The Land Institute

THE LAND REPORT

Number 2 June, 1977

Spring Session Underway

The second group of students to join the search for alternatives began their program on April 4: Cindy Jones, Salina, Ks.; Jim Rode, Long Island, N. Y.; Mike Weiss, Spring Hill, Kansas; Jim Kohring, Bowling Green, Ohio; Nils Gustafson, Gainesville, Florida; John Jankowski, Kingsford Heights, Indiana; and Kerry Peterson, Pueblo, Colorado.

Shelter and energy were primary interests, so projects were planned in those areas. The group decided to finish the newspaper house begun by Eric Herminghausen first semester, and to design and build a third shelter that would be partly underground and partly made of adobe. Nils and Mike wanted to work on windmills and wind generators, and Jim Rode and John Jankowski were interested in helping install a solar energy system on the new building.

The group began discussing Zen and the Art of Motorcycle Maintenance by Robert Pirsig, and then went on to Where the Wasteland Ends by Theodore Rozak. Small is Beautiful by E. F. Schumacher will also be read and discussed.

Other activities during the session have included a visit to the Sand Prairie near Newton, Kansas, a visit to the handbuilt houses of Jule Lorenzon and Leland Lorenzon, and a seminar on environmental ethics with Richard Perkins of the Environmental Studies Department of the University of Kansas. and Lothar Schweder, Director of the Mcpherson College Evening Degree Program, as guest patricipants.

Land Institute members plan to visit the organic farm of John Vogelsberg, Home City, Kansas, and the Adobe Museum in Hillsboro, Kansas.

During the spring session the students have been assisted with their projects by Giulio Tambalo. An Italian by birth, Giulio spent thirty years in Swaziland, Africa, and has had much experience with third world technology.

In This Issue

Dana Jackson, Editor

Schumacher Visits The Land

There were scant signs of spring at The Land on March 8 when Dr. E. F. Schumacher visited, but it was a pleasantly warm day, just right for a walking tour. Wes Jackson and four fall session students, Kyle Mansfield, Eric Herminghausen, Nancy Vogelsberg and Sue Leikam showed Dr. Schumacher the student projects and the new shop and classroom building under construction and explained the goals and philosophy of The Land Institute. Peter Gillingham, director of Intermediate Technology of Menlo Park, California, and Patrick Long, editor of the Intermediate Technology Report, accompanied Dr. Schumacher to Salina and also participated in the tour of The Land.

Dr. Schumacher explained the need to develop appropriate technology in a free public lecture given to an overflow audience at the Salina Community Theatre that evening. After covering the main themes included in his book, Small is Beautiful, Dr. Schumacher discussed the importance of involving diverse elements of society in bringing about a change from the emphasis upon large-scale, energy-intensive, violent technology to appropriate technology. His audience was just such a diverse group. It contained the ABCD elements he described: administrators, businessmen, communicators (from the media and education) and the democratic groups, the organizations with activists who work for change.

Everyone associated with The Land Institute was pleased to share Dr. Schumacher's visit with the public. As we inevitably lessen our dependence upon oil, perhaps we can follow some of Dr. Schumacher's suggestions in our local community and make the transition easier.

Editor's note:

Each of our board members contributes to The Land Institute in a special way. We call on board members regularly to share their time, their knowledge and experience, and their resources with us. When we received a copy of The Land Journal, and read about the philosophy and the work of the Friends of the Land, we were intrigued and wanted to know more. This was a new organization to us, although the names of those involved were famous: Aldo Leopold, Louis Bromfield, Paul Sears. To find out more about the group, we turned to one of our board members, Frank Anderson, who is the librarian at Wofford College in Spartanburg, South Carolina. In a very short time, Frank sent this article to us to use in The Land Report.

Friends of the Land: 1940-1962

In 1940, the United States was emerging from the depression and the dustbowl years and gearing up for war. The government was ravishing the land to establish military camps, war production factories, and prisoner-of-war compounds. The U. S. Department of Agriculture was exhorting farmers to increase their production through the use of chemical fertilizers and insecticides. Megatons of meat and food were needed to feed our fighting men and starving allies. Never mind about the long range effects of the indiscriminate use of chemicals, or damage caused by farming land which needed to rest. This was not really an auspicious time for the establishment of an organization interested in the conservation and preservation of America's land and natural resources. Yet, in 1940, a group of concerned citizens met in Washington to organize a society called "Friends of the Land." Louis Bromfield, American novelist and owner of Malabar Farm in Ohio, wrote about the founding group in a 1944 Reader's Digest article:

> "These men...resolved to educate the American people to the danger of our soil being destroyed, our forests cut down without replacement, our towns and farms washed away by floods, and great areas of once fertile land turned into desert...the men present at the first meeting...were aware that no remedial measures would be effective if imposed by government. The people themselves had first to understand the gravity of the situation and then cooperate in demanding and carrying out reforms. It is a slow process, an educational one, but the only sound method under democracy."

The first national meeting of the society was held in Columbus, Ohio, and a journal titled Land was established. The quarterly was published in Baltimore between 1941 and 1954. It was then superceded by Land and Water, which was published in Zanesville, Ohio, from 1955 through the summer issue of 1959, when it ceased publication. Nine volumes of a supplement to the journal, the Land Letter, were issued between 1941-49, and then continued as Land News before incorporation into the journal with the January 1953 issue. The magazine espoused a philosophy

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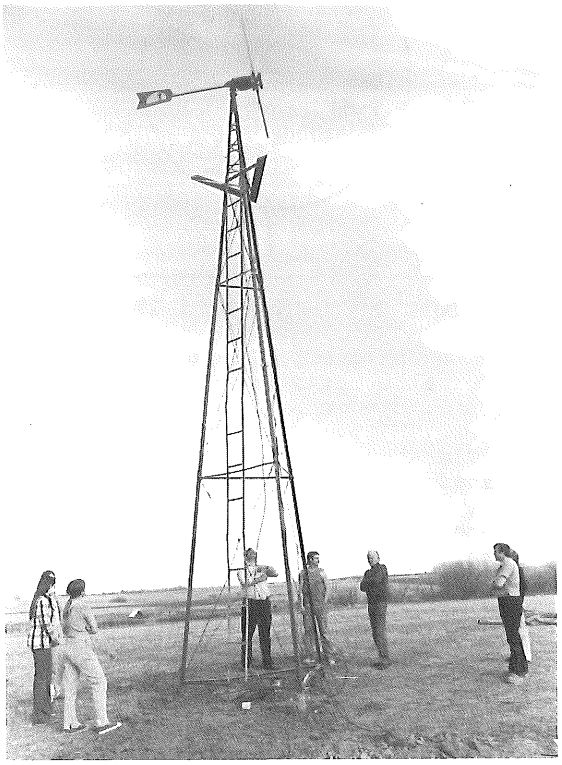

Schumacher Becomes Honorary Board Member

E. F. Schumacher agreed to become an honorary member of the Board of Directors of The Land Institute during his visit to Salina on March 8 and 9.

Dr. Schumacher's association with The Land Institute will greatly benefit the students, the Board of Directors and the Friends of The Land. It is a statement of the basic values and goals which The Land espouses. Individuals associated with The Land might not agree on all points with Dr. Schumacher, but the direction in which Small is Beautiful points society is the direction in which The Land Institute wants to move. As an honorary member of the Board of Directors, Dr. Schumacher helps to explain us and to inspire us.

Nancy Miller Elected to Board

On April 16, 1977, the Board of Directors of The Land Institute elected Nancy Miller as the tenth member of the Board. Nancy is the Assistant Director of the Environmental Studies Center at Bowling Green State Univ. in Bowling Green, Ohio. She has a B. A. and ån M. A. in geology from Boston University.

While a guest at The Land March 6 to March 10, Nancy shared her knowledge about the environmental movement in education. She also shared in the physical work at The Land as we prepared for the E. F. Schumacher visit. She has continued to share by sending reprints of articles relevant to our interests, giving us references to new and significant books, and speaking to students about The Land. Nancy says that she is interested in The Land Institute because it is an example of the environmental ethic applied.

Learning About Wind

For those of you whose interest in The Land Institute has been sparked by the Report you are now reading- welcome aboard. It was through this very medium (the initial Land Report) that I discovered The Land and eventually became a student here.

A photograph and an article describing a fall student's experience with an electricity-generating windmill is what aroused my curiosity the most. I had been considering my own first-hand experimentation, and The Land Institute appeared an ideal environment for beginning.

I learned some basic facts about the existing wind plant which Kyle Mansfield set up. Resting atop a top a 35 feet tower is a 32 volt, 500 watt Aircharger, which generates direct current to the battery bank below, with a storage capacity of 32 volts and 20 amp hours. This system, while inadequate for the voracious appetite of the average energy-consuming home, does supply all the lighting needs for the small experimental houses situated at the tower's base.

My work here began on an elementary level with a water-pumping windmill. A vintage Aero-motor windmill, which had evidently fallen to the ground, has been acquired, and Nils and I have spent some time straightening the bent blades and tower struts. The pumping mechanism appears to be in good condition. We have recently purchased a newer windmill which will draw water out of the well and pump it to the old windmill, which will then lift it to the experimental village area.

More intriguing is the Jacobs 32 volt, 2500 watt generator which we intend to purchase. Also a near antique, the machine's active history dates back to the pre-REA days, when wind-electric plants were common. We want to begin to coax this system back to life, which will include fabricating new propellors ourselves.

The Jacobs generator could be counted on to produce as much as 450-480 kilowatt hours of electricity per month, almost enough to meet the basic needs of an average home. For The Land, it could supply the minimal electricity required to operate the power tools and lighting utilized in our two story building. In combination with the 32 volt, 1680 amp-hour battery bank, and DC to AC current inverter, we should have a relatively substantial and self-sustaining supply of "home-grown" electricity.

There are admittedly various drawbacks to this mechanical system, but there are also definite pluses. With the costs of utility-generated electricity promising to escalate at an unprecedented rate, the era of home-owned wind plants might once again return. They will be especially economical for those who can

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Board Members Attend AAAS Meetings

The 143rd Annual Meeting of the American Association for the Advancement of Science was held in Denver February 20-25. Denver is close enough that Land Institute board members Sam Evans, John Schwartz and Steve Burr, along with Wes and Dana Jackson, were able to attend for two days. "Science and Change: Hopes and Dilemmas" was the theme, and The Land delegation had great difficulty choosing among symposia entitled Energy, Resource Policy, Agriculture and Ecology, Arid Lands, Medicine and Health, Science and Public Policy, and Technological Implications, all of which relate in some way to the interests of The Land.

"Can the Appropriate Technology Movement Really Significantly Enhance Freedom and Quality of Life?" was the question addressed in a particular relevant session of the Techno-logical Implications symposium. After hearing E. F. Schumacher speak the day before, and after listening to several speakers, such as David Morris of the Institute for Local Self-Reliance, discussing the accomplishments and opportunities of intermediate technology, the participants were challenged by Joseph Coates, Assistant Director of the Office of Technology Assessment in Washington D. C.

Coates maintained that the appropriate technology "movement" could not succeed because it lacked various elements which have been shown to be necessary components of any successful idealogical movement. Successful idealogical movements must explain clearly the cause of our trouble, must present scenarios of the future, must prescribe exactly how to get from here to there, must come out of the middle class, and must occur over a 15-40 year period.

Coates emphasized the lack of participation by the middle class. He stated that they want to move up to what the rich have. They like things neat and tidy, and small couldn't sell. Those now interested in the appropriate techno-logy movement are the "radical chic," and the hobbiests, and they will not stay involved long enough to bring about change.

Those who heard Joseph Coates were forced to concentrate their minds on just what the appropriate technology movement means. In the discussion following his talk, some denied that it had to be an idealogical movement. Others stated that the systematic approach, the carefully analyzed procedure for the movement was unnecessary. Besides, did Jesus or Martin Luther do a systems analysis before working for change in society? It was a lively discussion.

D. J.

Do You Want to Visit The Land?

Visitors at The Land are welcome--by appointment. If that sounds cold and unfriendly,please read on a moment. We are pleased that people are interested in the work of The Land. We think it is important to encourage people as much as possible in their individual efforts at building solar collectors and other appropriate technology. However, there is a limit to what we can do.

In order to conduct classes, assist students on projects, continue construction on the new building, work on a book, cultivate the garden, take care of correspondence, and maintain family life, the Jacksons must limit the amount of time spent showing visitors around. Students also must be free to do their work.

If you would like to visit The Land, please write or call ahead of time and make an appoint-ment. Then, when you arrive, we will have time to treat you as a guest.

Rebuilding the Library

The Land Institute library was completely destroyed when the "Doings" building burned last fall. Since then we have begun to rebuild the library with donations of books, papers, and money from friends of The Land. To these friends we are sincerely grateful.

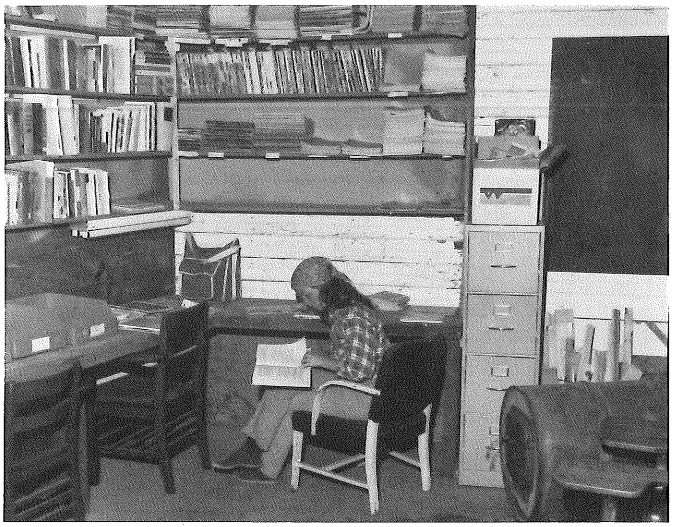
One of my projects since I arrived at The Land this spring has been to organize the books and papers into a workable library. This has been an ongoing task since we are continually receiving new materials. At present, I would say the library is organized into three divisions.

The first division is the Smoky Hill Audubon Society library. This division includes numerous books on wildlife in North America, especially, and quite appropriately, birds. There are also a variety of books on topics ranging from the biosphere to Zen Buddhism. These books do not belong to The Land, but rather to the Audubon Society. However, they are filed here for our use. In return, Audubon members have access to everything in The Land library.

The breakdown between the other two divisions of the library was roughly determined by what materials I could stuff into filing cabinets and what materials I couldn"t stuff into filing cabinets. For the most part, the former are articles, reprints and pamphlets; and the latter, periodicals and books. Although the system would undoubtedly appall any respectable librarian, it has the virtue of simplicity and so far has suited us amiably.

Nothing lasts, unfortunately, especially simplicity. The two divisions are sub-divided into, roughly, twenty-six sections. These sections are fairly comprehensive, adaptable to our library, and quite well thought out, but not by me. I borrowed twenty-one of them from the review classification of Environmental Abstracts. The classifications are:

1. Air Pollution
2. Chemical & Biological Contamination
3. Energy
4. Environmental Education
5. Env. Design & Urban Ecology
6. Food & Drugs
7. General
8. International
9. Land Use & Mis Use
10. Noise Pollution
11. Non-Renewable Resources



12. Oceans & Estuaries
13. Population Planning & Control
14. Radiological Contamination
15. Renewable Resources- Terrestrial
16. Renewable Resources- Water
17. Solid Waste
18. Transportation
19. Water Pollution
20. Weather Modification & Geophysical Change
21. Wildlife
22. Network (Other individuals or groups with endeavors similar to those at The Land)
23. Ethics
24. Biology
25. Anthropology
26. Homesteading

Since a number of books & articles did not fit into the twenty-one classifications borrowed from Environmental Abstracts, I devised the last five sections to accommodate them.

Due to donations, our library is growing steadily. We have a fairly extensive collection of general ecology and general environmental books. The E.P.A. sent us a large number of their publications which give us comprehensive data on many environmental problems.

There are areas in which resources are lacking. Notable among the deficiencies are books and articles on International environmental problems, Non-Renewable & Renewable Resources, Transportation, Weather Modification & Geophysical Change, Environmental Design & Urban Ecology and practical, how-to-do-it type books relating to Homesteading.

We have many periodicals such as Organic Gardening, Environment, Environmental Action, and Not Man Apart. We would like to subscribe to other periodicals within the 26 sections, and would appreciate financial help for this.

Presently our library is located on the lower floor of the new building. Our plans are to move to the upper floor when it is finished.

Jim Kohring

Banking for the Future

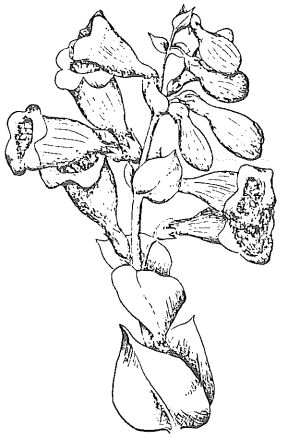
We have received seed of twenty-five species of native prairie wild flowers from the Plant Materials Center in Manhattan, Kansas. This center has some 350 accessions to its credit, and a program of evaluation is underway. The forbs and miscellaneous legumes we received have been planted in rod long rows two feet apart. Any seed produced by these plants will be replanted to increase the seed-producing stock. When a species is firmly established, seed will be collected and spread over the areas of The Land in which we hope to re-establish the prairie to a condition similar to what it was before the great plowing. We also hope to make seed available to others in the area for environmental planting around schools, outdoor laboratories and study areas, as well as individual homes.

Native wild flowers and grasses would be beautiful and useful if planted along roadsides. These plants, along with certain woody species, are the most effective devices known to stop water run-off. When firmly established, they compete favorably with the nuisance or "noxious" species such as purple thistle, which road crews try to eradicate by spraying. The energy-intensive method of maintaining roadsides through spraying and mowing could be replaced if the native species were planted.

There is another practical reason for re-establishing, on a large scale, the old natives. Each species contains within it the genetic code which brought it to this point in history. That code should not be taken for granted. It has been altered, molded, buffeted about for millenia upon millenia. The code has responded to the subtle, and not-so-subtle, stresses of nature. Consequently, each organism which leaves offspring behind is a finely tuned system of responses.

In recent years, many of our major crops have had their formerly broad genetic base sharply reduced as they were streamlined for production. It doesn't seem at all out of the question that we will one day turn to the wild relatives of our domestic crops for genetic raw material. What we have started in those rod-long rows at The Land is a local branch of a "gene bank." But whether a withdrawal from our bank is ever requested or not, we shall enjoy looking at the wild flowers and learning about them.

W. J.



Large-flowered Beardtung.
Penstemon grandiflorus.

Showy Gaillardia.
Gaillardia pulchella.

The Ant and the Grasshopper

Once upon a time there lived a very conscientious ant named Eugene. He would always save his newspapers for the Boy Scout paper drive, and he voted in all the elections. One day Eugene was outdoors remodeling the sides of his house, of which he was very proud. He heard a flock of birds flying overhead and looked up just in time to see a white glob fall and land, plop! on his new dirt walls. Eugene was outraged! Twitching his antennae in anger, he scurried over to where one of the birds had landed.

"Look what you did," he cried, and stamped all of his feet at the same time. "All of my hard work ruined!"

The bird was huffing and puffing. "Awfully sorry about that, but we're kind of in a hurry. We've got to get south before the energy crisis comes." With that the bird took off, leaving Eugene to wonder what kind of creature the energy crisis was.

"It must be something really awful to scare the birds like that," he thought. "I'll go ask Herk the grasshopper. He gets around so much he'll probably know."

"Yep, I've heard of it," Herk said when asked. "Tain't no animal at all. Seems they're claimin' oil for our heaters is gettin' scarce." He spit some tobacco juice out of the corner of his mouth. "I don't believe it none though; they're just looking fer a reason to raise our bills some more. I ain't a gonna turn down my heat." Herk spit again and turned and hopped off.

Eugene walked slowly home, thinking about what Herk had said. "If oil is really scarce, it's the duty of every good citizen to do whatever he can to save it." So the next day Eugene looked through his Encyclopedia Antennica. Under "Energy," he found a reference to "Solar Energy," something he'd never heard of before. The article on solar energy explained how he could use the sun to heat his house.

"That's it!" he cried. "I'll build a solar collector to heat my house and be nice and warm all winter."

All the rest of the summer and fall, Eugene worked on his collector. Herk came to watch every day, but only laughed at Eugene's idea and wouldn't help.

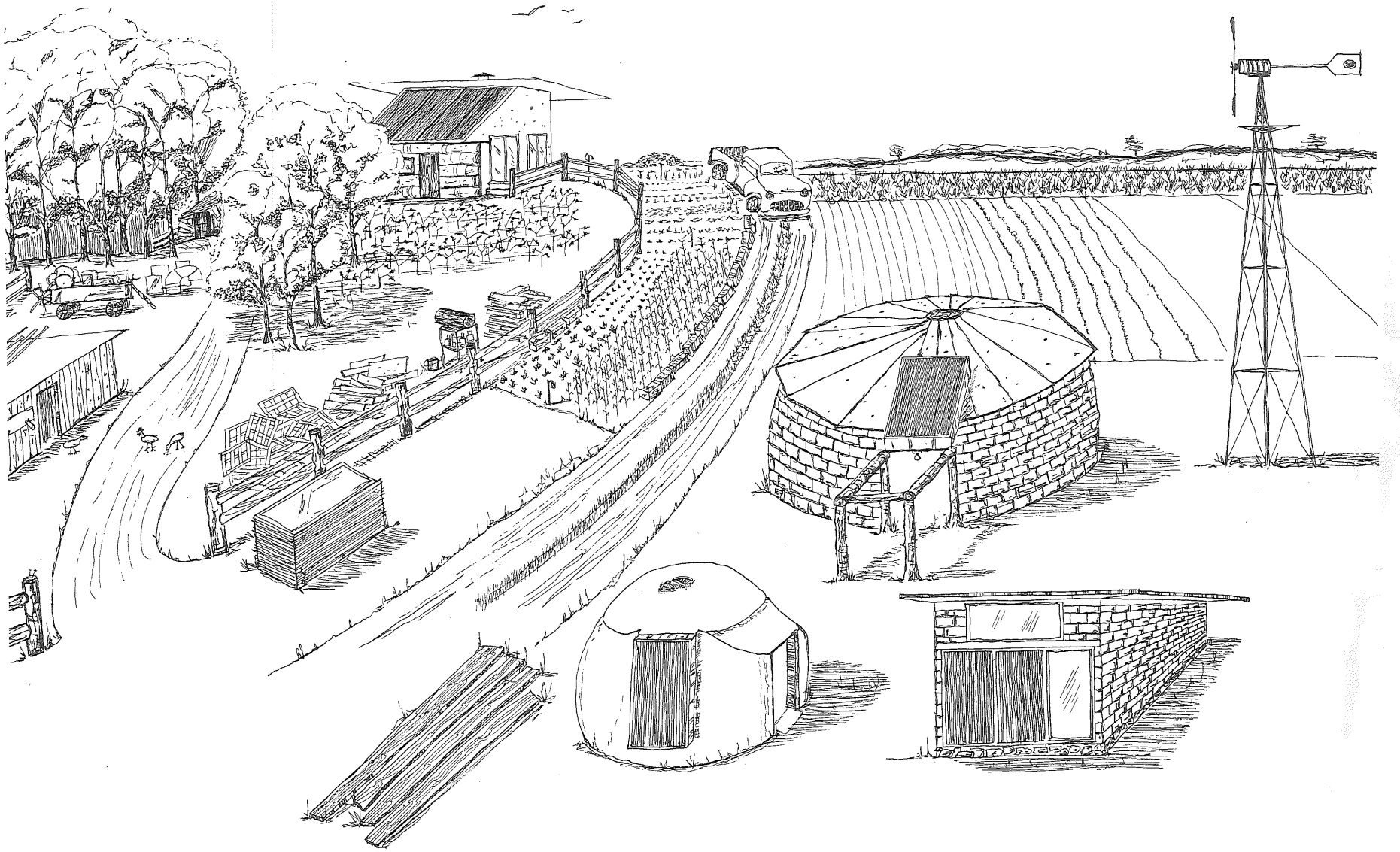
"Be sure and bring some chawin' tobacca when that fool thing don't work and you come t' sit by my stove!" he'd say. Then he'd hop away, chuckling to himself about the sun-struck ant.

Eugene's collector was finally finished. Like everything else he did, it was perfect. That winter was the coldest one they'd ever had. The energy crisis the birds had predicted did indeed appear. The flame in Herk's gas heater got smaller and smaller until it died away completely. That day Herk appeared at Eugene's door.

"I brung ya some tobacca," he muttered.

Eugene gladly let him in, but not without a lecture on solar energy and conservation. Eugene's house stayed warm throughout the winter. The solar collector worked beautifully. However, Eugene had been so busy building his collector that he'd forgotten to store any food for the winter. When the last of his reserves ran out, Eugene and Herk died, warmly, of starvation.

by Cindy Jones



John Jankowski's sketch shows how the Experimental Village could look when the three shelters are finished. The Experimental Village is a laboratory for those who design and construct the buildings, and a demonstration of alternatives for those who visit The Land. These small buildings eventually will be used by students for special projects, study areas, or storage. They will also be used by groups that attend conferences at The Land.

Designing the Third Shelter

Houses built on top of the ground have always looked to me like foreign objects. Their sharp corners and peaked roofs set them apart from their surroundings. They stick out; they just don't blend in with the scenery. I think the problem is particularly bad on the prairie where there are few trees or hills to dominate the houses. When I look out over a field, and my eye runs--bump--into a house projecting up and out, I realize how vulnerable it really is. It has nothing to protect it from the weather. It actually defies anything to try.

That's one reason I became interested in underground houses. A house which rises naturally out of the earth is much more aesthetically pleasing. It also makes more sense for insulation purposes. In winter the earth helps keep the house warm and shields it from the north winds. The natural coolness of the earth in summer keeps the house comfortable.

John Jankowski, Kerry Peterson, Jim Rode and I spent a long time talking over plans and priorities while we were designing the third shelter in the experimental village. The object was to build a house that practically anyone could build almost anywhere in this part of the country. We wanted it to be made of locally available materials which were cheap and not wasteful of energy.

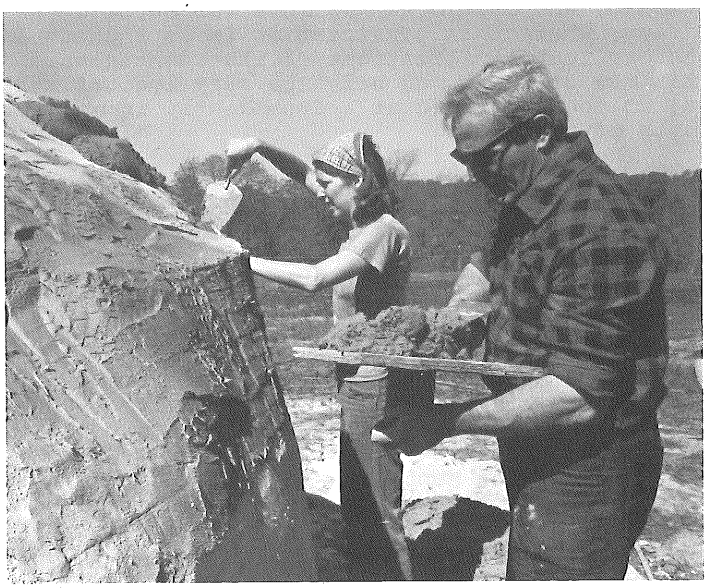
The final plan hopefully combines all of these objectives. The house sits on level ground so that a south slope is not required. Field stone and adobe are the main building materials. The stone was gathered from a local pasture, and the adobe was mixed from clay taken out of the hole dug for the house.

The design calls for 10' X 12' walls with a single pitch roof rising from a height of 3' on the north to 8' on the south. The portion of the walls which are underground are being built with the pasture sandstone using cement as mortar. The rest of the walls will be finished with the adobe bricks. The walls will be double with a 2" air space between them filled with straw for insulation.

Large south windows and collectors will help heat the house in winter. Overhangs will shield out the sun in the wummer. The adobe and stone walls will act as heat sinks to store the energy coming in through the windows.

Presently we are finishing the stone portion of the walls by capping them off with concrete. The next step will be to start building with adobe.

Cindy Jones



The Newspaper House

Fall session student Eric Herminghausen started a house made of newspapers, chicken wire and cement. While he made good progress on it, considering all the problems associated with design and collection of materials, it was far from finished when the session ended.

Spring session students pitched in to work on the structure before moving to other projects which they had in mind. While much remains to be done, at least we are at a point where the newspapers won't get too wet. The structure has a 4' X 8' solar collector on it which uses air as the heat transfer medium. The walls are approximately 16" thick. Masonry cement was pressed into chicken wire and 1" X 2" welded wire mesh. This wire cage is supported by 1/2" and 5/8" reinforcement bar. The outside needs another coat of masonry cement before being painted with a sealant of some type. We have yet to investigate what kinds of paint would seal pores and cracks.

This shelter will be monitored for some time to come. Skeptics about the suitability of bundled newspapers as a building material usually predict the development of a mice or insect problem. However, I found a ten year old newspaper in an outhouse with only a yellowed top and no insect holes. Nils Gustafson, with us this session from Florida, says newspaper in that humid area would be quickly devoured. Perhaps the chemicals in the paper and print are enough to resist the fungi and insects in our more arid, less-continually warm environmen. We'll see how it goes. W. J.

Adobe in Kansas

At The Land we have been experimenting with the use of adobe as a building material for this area. The meaning of the word "adobe" (Spanish) is sun-dried mud bricks. Another use of the word is for a building made of these mud bricks.

My interest in this material was heightened by two individuals: Peter van Dresser, who lives in the Southwest where adobe was used by the original inhabitants of the area and is still one of the primary building materials, and Giulio Tambalo, who developed his love for adobe in Africa, where this construction is as ancient as the earliest civilizations of that continent. The idea of using mud brick is very logical and was no doubt arrived at independently in many parts of the world.

The Indians of the Southwest used mud to build terraced structures consisting of tiers of windowless rooms entered by a ladder from the roof. These structures were made of mud built up by the handful. The Spanish, having built with mud for centuries, continued to do so upon entering what is now New Mexico, U. S. A. However, they used the mud brick, making walls which were often two feet thick. The Spanish and the Indian used the simplest of tools, made do with what was available to them, and created some of the finest architecture in this country.

Adobe has already been used successfully in Kansas by the Mennonite farmers who came from South Russia. An example of their architecture built in 1876 is still in use in Hillsboro, Kansas. The entire village of Hope Valley, near Hillsboro, was made of adobe bricks and packed adobe mud for the walls, with slough grass for roofs.

There are many advantages to adobe bricks.

1. They may be made directly on the building site with existing clay.
2. One or two people can do the work.
3. The bricks can be made using a shovel, hoe & trowel as the basic tools, and only straw as an added ingredient.

4. The cost is negligible.
5. They are retainers of heat in the winter and cool air in the summer.
6. They are fire resistant.
7. They are safe in the Kansas climate if provided with a concrete or rock footing and a sufficient overhang. While rain will not hurt them, they cannot be left sitting in water.
8. Mud or concrete/mud mix may be used as a mortar, thereby cutting more cost.
9. They may be used in designs which include solar heating.

I could list many more advantages of this building material, but our primary interest at The Land Institute is in the low cost of adobe. We could use this material to build our own homes inexpensively, while creating beautiful and low-energy consuming structures.

We have a reddish clay on The Land which tests out to be 40-47% clay, the rest being sand and loam. This clay, or similar clay, can be found in other areas of Kansas. Sand is a necessary ingredient for adobe making. If the clay content is much higher than 50%, sand will have to be added to produce a malleable mud mixture.

Our early attempts to mold bricks under pressure in a form which we constructed were unsuccessful, as we could not apply enough pressure. We changed to a simple system which worked well for us.

Our method of making bricks is to mix the clay, straw and water in a cement mixer, dump some into wet wooden forms, smooth out the mixture, and lift the bricks off immediately. The bricks are finished and only have to sit and dry. They must be turned on edge after drying on top to get a uniform curing.

Experimentation is important in producing a brick that will work. In our first attempts at brickmaking, we alternately did not use enough straw or water. Enough straw must be used to hold the mud together as it dries.

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Enough water must be added to produce a mud that can be scooped easily from the place of mixture into the forms. Our third attempt created a perfect brick which has survived the driving force of two substantial rainstorms.

The size of the brick depends on one's building needs, but people in the Southwest working with adobe recommend a 4" X 10" X 14" brick. This size is easy to carry while still large enough to cut down on the number of bricks required for a structure. At present we have made over 70 adobe bricks which are 6" X 5 3/4" X 15". We chose this size to work effectively in the making of a double wall. Our adobe blocks will be placed side by side on a 15" rock foundation with a 2" air space between.

We have not laid up enough adobe yet to speak of our experiences with that process. However, for those of you interested in the use of adobe as a building material, below are listed some very good references. In addition, we would welcome your inquiries or suggestions as we endeavor to create an adobe structure. which might be copied by Kansans interested in building their own homes.

Kerry Peterson

Build with Adobe by Marcia Southwick (The Swallow Press, Inc.)
Handbook for Building Homes from Earth and Earth for Homes from Housing & Urban Development
Off. of International Aff.
Washington D. C. 20410
Adobe, Build it Yourself by Paul Graham McHenry, Jr. (Univ. of Arizona Press)
Adobe News, a monthly magazine from
Adobe News Inc.
P. O. Box 702
Los Lunas, N.M. 87031

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repair old wind generators locally available. Our second-hand, recycled system will be capable of generating as much electricity as many of the new models on the market, but at less than one fifth the investment. We probably will not have time to restore the generator completely during our session, but perhaps future students can complete the work we started.

Mike Weiss

Special Programs at the Land

I. TWO DISCUSSION EVENINGS on The Genesis Strategy by Stephen Schneider. (Available at Downtown News & Books, Salina, $4.95)
September 19 and September 22, 7:30 P. M. at The Land.
*REGISTRATION: $5.00. Due by Sept. 9. Limited to 25 people.
The Genesis Strategy is a no-nonsense evaluation of climate and of the dangerous prospect that we are drastically disrupting the world's climate system and affecting its food supply. It is a series of concrete proposals based on a principle as old as the Bible itself--namely, that we should plan for adversity by maintaining diversity and by providing ample margins of safety to keep the world alive.

II. TWO DISCUSSION EVENINGS on Should Trees Have Standing? Toward Legal Rights for Natural Objects. (Downtown News & Books, $1.50)
October 25 and October 27, 7:30 P. M. at The Land.
*REGISTRATION: $5.00. Due by Oct. 15. Limited to 25 people.
This provocative little book (actually a reprint of a paper) will be discussed in conjunction with The Endangered Species Act of 1973 and an article in the May Audubon magazine, "Mighty like a Furbish lousewort."

III. SOLAR COLLECTOR WORKSHOP FOR DO-IT-YOURSELFERS.
Saturday, November 12, 8:30 A.M. at The Land. (Bring a sack lunch.)
*REGISTRATION: $5.00. Due by Nov. 2. Limited to 25 people.
We will build a flat plate collector in the morning. Basic information on how the collector works and general problems of solar heating systems, including both air and water storage systems, will be discussed.

IV. LECTURE SERIES ON GREAT AMERICAN NATURALISTS.(John Muir, John James Audubon, Aldo Leopold)
January 16, 23, and 30 at The Land, 7:30 P. M.
*REGISTRATION: $5.00. Due by Jan. 6.

*Send to Dana Jackson, The Land Institute, Rt. 3, Salina, Ks. 67401.

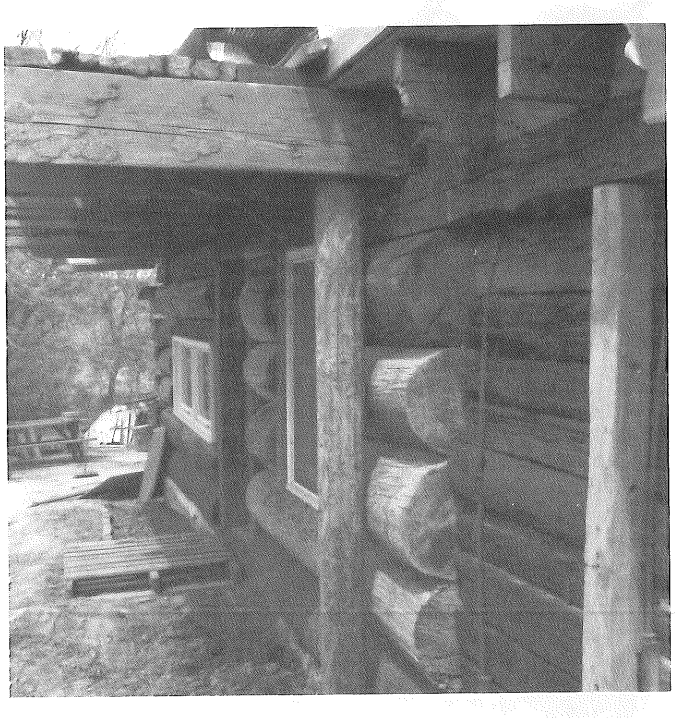
Continued from pg. 2.

of careful land use and conservation and preached the ecological ethic. Leaders of the conservation effort, from around the country, contributed articles for the journal.

Bromfield concluded his Reader's Digest article with this statement: "The war has not been able to stop the activities of the Friends of the Land. I doubt that anything will ever destroy this organization, for its principles are those of democracy and common welfare, based upon hard economic fact and upon the self interest of every citizen."

Bromfield was a splendid polemicist, but not too splendid a prophet. The Friends of the Land society existed for more than twenty years, but in 1962 it was absorbed into the Izaak Walton League of America. However, maybe Bromfield wasn't such a bad prophet after all since the conservation movement in our country is stronger today than it has ever been. Ecological awareness is instilled into our young in the lower grades; laws are concerned with the quality of our national environment; land developers must file environmental impact statements before altering the landscape; and business and industry are not as careless about waste disposal and pollution as they once were. Things are not perfect, by any means, but there is hope for the future.

Frank Anderson



Making Do

As many people are aware, the cost of materials needed to build alternative technologies which make one less dependent upon the system can be extremely high. An average or lower income family just can't consider buying the glass and lumber necessary to construct home heating solar collectors. Few people consider building their own homes these days because the cost of materials is prohibitive.

At The Land, we are attempting to make use of materials at hand and apply them to our "appropriate" needs. In the reconstruction of our central building, there are several examples of "making do" with inexpensive or free materials not typically used as we have used them. Power line poles, which broke and fell during an ice storm, form the bottom walls of the building. Bridge planks, obtained from the county at $1 each when two bridges were resurfaced, have been used as floor joists, stair steps and decking. Walls are "paneled" with used flooring from a torn down building. A close-out sale on glass patio doors at a local hardware store made it possible to purchase enough to use both as doors and windows in the building.

An awareness of the materials available free, or at a very low cost, within a community is a great asset to anyone interested in building appropriate technology. The possibilities for using what others would throw away are limitless. The energy cost for materials, when we pick up on the waste of others, has already been paid. This is one of the important aspects of appropriate technology. Making do with such materials takes some searching, tearing down, hauling things yourself, and a great deal of imagination, but the end result can be pleasing.

Jim Rode

About Our Photographers

Harry Mason serves The Land Institute by giving classroom presentations, mechanical advice, and thought-provoking subject matter for articles (see page 11). He is also an excellent photographer. "Harry, I need a picture of the junk pile," I say on the phone. Thirty minutes later he is here, and before the day is over, the junk pile picture is here.

Terry Evans is a professional photographer who has had two books of photographs published. When she visits The Land with her camera, we know that our activities are being recorded through the eyes of an artist, and that we shall learn something about ourselves when we see the photos.

Photos on pages 4, 7, 8, 9, 10 and 11 are by Harry; photos on pages 1, 3,and 7 are by Terry.

A Philosophy of Materials

Harry Mason, retired professor of psychology from Kansas Wesleyan and friend of The Land, is well known for his mechanical improvisations. In the photograph to the side is an example of his handiwork and an illustration of his view as to how materials should be recycled.

The object in the photograph is a food chopper. Two 3/8" X 4" bolts with the nuts and washers cost Harry 68 cents. The grinder mechanism cost him $1.00. The flywheel came from a defunct clothes dryer, and the electric skillet catch pan came from basement discards. Harry found the 2 X 4 upright along the street. The crank handle and bolt once comprised a stationary handle of a worm-drive winch. The main mechanism was an attachment for a Mixmaster that Harry found at a hospital rummage sale. The only part which Harry lacked to make this food chopper was a rotating knife, so he made one from some flat stock material.

Most metal materials which wind up as junk in a junk yard, rather than a sanitary landfill, are shipped off, melted down, placed into a different shape and resold as consumer items. The energy costs for transportation, melting down and reshaping are substantial. Harry thinks we should avoid this procedure as much as possible. So do we.

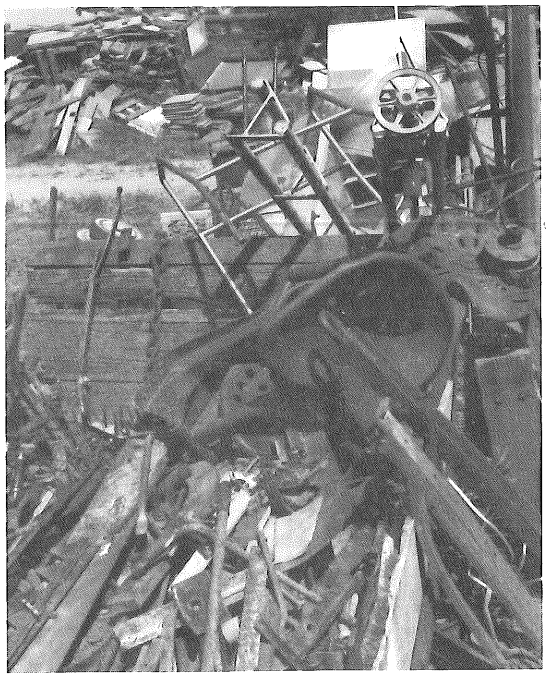
Friends and acquaintances in Salina know about our junk pile at The Land. Not everyone is aware of the difference between "good" junk and "bad" junk, and sometimes people are too happy to unload basement accumulations on us. However, most of the time we appreciate the gifts and the tips on inexpensive materials available.

Junk at The Land falls into two major categories: wood and metal. In the article "Making Do" by Jim Rode, Jim mentioned some of the materials used in the central building which essentially came from our wood pile. Jim, having worked as a carpenter, is well aware of the cost for new lumber and is able to appreciate what can be accomplished, for example, using bridge planks for joists. Oak pallets discarded by a lumber yard, a torn down redwood fence, and old boards from a grainery have also been part of our wood pile at one time. Most of our metal junk is piled into an old manure spreader. With a little experience, and a welder and cutting torch, these iron pieces can become important components for appropriate technology.

There are other materials which have found their way to The Land. One can find two stacks of patio doors (225 of them) and the associated aluminum tracks and frames. These doors, all 6' 6" high and of three widths, 4', 3' and 2' 6", were purchased for $4.50 each. The aluminum track materials were purchased at scrap aluminum price. These doors will be used for covers on solar collectors. The heavy slate bottom of a pool table, given to us by Fred Elliott, has been made into two blackboards. Al Schwartz of the Lee Company invited us to salvage materials from a warehouse no longer used by the company. Many lengths of fire hose, which possibly will be used for irrigation, scrap pieces of cork for a bulletin board, racks with cardboard trays for bolts and nails are only a few of the items of "good" junk cleaned from the warehouse.

What about our accepting the slop-over from affluence, our being the receivers and users of "goodies" in a culture of plenty? Surely, one might insist, these "goodies" will not be available in times of resource scarcity for pioneers of the 21st century. Are we really seriously engaged in a search for alternatives when so many of our projects are left-overs from the fat of our present culture? I posed this question to E. F. Schumacher when he visited in March. He didn't answer right away, but as we walked away from the patio doors he said, "Never mind. Materils want to be used and they will show you how."

I haven't resolved this question yet, but I have arrived at a temporary stopping point in my considerations. When a modern designer of shelter or tools prepares to make his drawings, he has a ready inventory before him in numerous catalogues. Gear A can be ordered out of Akron; module B can be shipped to arrive within 30 days from Toledo. Usually when we are confronted with a problem at The Land, we sort through the iron and wood piles, or check the wire or miscellaneous pile. Often we find something that will work, that will do the job we have in mind. The part that we choose often dictates much of the structure and form of our projects.



Such an approach at The Land forces us to use our imagination. It also requires time. Here, I think, is the crux of the consideration. As important as materials during the coming period of scarcity will be the imagination to use what we have and the patience to not feel terrible if it takes awhile to solve a problem.

Television has been accused of, among other things, inhibiting the imagination. It might also be responsible for distorting our image of how long it takes to solve a problem. From time to time I have noted an impatience in the students in regard to how slowly our projects seem to take shape. Television programs will have a problem developed and solved in thirty minutes, minus the time for a commercial. This doesn't happen at The Land very often.

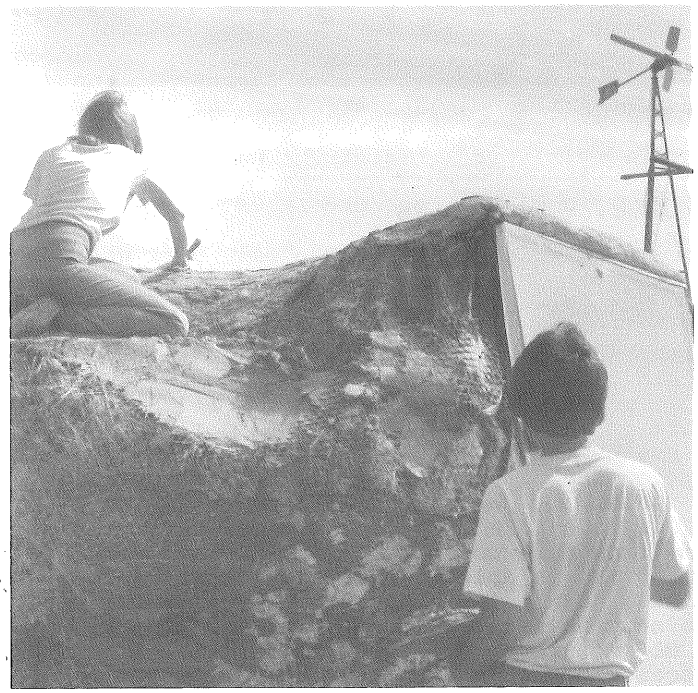
I think we can justify using the excesses of affluence as a way of preparing ourselves for a future of scarcity. Perhaps our imagination can grow even as scarcity grows. Perhaps if we develop patience, we can cope more gracefully with scarcity. W. J.

Summer Session Begins June 13

A special six-weeks summer session for eight additional students will run from June 13 to July 23rd. In addition to directed readings and group discussion, students will work on the ongoing projects at The Land. Tuition for the summer session is $300. Dormitory rooms are available on the Kansas Wesleyan campus for $100 for the six weeks session. To apply, write to The Land Institute, Rt. 3, Salina, Ks. 67401, or phone 913-823-8967.

Fall Session

The fall session is from September 12 to December 21. The tuition is $462.50. Students do not live at The Land, but some help is given in finding suitable living accommodations. The Land Institution admits students of any race, color, and national or ethnic origin.



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