have become soft-eyed, and it feels just wonderful."

Women and men who have become trained, experienced community building leaders are then also able to serve as community building consultants. With their deep knowledge of the community building process, they will be able to consult with organizations seeking advice from the Foundation. Such consultations may or may not result in the provision of full community building services. Or they may simply assist organizations who are already engaged in building but are encountering problems in the process of community maintenance.

## COMMUNITY MAINTENANCE

Once a group — be it members of a parish, the executives of a corporate structure, a gathering of city leaders, etc., — has succeeded in building themselves into a genuine community, then what?

This question cannot, of necessity, be answered with a formula. What should ideally next be done in a church or synagogue is not necessarily the same direction that a business, town or special action group should proceed. Indeed, what is best for one town may not be best for another. Moreover, for FCE to insist upon some particular plan of action would not serve to encourage, but serve to discourage its autonomy, its own capacity for leadership and creativity.

What FCE can do, however, is to provide consultation to groups which have already become communities (as distinct from its community building leadership services). Indeed, a number of newly formed communities have expressed gratitude that FCE is available to help them out with follow-up consultation if they are in significant difficulty or somehow floundering.

This consultation will make clear that no community can maintain itself without facing the ongoing tension of deciding just what kind of a community it wants from month-to-month and from year-to-year. It will clarify that this tension is always experienced over certain inevitable issues. These issues, over which each community must struggle to individually define itself, are the determination of the optimal:

Size

Degree of formal leadership (as opposed to totally consensual decision making)

Degree of intensity

Degree of commitment of its members

Degree of room for individuality of behavior

Degree of definition of its tasks  
Degree of inclusivity  
The type and amount of ritual or liturgy

FCE consultative services to help communities face these tensions and decide how to resolve them will be provided in a variety of ways, depending upon the desires of the community: as a concluding portion of an initial community building workshop, by routine follow-up according to contract, by follow-up consultation when requested, by phone or by site visits, etc.

One issue needs to be emphasized. There is a profound tendency for communities to invigorate themselves through an ultimately destructive process called "enemy formation". This occurs when a group cements itself in hostility against "them" — as the Nazi regime did against the Jews, and as countless other groups have done on a smaller scale. It is the policy of FCE to teach that enemy formation is not necessary either for community building or community maintenance; to clearly warn communities to be on guard against tendencies toward enemy formation; and to urge them to focus their energy and being on what they are for (i.e., peace) rather than on what they might be against (i.e., war, hawks, military industrialists, etc.). It is not that community should ignore evil; rather, FCE will teach them to avoid being contaminated by it. Similarly, it is the policy of FCE to always encourage communities to relate with each other, rather than set themselves apart.

## GOALS

To enhance the psychospiritual growth and quality of the lives of individuals by engaging them in community and educating them in the responsibilities, disciplines and joys of successful community living.

To encourage organizations which currently do not function as commu-

nities — town and city councils, businesses, hospitals, universities, boards of directors — to become communities and teach them community building principles.

To help those organizations already operating as communities — churches, synagogues, social action groups, etc. — to increase their effectiveness by deepening their sense of community by learning the techniques of community building and maintenance.

To encourage communities and community building organizations to network with each other so as to share knowledge and cooperate with each other in their activities whenever possible, and to prevent unnecessary duplication.

To assist groups or communities currently alienated from each other — Doves and Hawks, Jews and Christians, Blacks and Whites, etc. — in conflict resolution and toward mutual understanding through the utilization of community building techniques.

To teach people of all nations peacemaking skills through training and experience in community building.

To respond with care and compassion at no required charge to all individuals seeking help in such a way, whenever possible, to strengthen their community and relationship to it. Much of this "ministry" will need to be done by phone and will be time consuming. The seeker will need to be asked what efforts she or he has made to find help in his or her own geographical area and why such efforts have failed. If their efforts have been inadequate, new avenues will be suggested to them. If local community agencies have failed to respond adequately, these agencies will be contacted, The Foundations's concern expressed and consultative services offered.

To encourage the concrete desire for community building in all types of

organizations and every geographical area. This will be accomplished through lectures, informational mailings, visitations and word of mouth.

To provide skilled community building leadership and consultative services to all requesting agencies at a reasonable cost. It is anticipated that this can be done in such volume as to be able to support other operations of the Foundation, thereby ultimately making FCE self-supporting.

To effectively train selected candidates in sufficient volume to work as community building leaders and consultants on a contract basis to fully meet the demand for services.

To offer seminars open to the general public on community building skills.

To research, develop and operate a computerized data bank of all community building agencies in this country (and eventually overseas) so as to enable effective networking between such agencies and prevent unnecessary duplication of efforts.

To make mass mailings to inform the public of FCE's services and raise funds.

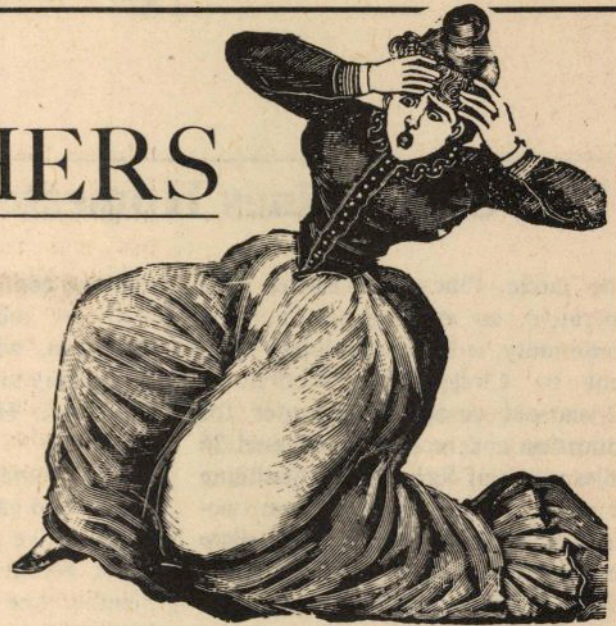
To conduct funds development workshops to train and bring into community regional fundraisers for the Foundation.

To solicit sufficient funds from designated individuals and appropriate foundations to provide that amount of seed money required to support the growth and development of FCE to the point where it can become financially self-sufficient.

To research all activities of the Foundation — in particular its community building consultative services with specific quantifiable questionnaires and follow-up studies — so as to insure accountability, improve effectiveness, and add to the general body of scientific and scholarly knowledge about community building. □



# EVEN MOTHERS



BY CRAIG SARBECK

People are thinking differently nowadays. I don't know how to explain it, but it seems that you just can't predict the way somebody is going to act anymore.

Maybe it's because people aren't interested in interfering with each other's lives the way they used to. Even mothers.

I have a friend who quit his high-paying job to move out West and do some work he had always wanted to do. The pay was minimal and living conditions primitive compared to what he had known. It was a definite step down—no, a leap off of—the ladder of success. When he finally made his decision to do it, he called Mom to tell her. After dropping the bomb, he cringed by the phone, waiting for the return fire: "How could you do this? Throw away four years of college which your father and I paid for, by the way, throw away a good career and worse, good pay? Are you going crazy? Who brainwashed you?" Instead, after a moment's silence, Mom replied, "Well, you're a mature man, and you've always made the right decisions when it was important. As long as you're happy with what you are doing, then I'm happy."

My friend practically dropped the phone. Don't you think I'm doing the wrong thing? Aren't you going to ask me if I'm going crazy?

"Crazy? My son crazy? Are you nuts or something? I'm sure you've made the right decision and I love you no matter what you do anyway."

He hung up, believing in miracles.

Maybe people are thinking differently because they are learning in these tense and trying times, to be thankful for what's around them.

I was in a department store the other day. It was bitter cold out, the wind was blowing and the snow was falling from gray skies. I suppose it could have been scorching hot out, or raining a cold rain, or whatever. I was standing at the checkout, waiting for a check to be

cleared. The small talk began with, of course, the weather. I said something profound like, "It certainly is cold out and the wind is blowing hard and the snow is falling from gray skies." And the expected reply would be, "It sure is rotten out. It's going to be a real pain driving home." Or something along that vein.

Instead she said, "I'm just glad there is some weather out there and we're around to see it and be in it."

I refrained from looking at her like she was from another planet, or Texas, or some other place where people aren't expected to behave according to expected human behavior patters.

Now I suppose the checkout lady's statement could be attributed to fatalism: We live in an age fraught with perils, with a nuclear cloud hanging over our heads, and people are starting to appreciate that which they may not be around tomorrow to see. But there wasn't a jot of cynicism or fatalism in the woman's voice. She was downright cheerful.

The underlying pressures of the day *are* being felt by us all. But people aren't reacting the same way to them. They aren't even reacting the same way people in recent times have reacted. Sure, there are still plenty of folks around who are behaving with the boring predictability that has characterized us humans for millenia. But it seems that more people are seeing things in a fresh, new way. And I think that those who are doing this are influencing others.

Now I don't want to jump on a soapbox here, but think: If enough people, particularly relatives, stop arguing and interfering with each other's lives, wouldn't the next step be neighbors, then communities, then nations? There's a silent revolution going on.

I'd love to hear any observations others have had, within their own experience, of this phenomenon. It's more prevalent than you would imagine. □

### The Circle Pines Homestead Co-op

The Circle Pines Homestead Co-operative, an exciting new housing community, is being developed adjacent to Circle Pines Center, a 47-year-old co-operative center for education and recreation, located 26 miles north of Kalamazoo, Michigan in scenic Barry County. Three two-story buildings facing south will allow for maximum solar use. The north will be earth-bermed and entrances on each floor will eliminate the need to climb stairs.

Each building will contain nine 1-bedroom and four 2-bedroom apartments, a laundry, community room with activity space, greenhouse and community kitchen. Architect James Swann has designed the buildings with energy conservation as a prime goal as well as features to encourage co-operative living and to reduce on-going expenses. The gently sloping 10-acre site with meadows and woodlands allows for community gardens, an orchard and fish pond, as well as an access road and walking paths.

Neighboring Circle Pines Center, a short walk across the fields, offers a rich year-round program of children's and family camps, co-op education, conferences and seasonal weekend programs like cross-country skiing, maple-syruping and cider pressing. Many paths lead to a sandy beach on spring-fed Stewart Lake where boat-fishing, and swimming are available. Drama, arts and crafts, folk dancing, music, nature study and other forms of creative expression are encouraged for all ages. Also nearby is state-operated Yankee Springs Recreation Area with forests, lakes and ski, riding and hiking trails. In an hour or less one can reach the urban centers of Grand Rapids, Lansing, Battle Creek and Kalamazoo — all have rich

cultural and educational resources as well as job opportunities. Lake Michigan, with dunes, state forests and resort areas, is an hour's drive west, as is Holland with its famous tulips.

The Homestead community is organized on national and international co-operative principles, including: 1) open, voluntary membership 2) one member/one vote 3) not-for-profit 4) honest business practices 5) ongoing co-op education 6) co-operation among co-operatives 7) ultimate aim to advance the common good of society. As an intergenerational co-operative,

members will also be members of Circle Pines Center. Anyone who subscribes to these purposes and is willing to assume the responsibilities, is eligible to apply for membership. A Co-operative Plan and brochure detailing costs and information is available free on request. Copies of corporate papers are available for \$5 handling fee.

For further information, write:  
Circle Pines Homestead Co-operative  
9184 S. Wall Lake Rd.  
Delton, MI 49046  
or c/o Circle Pines Center  
8650 Mullen Rd.  
Delton, MI 49406

### Ocean Arks International

Ocean Arks International is a not-for-profit research and communications organisation, incorporated in 1982 to disseminate the ideas and practise of biotechnology and ecological sustainability throughout the world. The work of Ocean Arks encompasses sail powered cargo and fishing vessels, biological Hope Ships, and ocean farming modules, aquaculture and mariculture, windmill refrigeration and irrigation, agriculture, agricultural forestry, land restoration and ecodevelopment.

Ocean Arks first research vessel, a fast moving, sail powered trimaran designed by naval architect Richard Newick was launched in November 1982. The boat, usually referred to as the Ocean Pickup because of its usefulness and versatility, is named the Edith Muma. Following initial tests in icy New England waters, in the spring of 1983, the Edith Muma sailed to Guyana in South America where it won the unqualified approval

of The Guyanese fisherman who worked on it. The following winter, in 1984, the Pickup was sailed from Guyana to the Atlantic coast of Costa Rica where it has seen constant service with fishermen of Puerto Viejo where it is based.

Ocean Arks plans for the immediate future include creating an economic model for comparing existing fishing technologies with our own and an ecological development model for coastal communities. We shall also be establishing a Costa Rican boat building company which will turn out a series of Pickups in a range of sizes for local fishermen. Another project is the development of the first Ocean Farming Module which has several prospective home ports.

Ocean Arks has a publishing wing which puts out *The Annals of Earth Stewardship*, a newspaper which, through written communication seeks similarly to serve the cause of planetary healing.

### The Small Community: Foundation of Democratic Life

*We express our appreciation to Community Service, Inc. for granting permission to reprint their review. This book is now available from Community Publications Cooperative. For your convenience, a Readers' Response Card and Order Form is included as the last page of this magazine.*

**The Small Community: Foundation of Democratic Life** by Arthur E. Morgan, Community Service, Inc., Yellow Springs, Ohio 45387. 1984, 336 pgs., paper, photograph, bibliography, \$10 plus \$1.00 postage and handling.

Arthur Morgan, the first chairman of the Tennessee Valley Authority, wrote **The Small Community: Foundation of Democratic Life** after his study and research led him to the conclusion that the interdependent family and small face-to-face community have always been the two universal and fundamental forms of social grouping in human society. For good or ill, our culture grows primarily from these two social forms. "The home and community," he wrote, "are not only the places of origin, but also the principal preservers of the most intimate and

sensitive values of our culture inheritance."

Morgan's thesis is that for the preservation and transmission of the fundamentals of civilization, vigorous, wholesome community and family life are essential. Should there be a breakdown in our present social order, the small community is the seedbed from which the new social order would have to arise. Whoever increases the excellence and stability of small communities sets limits to social decline.

He goes on to discuss the problems and limitations of the small community and the ways in which it has been exploited and downgraded in modern society.

He also sets forth in specific detail the ways in which small communities can develop cultural and economic vitality rivalling those of the big city

while preserving their own profound human values.

Arthur Morgan, from his wide experience as public engineer and educator, gives many practical examples of how community life has been strengthened and how it can be improved. This book is no impractical utopia. It is a very fundamental and inspiring workbook for those who see the need to start at the grass roots of our society in order to fulfill the higher vision they have for it.

**The Small Community** written forty-two years ago, has been out of print for many years. This new edition with additional bibliography should fill an important need in these times of social change and of searching for ways to help our country maintain its democratic foundation. This book will serve as an inspiration to that growing body of people, both rural and urban, who are seeking ways to bring greater social and personal meaning into their lives in a world which seems to have lost much of its roots.

### S.E.A.D.S. of Truth, Inc.

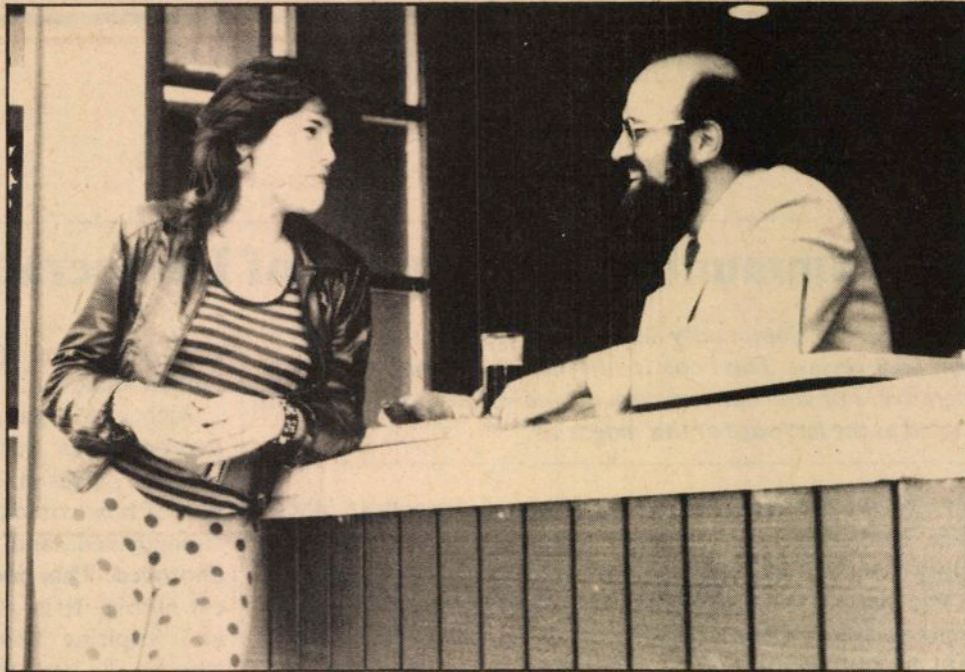
SEADS, a non-profit, incorporated in 1980, as an alternative energy educational and research group, with facilities in Columbia, Maine, is seeking individuals and families interested in participating in the formation of "Truth Trust", a landtrust. SEADS operates an American Youth Hostel affiliated "shelter", at the Maine residence, 262 Georgetown Rd., Columbia, Maine 04643. SEADS has 60 acres in DownEast Maine, Washington County, the "Sunrise County" of the U.S. and the first dawn will soon be shining over "Truth Trust". Much of the

pieces are in place, the needed ingredients at this point are the committed, motivated and funded people. The vision is five to eight homesteads surrounding a common woodlot of approximately 40 acres, the Hostel house and grounds take up the front acreage. The homesteads are built by the funding sponsor, SEADS members, seminar participants and community members. The mixing instructions are and will be an ongoing concensus process within the parameters set forth by the founding members of the organization: "To promote awareness of solar capabili-

ties and demonstrate appropriate alternative techniques, stressing mutual aid and voluntary cooperation in achieving energy self-sufficiency." The concept of limited equity will be an integral part of the by-laws.

SEADS would appreciate correspondence from interested individuals, families and organizations wishing to participate in the initial development and building an economic base for self-sufficiency.

Write: John C. Burke and Charles F. Ewing, Directors, S.E.A.D.S. of Truth, Inc., 90 Pennsylvania Ave., Massapequa, NY.



*Wow! It's been months. You're lookin' good, Amy.*

*I feel great!*

*What happened? Did ya win an MTV contest?*

*No. I joined a fantastic organization.*

*You! You've never been a joiner before.*

*I know. But this is different, Joe. It's called the Utopian Philanthropists' Society.*

*Pretty high-fallutin'. What's that supposed to mean?*

*Oh, come on. "Utopian" means you want to see life be more ideal. "Philanthropists" are people who spend a little bit of money to help the world be a better place.*

*Sounds expensive.*

*Joe, you know. I'm a bargain-hunter from way back, and of every bargain I've ever seen, this is the best around.*

*How much?*

*I paid \$36 which covers me for the whole year. But wait'll you hear what I get!*

*Shoot.*

*This Saturday I'll be watching a video they sent me on "Overcoming Jealousy."*

*Free?*

*Absolutely. Plus I get 14 publications annually. You know how overloaded I am with reading. But their stuff is different. It's more like watching a good movie--stimulating, amusing, entertaining, upbeat. Perfect before climbing into bed. But what about you? How's Roz?*

*Well...um...actually, we're breaking up. It's really bringing me down. How's your love life?*

*That's the best thing about the Utopian Philanthropists' Society. As a member I get four free personal listings in their Resources Directory. I met a terrific guy through them.*

*Oh yeah?*

*Yeah. His name is Tony. We've been living together for about three months now. We're really happy.*

*Hmm...Maybe I should try the Utopian Philanthropists' Society.*

*I think you should!*

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**UTOPIAN PHILANTHROPISTS' SOCIETY**  
543 Frederick St. • San Francisco • CA 94117

**Go for it. It's good for you.**

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# REACH

*Reach is a reader service intended to help people looking for communities and communities looking for people to find one another. Listings should be 50 to 150 words, preferably typewritten. We request payment of \$10 for listings up to 100 words and \$15 for longer listings. These amounts are 60% lower than our special classified ad rates for communities and cooperative organizations. Please note that dated material requires a lead time of at least 6 weeks before the publication date for an issue.*

## Conferences

☆Twin Oaks Community is sponsoring another women's gathering, September 6-8, 1985, in an effort to connect women not presently living in community with those of us who are, and to further develop women's culture at Twin Oaks.

This year our gathering will focus on, "Women: A Celebration of Ourselves." The celebration, planned as a retreat and relaxation weekend, will be a time for renewing in the country. Each day will include a workshop as well as loosely structured sharing of activities including: massage, music, swimming, facepainting, canoeing and juggling. Casse Culver, a singer/songwriter in the women's music field, will perform.

Twin Oaks Community, located on 400 acres of wooded land in rural Virginia, provides ideal facilities for our celebration, secluded camping and meeting sites, a clean river, sweat lodge, and a safe environment.

We hope you'll plan to come and bring your group house, collective, friends, family (this is a women-only event, but

childcare will be provided). Fee will be on a sliding scale, \$25-60.

**Women's Gathering  
Twin Oaks Community**  
Louisa, VA 23093

☆The Omega Institute is holding a series of conferences:

**Making It Real: Politics for a Sustainable Society** — A weekend forum led by three prominent political thinkers: Hazel Henderson, alternative economist and futurist; Michael Marien, founding editor of *Future Survey*; and Harry Boyte, a leader of the Bioregional movement. Explores politically realistic models for an ecologically sustainable, decentralized, non-nuclear society. A provocative opportunity for the politically disenchanted yet seriously committed. August 10-11.

**The Human Spirit in the Workplace** — A 5-day conference on the new possibilities for meaningful, successful, and responsible business practices. Including, socially responsible investing, transformation from within organizations, Gandhian economics, choosing meaningful work, progressive business models, creative management, the art of innovation, and the impact of ecological reality upon business. Of interest to anyone who wants to rethink the art of making a living not a killing. August 5-9.

**The Folk Tradition: Arts, Politics, and Society** — A week of music, discussion, and celebration expressing the universal longing for freedom and justice. With Ronnie Gilbert, Utah Phillips, Jorge Coulon of Inte Illimani, Jane Sapp, John McCutcheon, Betsy Rose and others. August 19-23.

**Nicholas Roerich in 1985** — A conference on creativity as a force for peace. With Jose Arquelles and others. August 17-18.

**Science and the Sacred** — With Jeremy Rifkin, author of *Entropy* and *Algeny*. Explores the possibilities of synthesizing science and sacred values in the development of a new ecological culture. August 24-25.

**Omega Institute for Holistic Studies**  
Lake Drive  
RD 2, Box 377  
Rhinebeck, NY 12572

☆North American Students of Cooperation (NASCO) announces its 19th annual bi-national Cooperative Education and Training Institute, October 18-20 in Ann Arbor, Michigan. This annual conference aims at improving the management, operations, education and development skills of managers, directors, staff and members of food, housing, worker and student co-ops and credit unions.

This year's theme, "Challenges for Today's Pioneers", focuses on the effective application of the Cooperative Principle to the growth, development and day-to-day operations of cooperatives. Speakers and discussion sessions will address the importance of these principles as the foundation of the cooperative movement, and as the distinguishing advantage that gives cooperatives an edge in the marketplace today.

The three-day training conference features in-depth, weekend-long courses along with a variety of shorter workshops covering a broad range of subjects of interest to both young and old cooperators alike. Course topics are geared toward different levels of experience—introductory, intermediate and advanced—to make the best use of the educational opportunities provided by the conference faculty and atmosphere.

Close to 500 cooperators are expected to participate in Institute '85's array of

courses, workshops, films, plenaries and discussion sessions. Join us at Institute '85 as we continue to build a socially responsible and financially strong cooperative movement.

#### **NASCO**

Box 7715  
Ann Arbor, MI 48107  
(313) 663-0889

☆The Center for Popular Economics in Amherst, Massachusetts is offering a week-long course in economics for activists in labor unions; religious, community, minority, and women's organizations; the environmental movement, and other progressive groups. There will be two one-week sessions of the Summer Institute for Popular Economics at The University of Massachusetts in Amherst in 1985: August 4-10 and August 18-24.

The week-long course provides an intensive exposure to economic analysis, facts, and research methods. Topics covered include unemployment, inflation, the tax revolt, the U.S. and the Third World, unions and labor markets, the economics of sexism and racism, occupational health and safety, the environment, runaway shops, and Reaganomics. The goal of the Institute is to provide activists with economic knowledge and skills that will help them in their organizing and political work, and in combatting "New Right Economics".

In the last six summers, the Center has sponsored nineteen one-week sessions. These were attended by over 2500 activists from all around the U.S. and Canada, including trade unionists, Hispanic and Black activists, environmentalists, church and community organizers, feminists, and others involved in a wide variety of progressive movements. A representative comment about the value of the sessions to the participants comes from a community organizer from Albany, New York; "One of the best things I've done in a long time. Not only have I learned some basics in a crash course on economics, I have also developed a confidence to respond to economic jargon of the new right, the media and politicians."

The teaching staff of professional economists for the Summer Institute is drawn from the economics departments of the University of Massachusetts, Smith College, the New School for Social Research, Harvard University, Fordham University, and Occidental College. The cost of the seven-day session which includes room and board is on a sliding scale, ranging from \$250 to \$450.

Scholarships and free day care are available. For additional information and an application form for the Summer Institute, please write or call (Please leave a message if we are out when you call.):

#### **Center for Popular Economics**

Valerie LePere, Melissa Robbins or  
Masato Aoki  
P.O. Box 785  
Amherst, MA 01004  
(413) 545-0743

☆September 1-8, 1985

Discussions on communal living, religion, philosophies. Everyone welcome. Meetings daily at 12:00 Noon and 7:00 pm. Bring bedding or camping materials. Come share with us.

#### **New Age Convention in God's Valley**

R.R. 1, Box 478  
Williams, Indiana 47470  
(812) 388-5571

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## People Looking

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☆We are a woman and boy (38, 9), have homesteaded 13 years with livestock, gardens, have lots of survival skills and earth-type loves. Had 4 years college, love animals, poultry, especially dairy goats, have lots of animal expertise, have muscles and callouses. Searching for individuals or community to join. Would bring small herd of dairy goats, could bring other livestock and equipment ("instant homestead"). Into home or community schooling, into caring, giving people and human values. Need place this 85 summer season.

#### **Boxholder**

P.O. Box 201  
Chatham, NY 12037

☆I want good communication and close relationships with others of like mind, a stable community with an emphasis on equality, commitment, shared vision and philosophy, responsible hedonism, strong values of equality, cooperation, and the seeking of social change through art, ideas and techniques not politics, charity, modifying anyone's desires. I firmly believe potential exists to create wealth sufficient for all humanity's needs and am not into austerity, alienation or anger. I am extremely interested in equalitarian, fidelitous group marriage. I can accept other preferences but want to build a wholesome, family-oriented scene with shared parenting. I wish only to be

involved with people who can build sufficient trust to gracefully accept democratically arrived on policies on a broad range of issues (i.e. diet, location, learning basic techniques). I strongly appreciate the unity that comes from shared religious ritual but wish to avoid making enthusiasm for any particular scientific theory or charitable program (i.e. childlessness) essential to this community. I am extremely supportive of other's professional and academic development. I am interested in building friendships at all levels including correspondence, regular activities.

#### **R. Burns**

635 Old County Rd. #4  
Belmont, CA 94002

After Sept. 15 —

Department of Economics  
University of California  
Davis, CA 95616

☆Morning Star Farm is a small rural cooperative community presently forming in central Ontario. We are a healthy, active and hardworking couple in our early 50's who have acquired 232 beautiful acres of scenic rolling farmland with mature maple and cedar bushes, spring fed trout stream, loam soil, stone for building purposes, etc. The buildings include an old but liveable 5-bedroom farmhouse, a 40 ft. X 60 ft. metal-clad barn in excellent condition, several old outbuildings in need of repair and four 18 ft. X 36 ft. buildings we have added ourselves. The property is located near Berkeley, Ontario, about 20 miles south of Owen Sound on a quiet and secluded but easily accessible concession road. We have obtained severances and approvals to build at least four additional residential structures (plus other buildings). Our plans include self-sufficiency; alternative energy; private owner-built housing; shared use of common land, shops and equipment; innovative small scale organic farming; greenhouses; cooperative enterprise; cottage industry; etc. All we need now are four or five friendly, enthusiastic, committed and like-minded additional couples to invest skills, labor and some money to bring this dream into reality. If this sounds like what you're looking for, please write or call (in advance please) telling us about your own ideas, hopes, plans, aspirations, etc.

#### **Ron and Donna Book**

Morning Star Farm, Inc.  
Berkeley, Ontario, Canada  
NOH 1C0 (416)851-0139

☆ My husband and I are looking for folks who want to get together with us and form some type of cooperative living arrangement in coastal Maine. We purchased 20 acres of wooded land near Acadia National Park and are hoping to find individuals, couples or families interested in homesteading, solar construction, and healthful living as neighbors/community members. Similar lots adjoining our property are available for \$7,000, and \$9,000, with \$500 down, balance paid over ten years at 10% interest. Beautiful land, good investment. Open to sharing childcare, also.

**Kate Decker**  
442 River Rd.  
Westport, MA 02790  
(617) 636-5181

## Groups Looking

☆ We are five people living communally in a 5 bedroom, two-bath high-ranch house (with 2-rm & bath apartment for income) here on Long Island, 25 miles East of Manhattan, on the south shore, about 5 miles from Great South Bay. The house is modern; 20 years old. The owner has retired and wishes to sell the house to a group of community-minded people. May issue mortgage for full sale price (\$100,000). The lot is 100 X 100 with fruit trees and two garden plots, bounded by three streets, suburban atmosphere, swimming pool and tennis courts (free) across the street. Nicely landscaped, hedges shield the grounds from the street. Our present members all work outside (or receive welfare), and whoever is out of work usually takes care of the house and does repairs and maintenance. Furniture

and all major appliances will go with the house. Quality glazing already purchased for large greenhouse. If you wish to live this close to the "Big Apple" (NYC) and have any ideas, please contact:

**Paul M. Gray**  
233 Third St.  
North Lindenhurst, NY 11757  
(516) 957-1864 (Evenings)

## Schools

☆ New Alchemy Institute announces their new 1986 Semester Program for college-level students who wish to pursue classroom and hands-on field work in: organic agriculture and permacultur solar design and energy conservation ecological design bioregional planning and land use computer monitoring and modeling Semester is geared to third-year college students, or persons with equivalent backgrounds. It is offered in cooperation with the National Audubon Society Expedition Institute and is carried out on New Alchemy's 12-acre research and education center on Cape Cod. The Semester is scheduled for January 27-May 16, 1986. Credit is arranged through one's own college or Lesley College.

The Institute also offers day and weekend courses for the public on the same topics. Apprenticeship and tutorial programs are available. Farm Saturdays and children's programs are offered in the summer months and a Harvest Festival is held each fall. Membership is open to all.

New Alchemy is a non-profit, tax exempt research and education center founded in 1969 to develop a healthy synthesis of technology, biology and

architecture. Students are admitted without regard to race, religion, sex, or national origin.

For further information, please write or call:

**Semester**  
237 Hatchville Road  
East Falmouth, MA 02536  
(617) 563-2655 or 563-2219

### ☆ International Communes Festival

This year, the Collectif Riseau Alternatif invites you to France for the international meeting — which will be held in Haute-Loire near Le Puy, the 1st to the 8th of September, '85.

At the moment our network consists of about 80 communes specialised in helping young people and adults "in difficulty".

To follow up our meetings in Holland and Scotland it would be interesting if you could bring videos on your community life. We have a VHS video recorder.

We propose debates on the following themes:

Economics—What self management and how?

Politics—What kind of relations with the system?

Society—Relations between communes themselves and the outside world.

We would like to have a good time together—musical instruments will be welcome. Greetings with CRA communes will be possible, most of them are situated in the South of France. If you would like to stay let us know in advance. We have already a lot of inquiries from Canadians, Americans, and English . . .

We are going to be numerous: great!

We look forward to seeing you!

**I.C.F.**

Cammunaute du Gas Las Zarboneras  
66480 Le Perthus, France

## Late Arriving Entries

### ☆ Community Living Experiment

Co-led by five successful Virginia intentional communities: Twin Oaks, Springtree, Shannon Farm, The New Land of Monoe Institute, and Sevenoaks.

**Week of July 29-August 4, Monday 8:00 p.m. to Sunday 4:00 p.m.;** cost: \$285, deposit: \$100 (room, board, program). Participants will gather for orientation at Sevenoaks Monday evening. Then Tuesday-Thursday will be spent in field trips to each of the communities co-leading the workshop. You will be given in-depth exposure to that commu-

nity by representatives of the community who will then join us on the weekend. Every evening, back at Sevenoaks, participants will share their experiences and process their feelings and insights. Friday will be a day for relaxation and sharing at Sevenoaks.

**Weekend of August 2-4, Friday 8:00**



p.m. to Sunday 4:00 p.m.; cost:\$95, deposit: \$40 (room, board, program). You may participate in the weekend only, during which representatives from each of the five communities will join participants in an experiment in creating community together. We will debate the many issues of living together in community, including how to have the best relationship to: money, children, land, each other, decision-making, and so on. The communities represented offer very different perspectives on community: from total income sharing to completely separate finances; from shared facilities and shared land, to shared land and private housing, to private land and private housing. People

coming for the weekend should be prepared to claim their personal ideals, reveal their secret agendas, share their disappointments as well as their hopes and needs, and be open to the shared experience of our community-building.

During both the weekend and the week-long workshops we will be living together as a community — cooking and cleaning up after meals, sharing our spaces, and possibly also child care. Children are welcome, but parents need to expect to provide the major part of child care. All decisions about our time together will be done by consensus of the

group of those present. The practical experience of living together will be a large part of the learning, which we will review as openly as we can in our evening sessions together.

#### Sevenoaks Pathwork Center

Route 1, Box 86  
Madison, VA 22727  
(703) 948-6544

☆ Integrate the best of urban and rural lifestyles with progressive political and social values. Six rural communities (2 in Missouri, and one each in Oregon,

Indiana, Virginia and Ontario, Canada) established over the last 18 years, invite visitors and potential members. Nonsexist, nonracist, gentle cultures based on equality, cooperation and environmental concern. Clean air, pure well-water, cooperative work — sharing and caring — are daily realities. For free information (donation appreciated) write:

**Federation of Egalitarian Communities**  
Twin Oaks Community  
Box FC-X5  
Louisa, VA 23093

## Creating Women's Culture at Twin Oaks

Last year's women's conference at Twin Oaks will always remain a bright memory, a memory of a transition period in my life as I moved from a university world of demonstrations and political involvement (not to mention classes and exams) to a community where people were striving to actualize the ideals I had been fighting for in my spare time at college. Because the week of the conference was also the week I moved to Twin Oaks, my first experience of living in an intentional community is inextricably linked with participation in "Women in Community: Empowering Ourselves." It was a busy and challenging week for me; I juggled facilitating a workshop on feminism and religion, moving into a new home, and trying to join in as many of the weekend's activities as I could.

The size of the conference, about 90 women, was such that by the end of the weekend, I had met most of the women who attended, and shared in workshops, meals, and conversation with many. I like to think of the friends we were making, broadening the connections between women from different lifestyles and cultures. For me, the connections included reaching into the past as I wrote a letter to an old friend during Minnie Bruce Pratt's workshop on identity and liberation. During one of the exercises she directed us to write a letter or poem to a woman with whom we had formerly been close but have had difficulties with lately. After we had written our letters, we gathered in a circle and shared them with each other. It was hard, publicly expressing our private problems with the women in our lives. Crying, laughing, and hugging, we ac-

knowledged each woman's pain, and the hope that prompted her to write the letter.

Daytime activities included a choice of fifteen workshops, tours of Twin Oaks, walks in the woods, and spending valuable time with women. In the evenings we were treated to performances by Judy Reagan and Beth York, both talented singers and songwriters. There was also time to sing around the campfire afterwards. We camped in the woods on clear starry nights; one night a group of women pulled sleeping bags out and slept around the campfire.

So that was our first women's conference at Twin Oaks. Looking back on it now, I am conscious of all the changes we've been through. Last year the conference was focused on women in community in a very broad sense and featured workshops on a variety of topics. This year, we have decided to experiment with the theme "Women: A Celebration of Ourselves," concentrating on affirming the time we spend together with women, exploring our creative resources, playing and relaxing. While not forgetting the many struggles we as women have to face, we'd like to spend this time renewing our ties with each other, creating and strengthening our positive potentials.

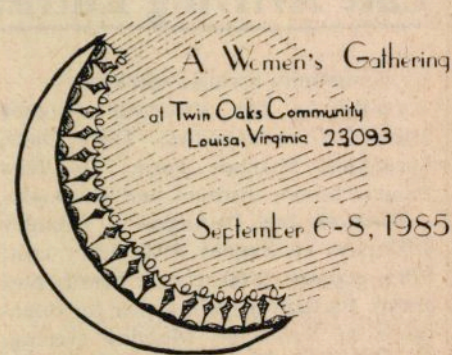
Another change is that while last year the conference was organized almost exclusively by Robin Moulds, this year we chose to form a collective committee: Cheryl, Bet, Reese, Trisha, Leslie, and me. We meet regularly on Saturday mornings to plan events, divide tasks, and update each other on our progress. We've been both a task force and a support group for each other as we watch the

celebration taking shape. I've had the opportunity to learn a lot about concert production and promotion from some wonderful women. It's been exciting to connect with women whose lives are dedicated in one way or another to the celebration of women's selves.

Although it's only June as I sit at my typewriter, I'm eager for September. If just being at last year's conference evokes such fond memories, how much more rewarding it is going to be to see the results of months of involvement. I'm looking forward to seeing the women who attended last summer, and hoping to meet a lot of new faces. It feels really good to be a part of creating women's culture; I hope you can come help make it happen.

VIDA

See the listing under 'Conferences' in this issue's Reach.





# ADVERTISING ORDER FORM

<b>Indicate Issue Desired</b>	<b>Issue Date</b>	<b>Closing Date</b>
_____	January 15	December 1
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_____	July 15	June 1
_____	October 15	September 1

## DISPLAY ADS — MECHANICAL REQUIREMENTS (Camera-ready copy)

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1/4 page	\$60	7 1/4" x 2 1/4"	3 1/2" x 4 1/2"	
1/6 page	\$40	3" x 3 1/8"	2 1/4" x 4 3/4"	
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All ads must include address and phone number. Phone numbers count as one word. Abbreviations count as one word. Post office boxes count as two words.

**Terms:** Payment must accompany the advertisement. Make check or money order payable to: Communities Magazine, 126 Sun Street, Stelle, Illinois 60919.

Ad agency discounts 15%. Communal/co-operative organizations 20% discount.

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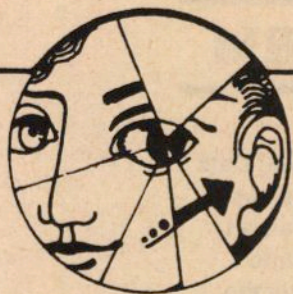
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# RESOURCES

## Technology

Technology is a word many of us use to or still do fear. We have grown up in a world where technology, in the name of progress, has been allowed to flourish unchecked and the results have not been encouraging. But it is not necessary to throw out the baby with the bathwater. Technology with human (and planetary) needs, not greed, as its principle motivator can do as much good as exploitive technology has done harm. A friend of mine, Andrew Lawler, who works for **The Futurist** magazine, has coined the term *Tecologists* (technology and Ecology) to refer to those who hope to merge technical knowledge with a broader understanding of our relationship to the ecosystem. The following *Resources* column provides some examples of groups and individuals who are pioneering the various "branches" of Tecology. In surveying these emerging sciences I found myself being drawn to those works which are concerned with the spirit and beliefs behind the methods. I was inspired by this quote: "Whether or not technology becomes evil depends on the kind of philosophy with which it is used. We must re-examine the philosophy with which we use technology, instead of blaming technology itself (**Cultures of the Future** Magorah Maruyama). For more *Resources* on Appropriate Technology see **Communities** #57.

As always I invite your comments and contributions of materials. Send to: Gareth Branwyn, *Communities Resources*, 404 N. Nelson St., Arlington, VA 22203, (703) 527-6032.

### SPACE DEVELOPMENT

#### **Out of the Cradle**

Hartmann, Miller, Lee  
Workman Publishing  
1 West 39th St.  
New York, NY 10018  
1984, 190 pgs. Pb., \$11.95

#### *Forging Missiles into Spaceships*

Daniel Deudney  
World Policy Journal #7  
777 UN Plaza  
New York, NY 10017  
Spring 1985, \$6.00

#### **Space: The High Frontier in Perspective**

Daniel Deudney  
Worldwatch Paper #50  
Worldwatch Institute  
1776 Mass. Ave., N.W.  
Washington, D.C. 20036  
1982, 72 pgs. paper, \$2.00

#### **Space Colonies**

Stewart Brand  
Whole Earth Access  
2990 Seventh St.  
Berkeley, CA 94710  
1977, 160 pgs. Pb., \$5.00

Several years ago if you had told me that I would one day become an active advocate of space development, I would have bet my pony tail on your insanity. I thought, as many alternative types did (and still do), that migration to space is a cop out. It only provides humans with the ability

to mess in the collective nest and then split to build another with no sense of responsibility for the destruction left behind—a new frontier to exploit for man—the anthropocentric master manipulator. "We have no business going to space until we've conquered our mounting problems on Earth", I could be heard intoning. So why the change? Well, for one, I've become more level headed in my old age, allowing me to listen to points of view that I would have previously dismissed as a matter of principle. And, I've become more comfortable with the tools of technology, coming to see their use and access to them as the main problem, not the technologies themselves (usually). My newfound openness to hearing space advocates out has allowed me to understand some of the positive aspects of space development. While I still have a hard time with the blind technological utopianism of Gerard O'Neil in **The High Frontier**, I've accepted the fact that **humans are headed for space in the near future** and if we (humanists, ecologists, the peace movement, civilians) are not actively involved, the heavens **will** become another frontier of wholesale exploitation, nationalism, and militarism. We have the power to affect our future in space, but it will take great effort.

**Space Colonies**, a slightly outdated collection of articles, debates, interviews and resources which originally appeared in **Coevolution Quarterly**, is still the most comprehensive (exploration) of the space development issue from the ecological/whole earth point of view. All the big wigs

of the eco-movement and the fringe scientific community were polled for their opinions. Contributors include Wendell Berry, E.F. Schumacher, Hazel Henderson, Carl Sagan, and Bucky Fuller. A real three-alarm debate!

Although totally biased towards space exploration, **Out Of The Cradle** is an extremely well balanced presentation of the basic issues, both pro and con, for a human future in space. The first book examines alternative futures for the coming decades, both on earth and in space. Nuclear War, overpopulation, and eco-disasters are identified as some of the major global dangers that might prevent any future at all and, hence, space migration.

The most likely hardware to follow the shuttle into space is presented in words and pictures. The Space Station, Unpiloted Interplanetary Probes, Mars and Moon Colonies are all covered. Stunning paintings by artists Miller and Lee depict humans and robots living and working in all manner of space and planetary environments. If you're a space cadet and have become bored with the old imagery of the Bernal Sphere, the Nasa/Ames Torus, and other artists' conceptions circa 1970, this book is welcome relief. Those ignorant of the issues being debated and curious to hear level-headed yet enthusiastic proponents state their case should check out this fine volume also.

Daniel Deudney is a fellow of the World Policy Institute, a former Senior Researcher at the Worldwatch Institute



Larry Todd



Wrong attitude

and the author of the outstanding *Whole Earth Security: The Geopolitics of Peace* (Worldwatch Paper #55). Dan is probably the most articulate and socially conscious authority on military and civilian space policy. He has been a vocal critic of Star Wars, Solar Power Satellites, and Space Colonies. He is not one to be dazzled by "sexy" technology, and yet his concern for issues global has brought him to the conclusion that international cooperative space development is perhaps our only chance for planetary survival. He calls his argument Reconfiguring the Armageddon Gadget:

"To be able to compete with the seductive appeal of Star Wars, the peace movement will have to lay aside its antitechnological ethos and its ad hoc methods. It must steer rather than brake technology. The peace movement can not simply stop technological momentum head-on, but must instead try to channel it away from programs such as Reagan's Star Wars initiative. A cooperative space program is a politically appealing form of military conversion."

*Forging Missiles into Spaceships* is Deudney's proposal for transmuting the Soviet/U.S. relationship and disarming the military-industrial complex. *Space: The High Frontier in Perspective* is a comprehensive investigation of space policy from a progressive point of view. I can't recommend these two resources enough for anyone concerned about the issue and that should include everyone.

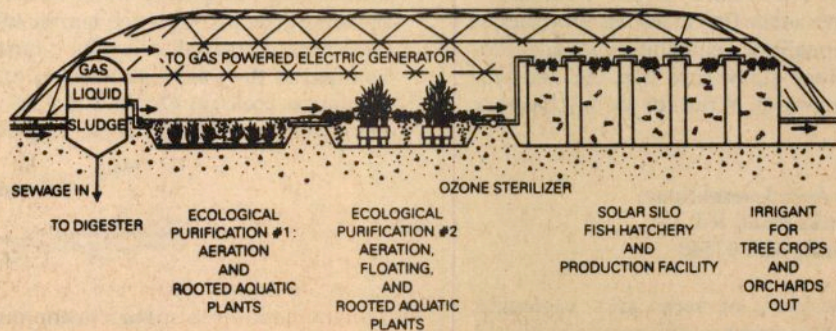
### Bioshelters, Ocean Arks, City Farming: Ecology as the Basis of Design

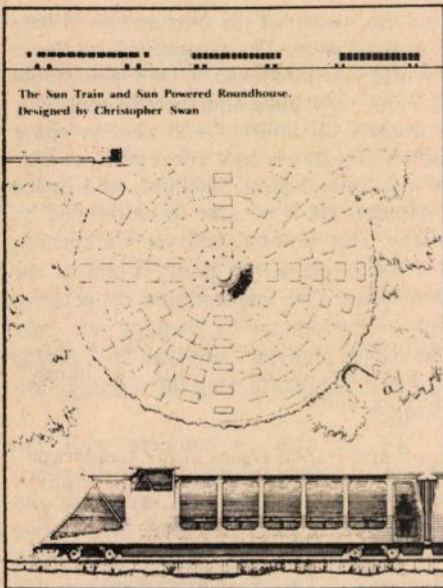
Nancy Jack Todd and John Todd  
Sierra Club Books  
2034 Fillmore St.  
San Francisco, CA 94115  
1984, 210 pgs. Hb, \$25.00

This new book by the Todds is an attempt to record their work in ecological design (as carried out by The New Alchemy Institute and Ocean Arks International) and to visualize what the future might hold for architecture and community planning conceived along ecological design principles. While much of the city renewal proposals are pie-in-the-sky, along the lines of *The Edible City Manual* (see *Resources Communities* #57), there is enough practical info and reports on

works-in-progress that the book does not degenerate into yet another ungrounded panacea. *Chapter Three: Emerging Perspectives of Biological Design* is an excellent treatise on the idea of using the living world as the primary design matrix.

It would be wonderful if the authors would consider publishing this chapter as a separate booklet and using it as a platform for dialogue with others exploring the creation of a science of applied biotechnology.





**Eco-Decentralist Design Package**  
 Planet Drum Foundation  
 Box 31251  
 San Francisco, CA 94131  
 3 Booklets, \$10.00 postpaid

Those interested in the Todd book might also want to check out this three-booklet set published by the folks at Planet Drum. The first offering, entitled **Reinhabiting Cities and Towns: Designing for Sustainability**, was written by John Todd and George Tukul and is somewhat of a seminal work for **Bioshelters, Ocean Arks, City Farming. Toward a Bioregional Model: Clearing Ground for Watershed Planning** outlines a regionally based model of development along biologically sound lines in the areas of food, housing, and energy. Peter Berg, founder of Planet Drum, outlines his vision of what he calls "reinhabitation" (the restoration and maintenance of bioregions) in **Figures of Regulation: Guides for Re-Balancing Society with the Biosphere**. The Planet Drum Foundation publishes other fine materials on issues of bioregionalism, reinhabitation, and biotechnology (they sure like big neo-economenclature). Write for an introductory flyer.

**Ocean Arks International**  
 10 Shanks Pond Rd.  
 Falmouth, MA 02540

"The vision is of ocean arks, ecological Hope ships, great sailing vessels to ply the

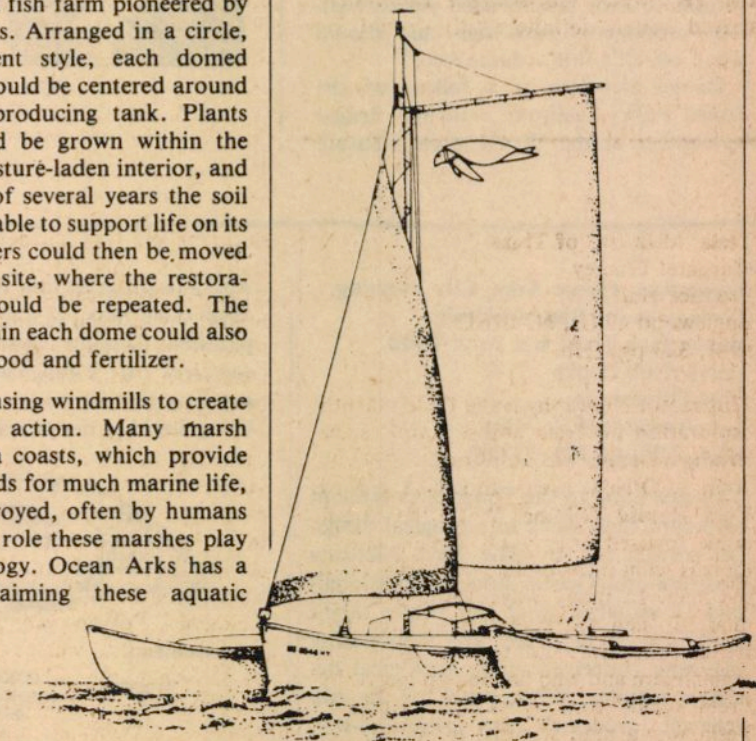
seas on behalf of the planet." The speaker is John Todd, founder of New Alchemy Institute, and most recently founder of Ocean Arks International (O.A.I.). This new organization was established to do research and development (and disseminate information) on troubled ecologies throughout the world, the victims of pollution, inappropriate usage, and overdevelopment. The Institute's goal is to assemble, for any given region, the appropriate blend of bio-technologies that can help its people build a sustainable future. O.A.I. has already initiated projects which include:

- A full line of wind-powered fishing and cargo vessels. The brain-child of naval architect Richard Newick, these lightweight crafts outperform conventionally powered vessels and use materials and technologies readily available to the fishing regions that will employ them. Third World fishing communities, constantly plagued by lack of parts and the high cost of fuel could be greatly aided by their use. Prototypes are currently being tested with impressive results.
- A plan to provide new life for arid and impoverished areas. This ambitious scheme would involve a dozen or so 50-ft. "bioshelters", a kind of domed greenhouse and fish farm pioneered by New Alchemists. Arranged in a circle, tipi encampment style, each domed environment would be centered around a large algae-producing tank. Plants and trees could be grown within the protective, moisture-laden interior, and over a period of several years the soil would become able to support life on its own. The shelters could then be moved to an adjacent site, where the restoration process could be repeated. The large tanks within each dome could also grow fish for food and fertilizer.
- A strategy for using windmills to create artificial tidal action. Many marsh areas along sea coasts, which provide breeding grounds for much marine life, have been destroyed, often by humans ignorant of the role these marshes play in marine ecology. Ocean Arks has a plan for reclaiming these aquatic

nurseries. Windmills would pump fresh sea water into low-lying coastal valleys where gravity would ensure its eventual return to the sea, creating marsh pools along the way. The new marshes could then be planted with a diversity of marine organisms and creatures collected from marshes still left in the regions. These re-established marsh areas could greatly enhance the yield potential of local fishing industries.

- The prime motivator behind Ocean Arks International: the Ocean Ark itself. These relief ships, powered by the sun and wind, will be filled with live organisms, trees, and fish, a research library, the latest in computer and marine science technology, and a staff capable of undertaking challenging restoration experiments. Presently in the planning stages, these global voyagers will offer their services to any countries desiring biological resources and the skills necessary to effect ecosystem repair.

Ocean Arks International is continuing, the task of orchestrating current knowledge and leading-edge research into a science and practice of earth stewardship.



The "Edith Muma"

### How To Design An Independent Power System

Terrance D. Paul  
Best Energy Systems  
Necedah, WI 54646  
1981, 123 pgs. Pb., \$6.95.

This handy little book explains all the basic principles governing independent power generation: design, building, and multi-system integration. Chapters cover engine generators, battery storage, inverters, and utility interfacing. Those in the know have had good things to say about this one.

### The Freshwater Aquaculture Book

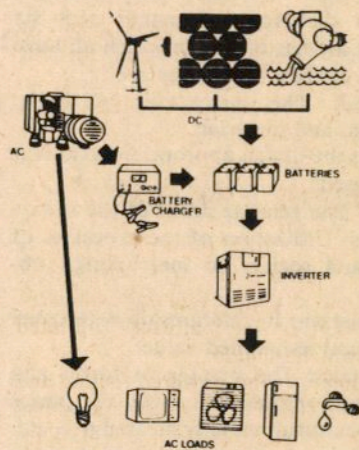
William McLarney  
Cloudburst Press  
Hartley & Marks, Inc.  
P.O. Box 147  
Point Roberst, WA 98281  
1984, 583 pgs. Hb., \$40.00.

### Ponds and Pools: Oases in the Landscape

Kabisch/Hemmerling  
Arco Publishing  
215 Park Ave. South  
New York, NY 10003  
1983, 261 pgs. Hb.

**The Freshwater Aquaculture Book** has arrived and it definitely fills a void in

### GENERAL INDEPENDENT POWER SYSTEM



practical material on small scale fish production. Unlike McLarney's earlier work **Aquaculture** (co-authored by J.E. Bardach & J.H. Ryther) which focused on large-scale fish farming in a textbook atmosphere, this new volume covers small-scale fish cultures with equal comprehensiveness. Where **Aquaculture** attempted to be a survey of fish farming practices worldwide, **The Freshwater Aquaculture Book** covers only those methods and species appropriate to North America. The mood is also more conversational and "how-to" oriented. Besides his authoring on the subject of fish

farming, McLarney has also served as the vice-president of the New Alchemy Institute and done oceanographic research at the Woods Hole Oceanographic Institute. He is currently the director of New Alchemy Institute, S.A., located in Costa Rica. Aquaculture is an exciting but still overlooked area of food self-reliance, partially due to lack of pertinent information for U.S. growing conditions and sound advice on production methods. This book offers both. Hopefully it will inspire fledgling aquaculturalists as well as provide oldtimers with a handy reference guide.

### Ponds and Pools: Oases in the Landscape

is a pleasant and educational stroll around the smaller wetland ecologies found in and around pools and ponds. A textbook in the best sense of the word, **Ponds and Pools** had us ooh-ing, aha-ing and generally learning a lot during our first browse-through. Packed with lots of color pictures, diagrams, and charts, it begs for the casual, savory read. Primarily focused on the limnology (study of inland waters) of central Europe (published in West Germany), it also offers some fascinating insights into the human cultures that have sprung up near the more significant ponds. Unfortunately, the typestyle used is not the most readable nor is the translation. Better stick to browsing and strolling.

### Tesla: Man Out of Time

Margaret Cheney  
Prentice Hall  
Englewood Cliffs, NJ 07632  
1981, 320 pgs. Hb.

This recent biography is the first in-depth exploration of Tesla and his work since **Prodigal Genius** was published in 1943 by John J. O'Neil, then editor of the **New York Herald Tribune**. While the earlier book focused mainly on Tesla's work, there is scant information on Nikola Tesla the man. In many ways Tesla is a role model to new age inventors and technofreaks who live and work outside the mainstream and who are not hampered by "real world" constraints and prejudices. Tesla was a mad scientist in high style. Neighbors of his Manhattan laboratory used to complain about light as bright as the sun constantly piercing the cover of

darkness and waking them up. Lightning bolts shot out of his windows and strange visitors came calling at ungodly hours, having been summoned by Tesla to share in his inventive genius. Many of his experiments with mega-electricity cannot be duplicated to this day.

Tesla was a psychic, receiving many of his ideas in his sleeps or from tangible visions. He did most of his inventing, prototype designing, and troubleshooting in his head, so many of his ideas did not survive his death. Those that did have had a profound influence on our lives. It was Tesla, not Edison, who harnessed alternating current. It was Tesla, not Marconi, who invented the radio. And it was Tesla who invented the fluorescent light and the bladeless turbine. He also did prototypical work in computers, robotics, fusion power, and rocketry. All this from a man who is virtually ignored in the history

books! Hopefully this book will cast some light on this shadowy figure and promote this great American innovator to the ranks of Einstein, Edison, and Westinghouse where he belongs.

### Design For The Real World

Victor Papanek  
Bantam Books  
New York, NY 10022  
1973, 371 pgs. Pb.

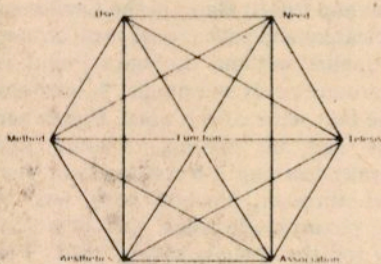
*"You have to make up your mind either to make sense or to make money, if you want to be a designer."*

Buckminster Fuller  
**Design for the Real World**

Victor Papanek, author of the popular nomadic furniture series, wrote this one in the early seventies. It is a leveling expose of modern industrial designing,

backed with an assemblage of methods and solutions to some of today's design problems based on ecology and human need. Highlights of the book include an argument against patenting, and a look at our "Kleenex Culture", its obsolescence, its permanence, its values, and how its visions of abundance are adopted by cultures where even its fundamental products are inappropriate. Perhaps the most valuable concept that Papanek offers is "The Function Complex". Anyone literate in design is aware of the form vs. function debate. As in many

Figure 1 THE FUNCTION COMPLEX



philosophical polarities, it is a love more complex and interesting than a simple either/or dichotomy. Papanek sees six different aspects of design which all have function at their hub. They are:

**Method:** The interaction of tools, processes, and materials.

**Use:** Is the design appropriate to how it will be used?

**Need:** The genuine needs of the user.

**Telesis:** Utilization of the processes of nature and society to meet design objectives.

**Association:** Its relationship with other entities and its implied value.

**Aesthetics:** The shaping of forms and colors into entities that move us, please us, are beautiful, visually meaningful, etc.

The author suggests that it is easier to create elegance in design (i.e. the successful integration of these six requirements), when the designer is unhindered by pressures to conform, create artificial needs, or to get rich. Liberated from these, dedicated to meeting basic needs, it is Papanek's contention that we can design for the real world . . . for every

man, woman, and child on Earth. His accomplishments and those of colleagues, like Bucky Fuller, speak very convincingly of this claim.



## Shelter

### Racing Alone

Nader Khalili  
Harper and Row  
10 East 53rd St.  
New York, NY 10022  
1983, 241 pgs. Hb, \$14.95

*"Midway through my life I stopped racing with others. I picked up my dreams and started a gentle walk.*

*My dreams were of a simple house, built with human hands out of the simple materials of this world: the elements—Earth, Water, Air and Fire.*

*To build a house out of earth, then fire and bake it in place, fuse it like a giant hollow rock.*

*The house becoming a kiln, or the kiln becoming a house.*

*Then to glaze this house with fire to the beauty of a ceramic glazed vessel.*

*I touched my dreams with reality by racing and competing with no one by myself."*

This book speaks in a gentle, unpretentious voice that moves mountains, or in

this case, forges them into ceramic dwellings. Armed with a notebook, astride a motorbike, architect Nader Khalili ventured into the heartland of his native Iran to explore a vision of a new form of housing. Khalili, intrigued by the ancient art of adobe, wondered what would happen if you built an intense fire inside a clay dwelling and baked it as a kiln would. His answer took five years and became a focal point of his struggle to understand himself, a nation in upheaval, and the true meaning of habitation. It is a work of poetry, a personal diary of spirit mumbblings, chronicle of the creative process and a "spirit in design" manifesto. It is presented as an architectural study of a building process and it accomplishes that task on the highest level where architecture and every other design art/science is capable of glimpsing "the pattern that connects". All this is achieved via the simplest prose and the gentlest contemplations.

A movie *Earth, Water, Air, and Fire*, and a travelling exhibition called *Geltaftan* are currently making the circuit. Keep an eye out.

### Doors, Windows and Skylights

Dan Ramsey  
Tab Books  
Blue Ridge Summit, PA  
1983, 214 pgs. Pb., \$11.50

Houses with skylights have a special warmth to them. The sky, comprising  $\frac{2}{3}$  of our worldview, is forever being neglected as we move deeper and deeper into human solipsism. Skylights bring us back in touch with what's going on "up stairs". We can sit in our living room, bed room, or kitchen, day or night, and keep tabs on celestial happenings. Skylights can also provide ventilation, solar energy and of course lots of natural light.

Unfortunately, people are leary of skylights, especially retrofits, because of fears about roof leaks, structural weakening, and other negative side effects. With proper installation guidelines and careful work these problems are easily overcome, points out Dan Ramsey in another Tab Do-It-Yourself-er. This simple, heavily illustrated book covers all the basics for selecting, building, maintaining, and remodeling all types of skylights,

doors, and windows.

A special emphasis on energy saving and proper insulation is evident with comparative information on insulation types, caulking, and shading. A handy guide for the owner-builder who appreciates the importance of efficient and aesthetically pleasing "basic barriers".

### **The Sky Is Falling: Why Buildings Fail**

Marvin Hornstein  
and Books

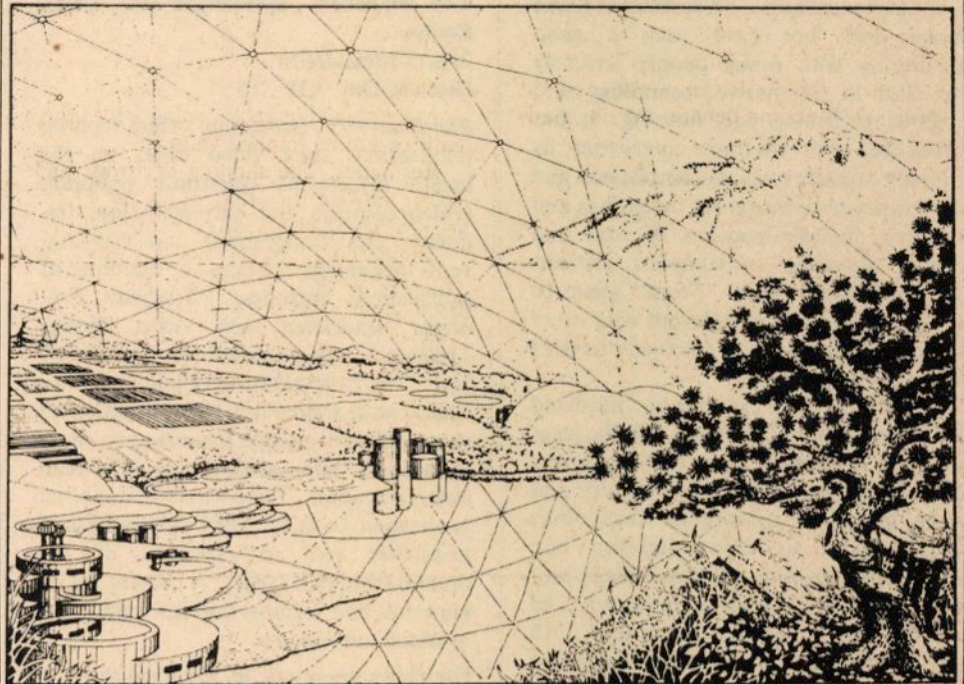
South Bend, IN  
1982, 121 pgs. Pb., \$7.95

*"We need the plans by the 15th. If you can't meet my schedule, I'll find someone who can!"*

If you've ever watched a high rise or other civic building go up, you were probably shocked at how fast it "materialized". Sure, this is partly due to round-the-clock crews, working at break-neck speeds, but it just doesn't seem right that a structure so large and so complex can be hurriedly tinker-toyed together and still be safe and sound. As **The Sky is Falling** so chillingly points out, they often are not. It was Hornstein's intention to bring to light the often cavalier attitude with which developers approach structural engineering and how, in their

neglect, they are playing a kind of Russian Roulette with the rest of us—the users of these facilities. **The Sky is Falling** provides a lengthy and sobering obituary of failed structures (and their victims) from our recent past. It is the author's hope that by informing the public and

involved officials about the blatant irresponsibilities that often cause these disasters we might cry out for more accountability. At this point it appears the commercial building industry has come to view our safety as an acceptable risk in their quest for a quick buck.



## **Computers**

### **Computer Gardening Made Simple**

Charlie "Chip" DeJardin  
P.O. Box 13096  
Gainesville, FL 32604  
1984, 32 pgs. Booklet, \$2.95

This useful gardening guide takes you from seed to sapling to fresh, ripe personal computer. **Computer Gardening Made Simple** shows you how to sprout, water, transplant, thin, harvest, and debug your computer garden. Also includes tips on floppy discs and modems. Each book comes with a package of FREE computer seeds (worth \$2.99) or if you buy a pack of seeds you get the book FREE (worth \$2.99). Such a deal.

By the author of **How To Make Children At Home** and **How To Turn Your Buick Into A Terrarium**. No foolin! Well, maybe a little...



### **What's In Print: The Subject Guide to Microcomputer Magazines**

W.H. Wallace-Indexer  
Tab Books  
Blue Ridge Summit, PA 17214  
1984, 461 pgs. Pb., \$14.95

**What's In Print** is a valuable resource for anyone wanting to keep abreast of the plethora of computer information being churned out by countless here-today-gone-tomorrow computer mags. This is actually the second volume in a series with the previous volume covering the field prior to 1981. There are over 26,000 entries which are divided by system type and subject (Apple-Business, Communications, Games, etc.) as well as a large section of general interest. Systems covered include 6800/6809, Apple, IBM, TRS-80, OSI, and Atari.

## Late Arriving Entries

### The Mother Earth News Eco-Village

P.O. Box 70  
Hendersonville, NC 28791  
(704) 693-0211

Let's be honest here — **The Mother Earth News** does not have such a good reputation with many people seriously involved in alternative technology and organic gardening and farming. It has often been criticized for its cutesy tone, its flippant attitude towards complicated and sometimes even dangerous inventions and its gross underestimations of time and money necessary to complete projects presented in its pages. "Mom" seems to get slicker and more irrelevant with every issue (or so some say — I actually haven't subscribed for years).

In an effort to experiment first-hand with the viability of many of the ideas covered in **TMEN** over the years, the Eco-Village was created. In the spirit and style of other appropriate technology centers such as *New Alchemy* and *Farralones Institute*, the *Eco-Village* provides tours, workshops, and hundreds of exhibits on "doing more with less". All the innovative, way-out and down home ideas that have been championed in the magazine are in evidence — cordwood homes, domes, various energy systems, intensive gardening techniques, etc. Several friends of mine who work in the energy technology field and are very pragmatic visited the *Village* recently and were surprisingly impressed and enthused by what they saw. They found the overall set-up well thought out. They came away with a greater sense of respect for "Mother's" accomplishments. But apparently word is that the center is having poor attendance perhaps in part due to these questions of faith in the integrity of **TMEN** (analogy: everyone loves to read **The National Enquirer**, but who would actually bet money on its "truths"). A recent announcement in the May/June issue stated that the 1985 schedule of events is being radically cut back due to lack of interest. If you are interested in homesteading and appropriate technology skills, but have written off *Eco-Village* as a place to explore those skills, perhaps you should give them a second try. The staff at the village and at **TMEN** have worked hard for many years to build a

"living lightly" education center relevant to the general public. It would be a shame to see them fail.

They are open only during certain times of the year on a drop-in basis Monday thru Friday and charge \$2.00 a head. Write for a full color brochure and schedule.

### The Planetary Association for Clean Energy

212-77 Metcalfe St.  
Ottawa, Ont. K1P 516

*The Planetary Association* offers reports, publications, and video tapes on the health effects of electronic pollution (video displays and extremely low frequency electromagnetics) and non-conventional energy sciences. A sampling of publications includes: "*Studying Problems Associated with Video Display Systems*", "*Inside a Cathode Ray Tube*" and "*The Emerging Energy Science*".

This is your source for information on all those bizarre energy systems you hear tantalizing bits about: The Newman magnetic motor, Tesla waves and inertial propulsion engines. They also publish a newsletter free to members of the organization (\$35/year). A current list of materials and membership information is available on request.

*For those interested in Permaculture (as almost everyone seems to be) we offer the following contacts:*

#### Elfin Permaculture

Box 202  
Orange, MA 01364  
(617) 544-7810

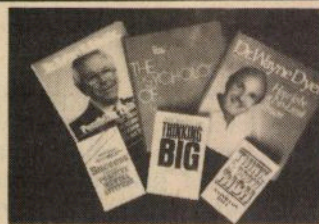
They offer workshops and classes on permaculture in theory and practice as well as on topics of related interest. They also offer a publication entitled **The International Permaculture Seed Yearbook**.

#### Permaculture Communications

P.O. Box 101  
Davis, CA 95617  
(916) 756-6070

*Permaculture Communications* offers a mailing list on Permaculture and Sustainable Agriculture, a **Permaculture Designers Directory** and various educational programs.

Bill Mollison's next book — **Permaculture: A Designer's Manual** should be out soon. Those who want to get it from the source can try writing: Tagari, P.O. Box 96, Stanley, TAS 7331, Australia.



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Bruce Nappi  
The Millenium Fellowship  
Reading, MA

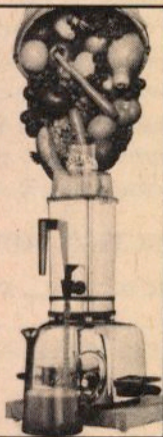
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# BACK ISSUES COMMUNITIES Journal of Cooperation

## Highlights of some of the thirty-one past issues currently available through this SPECIAL BACK ISSUE OFFER!

64. Social notes on the Great Alternative Life Group in the Sky; a story of old folks in a future world; Kerista on Kerista; the case against consensus; and kibbutz education.

63. Living in community: at Stelle, Twin Oaks, International Emissary Community; peace efforts in Nicaragua and the women's peace camp in Comiso Italy; and democratic management

62. Progressive economics and politics; co-op housing; new ideas for your community and kibbutz society.

61. Parenting, childcare and education; co-op housing; working for peace—Syracuse Cultural Workers Project; and planning in community.

60. Reviews of gatherings in '83; alternative economics; school co-ops.

57. Feminist Therapy; Women's Resources Distribution Company; designing your food coop; a report on the National Audubon Society's Expedition Institute; the coop-

erative vision in science fiction; and George Lakey's thoughts about abolishing war.

55. National Consumer Coop Bank, Worker's Trust, C.U.G., Coop America; Computers in the Coop; CCA Institute; and workplace democracy.

54. Interviews with Bright Morning Star and Meg Christian; peace work in Europe; a discussion with 5 social activists; community land trust; kibbutz society; and neighborhood development

53. Spiritual Communities— The Farm, Dromenon, The Planetary Network of Light, Sirius Community, The Abode of the Message, Ananda Lama Foundation, The Renaissance Community and Shambhala

52. The barter system; networking; Santa Cruz Women's Health Collective; International Commune Conference; worker ownership; East Wind Community; and leaving community.

51. Political paradigms for the eighties— Citizens party, Santa

Monica, CA., Center for Community Change; feminist political strategies; coops in El Salvador; Dandelion Community

50. Death and Dying: George Lakey on cancer; Conn. Hospice; grieving, and a death at Twin Oaks

48. International— Cuba, China, India, El Salvador, England, Israel, Spain, and the U.S.A.

47. Stories— excerpts from a Twin Oaks story; Barwick; Bay Area Collective; Berkeley Collectives

43. Health and community business— tofu making; Heartland; Radical Psychiatry; neighborhood health clinic

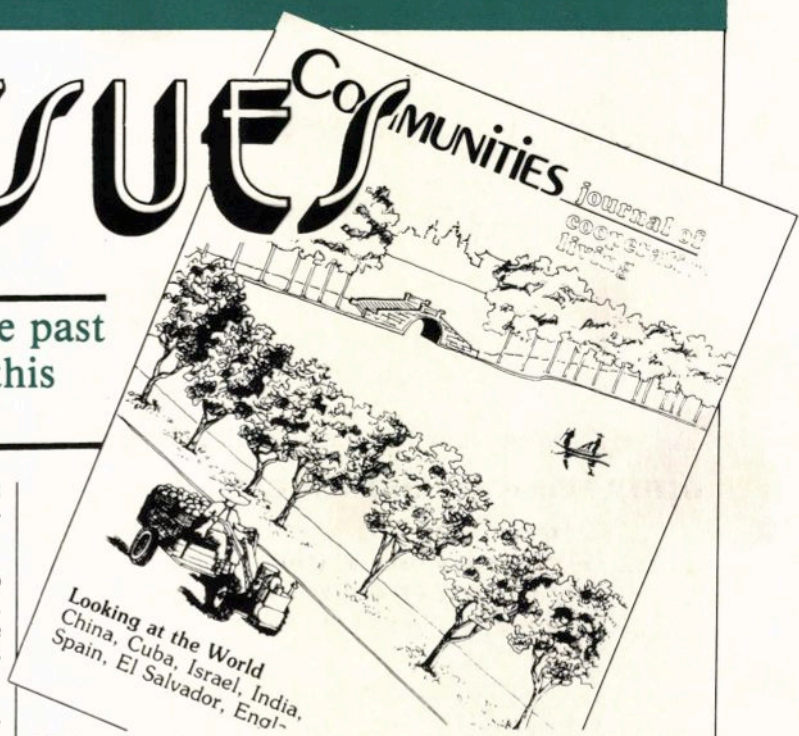
41. Friendship, family and sexuality; Synergy, Renaissance Community and Kerista Village

40. Community development; women and money; trusteeship; and an interview with a woman builder

39. Women sharing; the Hutterites of 350 years ago; housewife to activist; Healing Waters gathering; and workplace democracy.

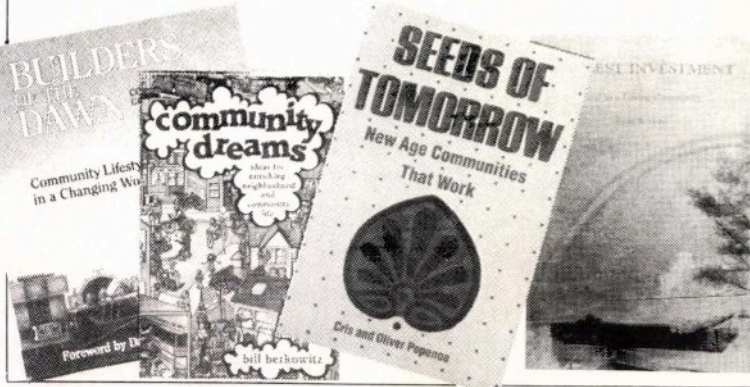
36. Community in British Columbia; kibbutz child rearing; Kerista Village; and a readers' survey.

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