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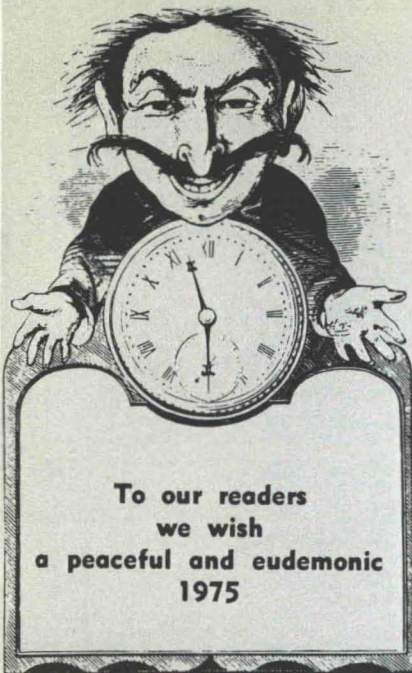
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Uptown Plaza
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Architect—Jerry Torr
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vol. 17 no. 1

We begin another volume and year of **New Mexico Architecture**. It was way back in March of 1959 that Number 1 of Volume 1 was printed. W. Miles Brittelle, Sr., was president of the New Mexico Chapter, American Institute of Architects. Philippe Register was chairman of the Editorial Board; Phil and Britt were fathers to the child. While I sometimes wonder why, the child still lives and is healthy, if not wealthy.

Beginning with the September-October 1960, Bainbridge Bunting and I became the co-editors. For some eight years, Bain poured into me what knowledge I now possess in this role of editor. It was then, and continues to be, a fascinating and rewarding role.

Robert Mallory and Mildred Brittelle do all the advertising and financial work—the business of the magazine—which makes possible the publication of each succeeding issue of **NMA**.



And thus, we begin the seven-
teenth year of publication.—JPC

nma

jan-feb 1975 • new mexico architecture

NMA News 9

Electric League of Arizona Trade
Show—A Partnership Is Formed

The Rio Grande Zoo 11

The 1974 Arts Commission Award in
the Field of New Construction.

Ehricke Space Garden 16

An interview by A. E. Maxwell

Index to Advertisers 22

(Cover—Rio Grande Zoological Park—Ron Hill, Photographer)

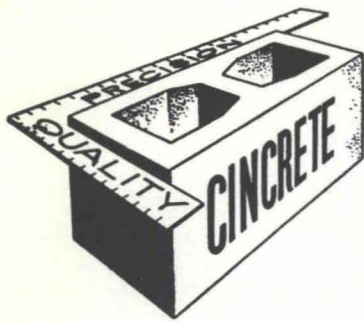
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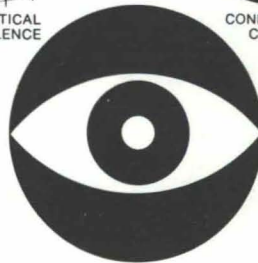
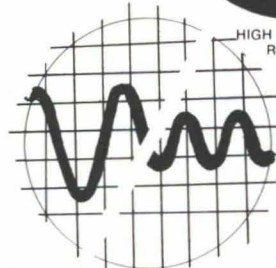
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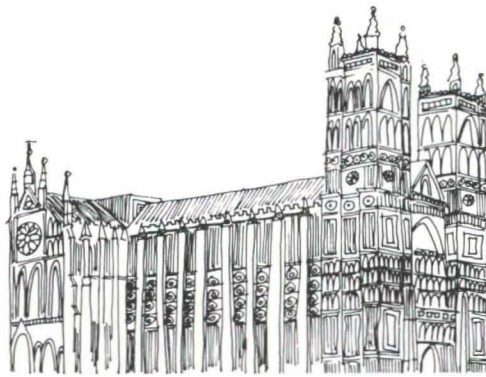
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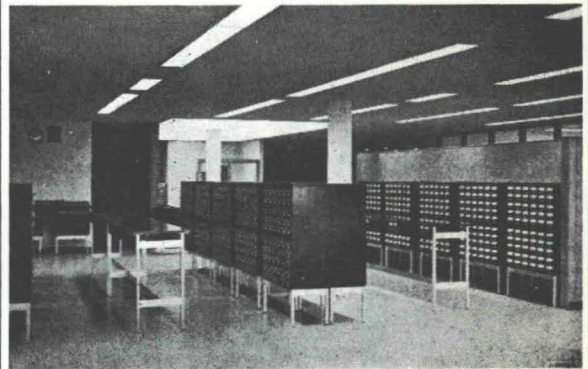
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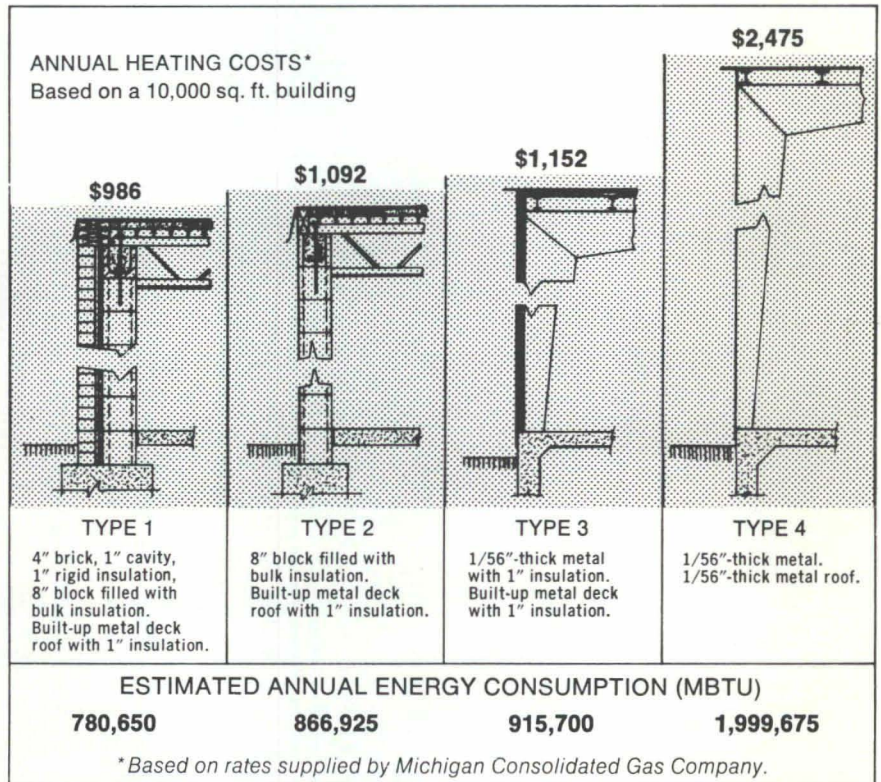
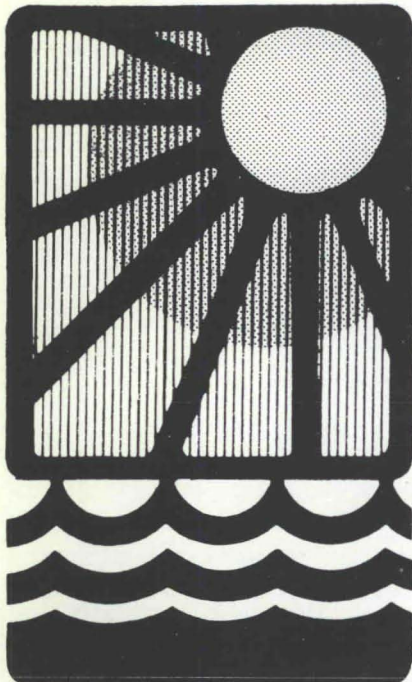
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about the energy crisis, it's that energy costs will continue to rise. The days of cheap energy are over. So by using less, you'll save more.

If you want to maximize these savings, you should consider the use of insulation . . . either added on, or in cavity-wall construction. And here's another tip: use operative windows. In the event of an electrical emergency that knocks out your air conditioning system, the cooling properties of masonry walls combined with operative windows will give you the most comfortable building possible. With masonry, you don't miss a trick. You even get more *usable* (or *rentable*) square footage. Since you need less energy to heat and cool the building, you don't have to set aside as much space — unproductive space — for mechanical equipment.



MASON CONTRACTORS ASSOCIATION OF NEW MEXICO

ELECTRIC LEAGUE OF ARIZONA TRADE SHOW SET FOR FEBRUARY 12, 13, 14

Manufacturers of commercial and industrial electrical equipment from throughout the U. S. will be displaying their newest products at the fifth biennial Southwestern regional electrical products trade show to be held in Phoenix, Ariz., on February 12, 13 and 14, 1975. The exhibition will be held at the Phoenix Civic Plaza.

Sponsoring organization is the Electric League of Arizona, trade association for the state's electrical industry. "We have a 10-year history of successful trade shows, and—the economy notwithstanding—we fully expect another outstanding success this year," said R. N. "Dick" Ruecker, executive director of the League.

"Trade shows become more important to sellers, buyers, and users of electrical equipment during an economic downturn," Ruecker continued. "Exhibitors can show their products to a wide audience within a short time period, and buyers save valuable time researching and evaluating new products and new applications just by touring the show. As energy and cost conscious as we all are these days, the trade show offers the ideal opportunity for those who need to update their knowledge on the

new products available in the market," he concluded.

The show attracts architects, engineers, contractors, distributors, purchasing agents, and government and utility representatives from throughout Arizona and its neighboring states, and is the only trade show of its kind anywhere in the Southwest.

Seminars on industry-related topics will be presented each day during the trade show.

Subjects and speakers are:

Aluminum Conductor Connection and Specification Procedures

James P. Moran, Electrical Engineer Consultant
The Aluminum Association

Electrical Code Changes—1975

Panel Discussion:
William Corbin
Corbin-Dykes Electric Co.

James Evans, P. E.
James Evans & Associates

Lloyd Nordholm
Building Safety Department
City of Phoenix

Fluorescent Dimming and Controls

Sal Soscia, Manager
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Code Requirements for Emergency Light and Power

John Schmidt,
Assistant Sales Manager
Automatic Switch Company

Ground Fault — Problems and Solutions

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Westinghouse Electric Corporation

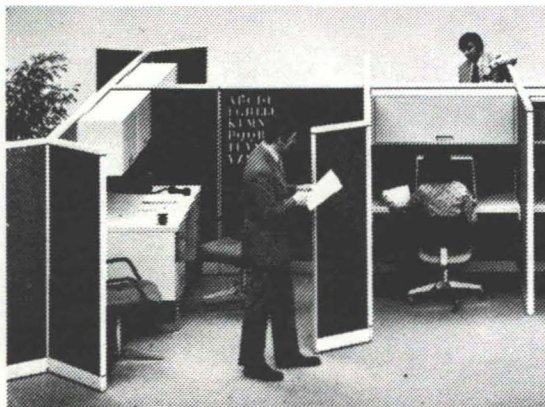
A PARTNERSHIP IS FORMED

Charles Nolan, Jr., Joel Stout, and Sam Pool have formed the architectural firm of Nolan, Stout, Pool, P.A., AIA. The new firm is successor to Charles E. Nolan, Jr., and Associates in Alamogordo, New Mexico.

Nolan is director and past president of the N. M. Society of Architects. Stout is vice president of the N. M. Southern Chapter AIA. Pool is a former secretary of the N. M. Southern Chapter AIA and past president of the Alamogordo Community Center for Theater and Arts.

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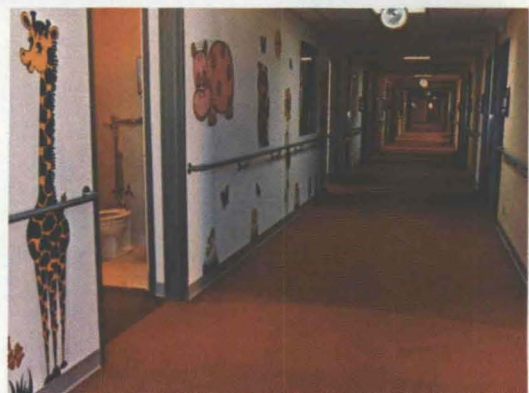


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The Rio Grande Zoological Park
Albuquerque New Mexico



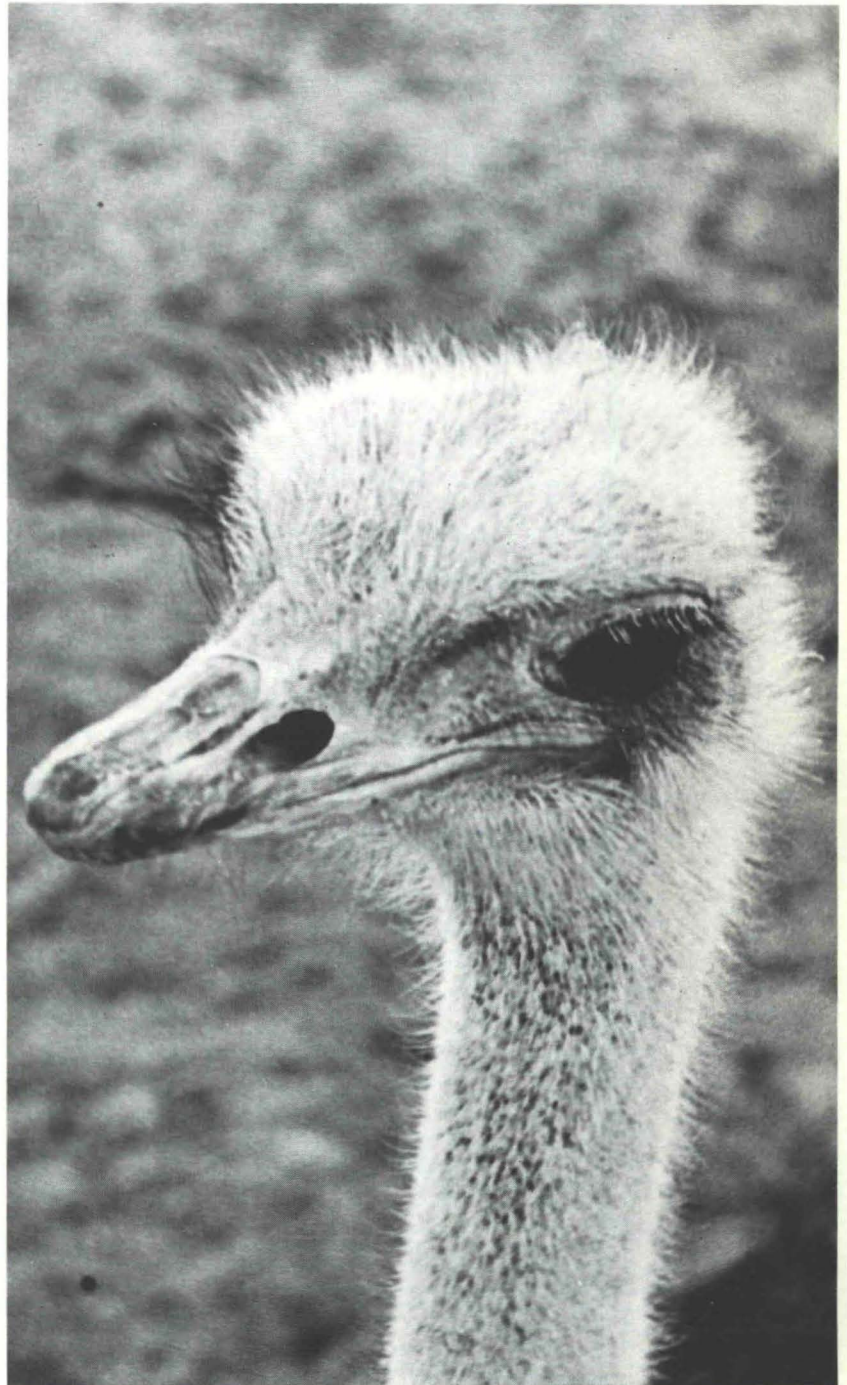
We've come a long way,
baby !!

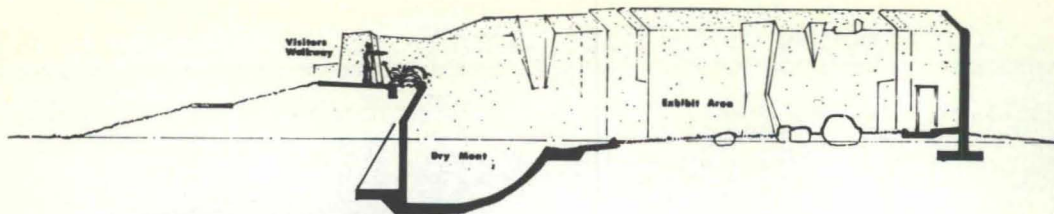
. . . Ron Hill, AIA

Long ago the wealthy emperors of China and the aristocracy of Europe were the privileged few that collected wild animals for the sole purpose of their own enjoyment. In time philosophies changed, population increased, the citizens traveled and small menageries began to develop. When the menageries first appeared, the varieties of species went little beyond that of their ancient forebearers. Since those olden days and through progress in civilization the demands on the zoological parks have caused a gradual development into public institutions with responsibilities far beyond that of private entertainment or recreation, and our Rio Grande Zoological Park is no exception.

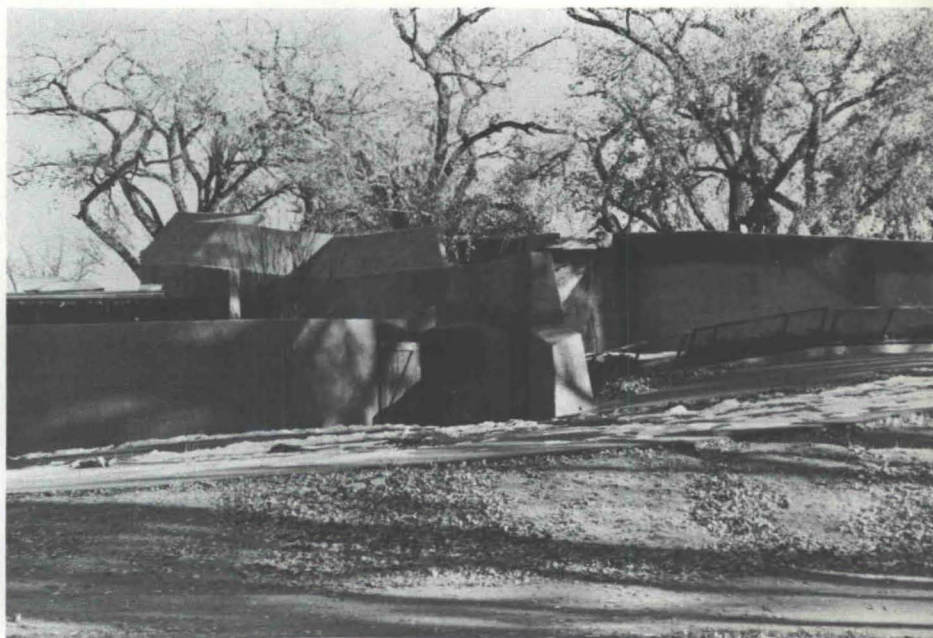
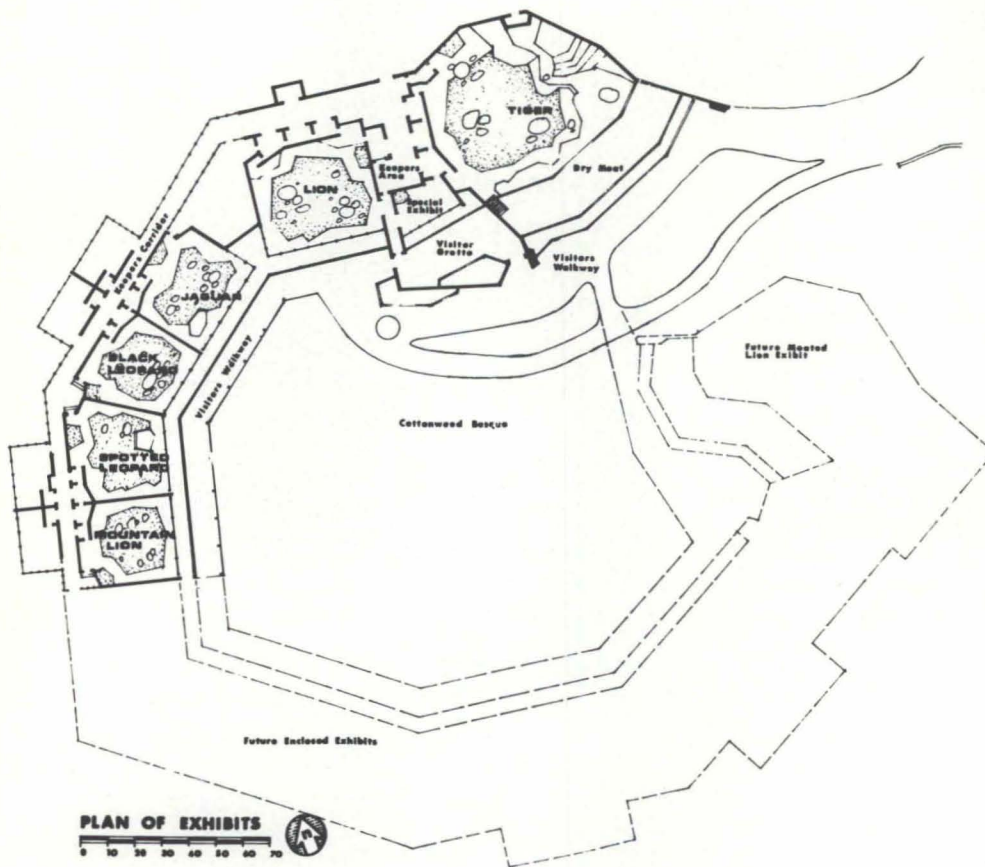
The Albuquerque Zoo was created by Clyde Tingley in the late twenties with only a handful of animals. However, since that scanty beginning the zoo has now progressed into a community-serving institution satisfying multiple goals.

Each year thousands of New Mexicans head for the zoo to participate in its original and ever popular role, recreation. They can saunter under the seventy foot high elm trees that provide a blanket of shade for the entire park while they enjoy the ever increasing number of rare and exotic animals in their own surroundings which have been designed to provide visual impact as well as facilities for the activities and life patterns of the animals themselves. As a result the





SECTION AT TIGER EXHIBIT
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The Feline Exhibit constructed in 1968. Pacheco and Graham, Architects. (See NMA, September-October, 1968.)



The Children's Barn—a detail.



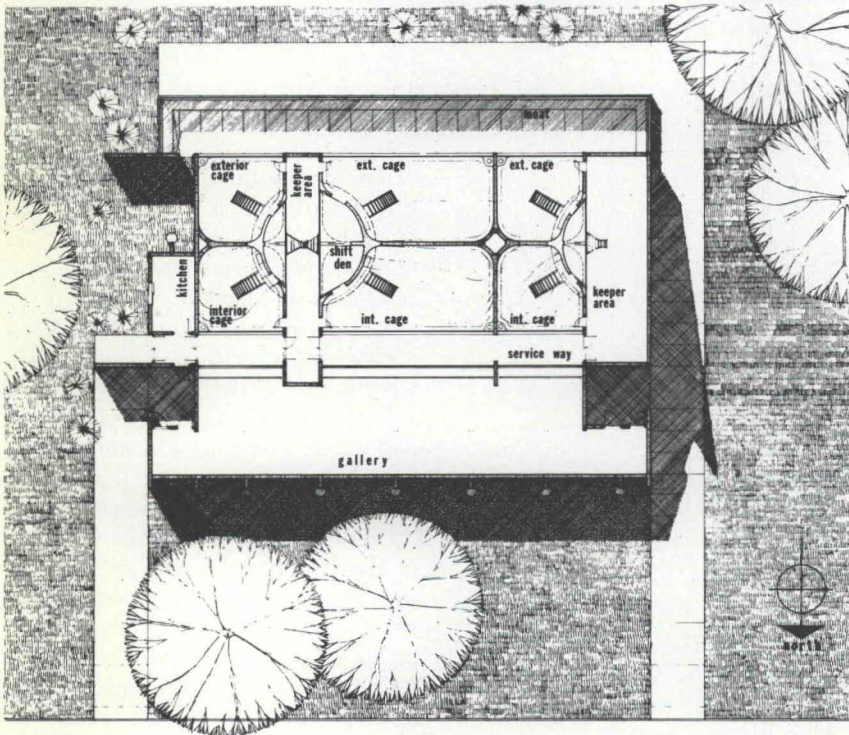
atmosphere is one far removed from one's everyday environment.

A few of these new exhibits include the bears' habitat, the feline pit and a spacious gibbon flight cage now under construction. Future plans include an aviary, completion of the feline exhibits, an island for the gorillas completely surrounded by a moat and the expansion of the hoofed animals area. Unlike the earlier habitats in zoos throughout the world these are being planned to facilitate the animals natural habits and his needs by providing surroundings that are similar to his native land.

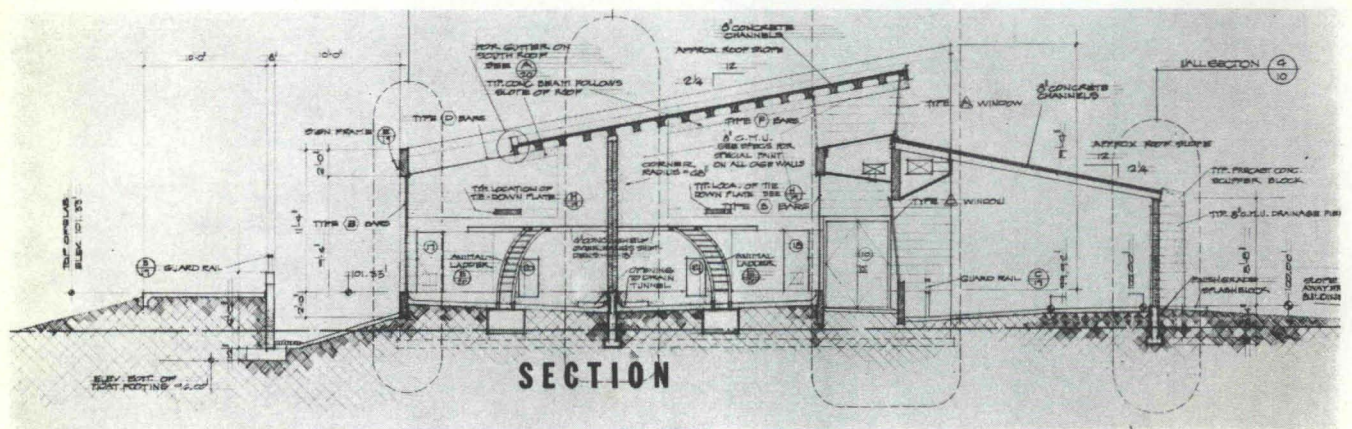
Unfortunately the days when the Fairbanks of Hollywood fame donated animals to the zoos are things of the past. Today's zoo directors are required to be businessmen capable of haggling or trading their way until they have attained the animals that are desirable for their own individual zoos. Albuquerque Zoo excels in this area being one of the few zoos in the world that is a repository for exotic animals as well as endangered species. To enhance our menagerie, the zoo board and director are hard at work acquiring a pair of musk ox indigenous to Arctic America and Greenland. These hardy oxen with a long hairy coat and curved horns will be a welcome addition to our zoo.

In the last ten to fifteen years an increasingly important function of the zoological park has been to provide an active educational facility. Combined with education coordinators and well informed zoo guides the zoo has become a living museum of natural history. It has proven to be an unforgettable experience for over 60,000 school children, all of whom are admitted free each year.

The acquisition of a proposed hospital and veterinary clinic at the Albuquerque Zoo will greatly enhance its potential as a research facility; a role that is increasing in importance each year. Through new techniques, new medicines and the study of diets, the chances of producing healthier animals and similarly more successful breeding within the zoo are greatly in-



*The Home for the Apes construct-
in 1965. Wright and Underwood,
Architects. (See NMA March-April
1966).*





The new Childrens Barn.

A project designed and constructed through donations of money, materials, time and labor. See NMA, November-December, 1973.

Support your New Mexico Zoo. For membership information write:

The New Mexico Zoological Society
c/o Rio Grande Zoo—903 10 Street SW
Albuquerque, New Mexico 7102



created. The latter is very important if the zoo is to establish itself as a prime contributor to the field of animal conservation.

Urban developments, agricultural exploitation, ever increasing population and technical progress, all are rapidly destroying many of our wilderness areas and the wildlife living therein. The city-dweller will soon find himself bereft of wildlife and untouched nature altogether.

Albuquerque's Zoological park, working in agreement with the New Mexico State Game and Fish Department, is rapidly becoming a repository for endangered species with the goal that they may be kept and perpetuated in captivity until someday they can be released in new and suitable habitats.

During the last decade, at the Albuquerque Zoo, we have witnessed impressive changes and additions, both to our animals' kingdom and their habitats and the educational activities, and the research and conservation programs. All this can be attributed to the zoo board, the director, Dr. Bruce Stringer, and the personal involvement in the various programs by the community. Without the overwhelming public interest and help concerning the tragic fire of the childrens' red barn, the new barn, which has now been completed, would have been a long time coming.

Speaking of a long time, if that describes the last visit you made to your zoo, then you're missing a lot. It's a worth while trip. It's a fun place to be.

R. H.

All photographs by Ron Hill, AIA

EHRICKE SPACE GARDEN

Why not use space to save planet Earth and make it the garden of the solar system?

An interview by A. E. Maxwell

"Ever since the first manned lunar circumnavigation there has been no letup in deploring the fact that the moon and other planets are dead, hostile and, by implication, useless. This attitude has destroyed even a moderate priority rating for the lunar program. It was not and is not recognized that we are most fortunate to have a large dead planet nearby. Because of it our living planet, and human civilization on it, can stay alive."

—Dr. Krafft A. Ehrlicke

Krafft Ehrlicke is an outraged and sometimes outrageous man. In 1956 he had the audacity to suggest that space exploration would be a lot simpler if we first developed a half airplane, half spaceship, which he called a satelloid. He missed on the name, but 18 years later American space effort has shifted from multistaged rockets to something called the space shuttle—half airplane and half spaceship.

By now, Ehrlicke ought to be used to running ahead of his time. A native of Germany, he survived the 1930's and the Nazis' antitechnological worship of Blut und Boden ("blood and earth") to become a primary figure in the development of Hitler's V-2 rocket program at Peenemünde.

In 1947 (with such colleagues as Wernher von Braun), he came to the harsh Texas desert at Fort Bliss to work on America's fledgling rocket program. In the 1950's Ehrlicke went to what was then Convair Astronautics in San Diego, California, where he became known as "the father of the Atlas-Centaur," a hybrid multistage vehicle that was a mainstay in early space exploration. But while von Braun and others became celebrities for their work with America's manned space program, Ehrlicke began thinking beyond Apollo. He envisioned an orbiting space observatory, which some referred to as "Ehrlicke's Orbiting Outhouse" but ultimately became known as "Skylab."

Dr. Ehrlicke has generated a coherent set of principles based on his belief that man must use space to solve earth's problems in a way that will allow man to grow toward his full potential. This belief, which he refers to as "the extra-terrestrial imperative," seems in direct contradiction to the presently popular prognostications of man's future,

such as those enunciated in The Club of Rome's book The Limits to Growth...

Q: Dr. Ehrlicke, you advocate the uses of space at a time when most people are concerned only with the environmental abuses on Earth. Is the distance between your concerns and the environmentalists' as great as it appears?

Ehrlicke: Our goals are the same: to make Earth the garden of the solar system. But the *Limits to Growth* people see Earth as a life raft in hostile space. Hence, they see man's world as a closed system—restricted to Earth. I don't. Humanity's action world is no more closed than it is flat.

Q: Then Dennis Meadows (director of the *Limits to Growth* project) and Jay Forrester (the pioneering MIT theoretician), et al., are wrong in their conclusions about the future?

Ehrlicke: Their frame of reference is too small. Among other things, they made a straight-line extrapolation from present trends, with the intuitive assumption that man's world is as closed as the biosphere simply because that was always so in the past. That's like an embryo in the eighth month saying, "It's getting tight in here. Lots of waste floating around. I've got to work harder to get what I need." Now when the embryo projects into the ninth month, he gets awfully unhappy. The tenth and eleventh months look even worse. So in the eighth month the embryo might conclude that he's got to stop growing. The embryo is unaware that in the ninth month there will be a major change in the frame of reference: birth.

Q: The closed environment of the womb exchanged for the open world?

Ehrlicke: Yes. Man has looked at the earth as a womb. The earth cannot much longer be an all-supplying womb for man. It must be looked at as a home, a castle, a center of growth. We can reach a new equilibrium with our environment by expanding our resource bases to include the solar system.

Q: Don't we run the distinct risk of simply expanding our area of pollution?

Ehrlicke: No, because pollution is a local concept, cosmically speaking. Pollution is lack of "local" environmental compatibility. Environmental compatibility, however, is a relative thing. What's detrimental on Earth can be perfectly compatible with the lunar or any other extraterrestrial environment. Many important industrial processes are environmentally compatible on Moon or in orbit but not on Earth—for example, nuclear-powered industrial processes or the release of large amounts of waste heat. We are not the only animal that befouls its own nest. Rather we are the only animal that, so far, has nowhere else to go. All creatures need several environments commensurate with the scope of their respective metabolic processes. When you housebreak a dog, you teach him environmental compatibility.

Q: Again, it's a question of your frame of reference.

Ehrlicke: Yes. Man is just at the beginning of his growth. And this beginning will be snuffed out if we are restricted to one planet. Just as the brain development in fish could go only so far in one environment. In order to go further the brain needed new environments that were more demanding—land and air. Some people haven't learned that yet; some even advocate returning to the womb. Impossible, of course. Certain death.

Q: Other than shrinking ourselves down to fit the environment, what can we do?

Ehrlicke: As early as 1963 I made the statement that the ultimate purpose of exploring the solar system is not just to gain scientific information. It is to broaden our resource base, to preserve Earth as a garden of the solar system. This was taken as a very far-out and unrealistic reason for interplanetary flight.

Q: Beating the Russians to the moon was the goal we heard of most. Now that we've done that, people seem to have lost interest.

Ehrlicke: And now the spin-off benefits of Apollo and others are used as an apology for a project that needed no apology. People are told that because we've been to the moon we now have a better frying pan and a better fountain pen with which we can write on butter under water. They say, "I don't want to write on butter under water." Even if they are told that they now have better monitoring in intensive-care wards of hospitals or better management of their electric company, which may cut a penny or two off their kilowatt hour, they say, "Listen buddy, you still haven't given me any reason to go to the moon. Those things could have been done on Earth."

Q: It also seems that many people, from scientists to schoolchildren, felt a bit cheated that the moon was so very dead. All those myths destroyed.

Ehrlicke: Yes. Ever since the first manned lunar circumnavigation, there has been no letup in exploring the fact that the moon and other planets are dead, hostile and, by implication, useless. This attitude has destroyed even a moderate priority rating for the lunar program. It was not and is not recognized that we are most fortunate to have a large dead planet nearby. Because of it, our living planet, and human civilization on it, can stay alive.

Q: How?

Ehrlicke: Raw materials, for one. Earth's metal resources are finite, limited. Already we must chew up more and more land for less and less rich ore. Mining produces the largest amount of inorganic waste of any industry.

We must realize that Earth is not, as some call it, a "spaceship" traveling in isolation. Earth is a passenger ship, the only passenger ship, in the convoy of our star. The rest of the planets are freighters. Right now the passengers on Earth seem in-

tent on tearing up the stateroom furniture to use

"We are fortunate to have a large dead planet nearby. Because of it, our living planet can stay alive."

it for resources when they should be taking on resources from the freighters.

The Apollo moon rocks have shown us that oxides of iron, aluminum, calcium, magnesium, titanium and silicon make up between 97 and 100 percent of the material resources of the moon. Of course, the metals are not found in convenient concentrations and would require nuclear mining techniques.

On the moon there is no underground water to get contaminated, no biosphere, nothing to be poisoned by nuclear blasts. The moon is an inorganic environment; it is exposed all the time to what we would call massive pollution in Earth's biosphere—ultraviolet radiation, X rays, solar wind and solar flares. On the moon we can detonate ten-megaton bombs, and it's just a pinprick compared to the radiation these environments are exposed to all the time.

Q: The idea of nuclear blasts as compatible with an environment—that's difficult to believe.

Ehrlicke: Only if you just think in terms of Earth's environment and say that what is bad for this environment is bad for the moon. No. What is bad for the moon is a nice pile of organic matter—cow dung. And what is bad for the Earth is a nuclear detonation. The concept of environmental compatibility has to be understood; you do things where they are most compatible with the existing environment.

An enormously large number of products can be produced on the moon for Earth's benefit. Pipe, cables, for instance. With vacuum techniques, industrial piping could be coated to last forever. No lead paint comes loose. Much better for people. Titanium for marine technology—underwater cities. I could—I have to stop thinking because I can simply go on and on. There are so many possibilities. There is material for thousands of geniuses and millions of intelligent people.

Q: Can the moon also help solve Earth's energy crisis?

Ehrlicke: Indirectly, lunar industries would help, of course. Once again, our problem is that we need more energy than we can safely generate with fossil sources within the biosphere of Earth. Ultimately, solar power will be almost exclusively utilized right here on Earth.

We do have nuclear power generators and they work fine. But there are real—and imagined—problems associated with their proliferation. The economics of power transmission dictate that power plants be located close to population concentrations and industrial load centers. But if we put them into remote areas, we need better means of power transmission over large distances. Then nuclear

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plants could be put in places where they would be relatively more compatible with the environment and, above all, away from the high-burden regions.

Q: How do you get the power from distant plants to the consumers cheaply?

Ehrlicke: By microwave relay. Convert the electric energy into microwave energy and beam it at a power relay satellite. The satellite then reflects it to a conversion station near the consumer area.

Q: That leaves only the problem of radioactive waste disposal.

Ehrlicke: You can bury hot waste on the moon. Or you can use Jupiter's gravitational field as a "slingshot" to boost waste into interstellar space.

Now, whenever I suggest putting wastes into the biggest space-time wastebasket there is—interstellar space—I immediately get a response like, "What about all those little green men going from place to place out there?" Well, if those Captain Kirks can't dodge a few cans of waste, they've got no business being there, and natural interstellar debris would have gotten them long ago. Even if I were to take the trouble of aiming the wastes at our nearest star, Alpha Centauri—which would take special nastiness for me to do, not to mention the time and machinery to keep it on its precise course—even if I were nasty enough to aim hot wastes at a possible abode of intelligence, it would still take 150,000 years to make the trip. By then the waste would be as harmless as a bag of Wheaties.

Q: Materials, energy. What about population? Can the moon and near space help?

Ehrlicke: The idea of other planets as an outlet for our excess population is, of course, totally absurd. Mars, Mercury, the moon—even if we could

"The naysayers are the polluters of our future. They deny options to future generations."

use them in that way, they would barely make an area the size of Earth.

Now, a few countries have made the transition from a scientific-agricultural society with high birth, low death rates to the industrial-consumer society with lower birth rates. The industrial-consumer society does not reward large families economically as does the scientific-agricultural society. You can't afford lots of kids and the good life, too. Thus, if you want lower birth rates, then you must have more consumption. But to do that and still live on Earth you must move as much production as possible away from the area of consumption. Put our machine-animals, with their waste-producing propensities, outside the biosphere. Short of catastrophe, or a garrison state, it's our only chance. We must enlarge our world.

Q: The extraterrestrial imperative.

Ehrlicke: Exactly.

Q: Then you feel that the alternatives outlined in *The Limits to Growth* are less than reasonable?

Ehrlicke: The notion that man will, in the centuries and millennia ahead, submit to a slowly declining living standard in "harmony" with a slowly degrading terrestrial environment is, of course, not an impossible one—but it seems to me rather absurd.

Q: History indicates that a war over the division of the shrinking pie is more likely than a sudden decision to share and share alike.

Ehrlicke: You cannot give if there is nothing to give. It would be insane for the "haves"—the community of industrial nations—to rejoin the "have-nots" instead of employing their own technological resources to assure growth and an unlimited future for all mankind.

Q: This unlimited future will be expensive to build.

Ehrlicke: Of course. But it will be as or more expensive to pursue planned regression, and you will get a hell of a lot less for your time, money and trouble than if you had developed the open world. How can anybody in his right mind actually say to a mankind that has millions of years ahead, that has cosmic powers at its disposal, whose knowledge grows by leaps and bounds, that begins to understand what makes a quasar and a neutron star—how can you say to this mankind that for now and forever it is in solitary confinement on a shrinking world, *and that's all there is, buddy!*

The cheapest thing is to say that we've got to establish new value systems. What value systems? Go down? Get smaller? Get poorer? Get hungrier? Get more wretched? The cost of a frustrated mankind that tries to cripple its mind the way Chinese women used to cripple their feet—the regimentation, the monotony—is totally incompatible with the sweeping statement, "Well, let them have new values." It's about as responsible and reasonable as Marie Antoinette's "Let them eat cake."

And you do this in the face of millions of ideals that you can give to the generations of today and tomorrow: going out and exploring the solar system and planning and building and producing so that people down here can live in dignity and freedom on an Earth that is again clean, an Earth that feeds everybody, in a mankind that is shielded from wars.

The naysayers are the polluters of our future. They deny vital options to future generations. Everybody is running around saying we can't grow anymore. That will be a self-fulfilling prophecy unless someone stands up and says, "Oh yes we can!"

Those who think we have reached the end of our tether live in an even more unreal world than those who in the last century advocated closing the patent offices because their mousy minds could not comprehend that there might be anything left to invent.

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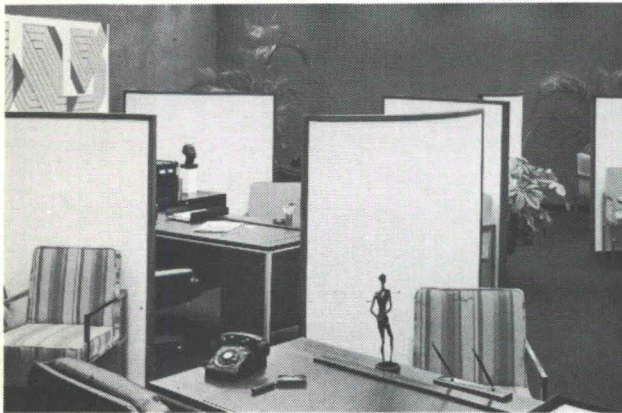
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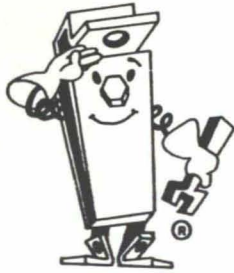
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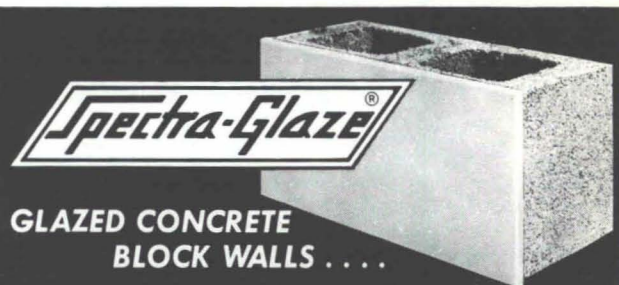


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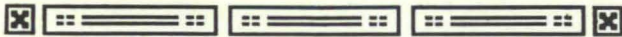
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In the March/April **nma** will be the complete roster of the members of the three New Mexico Chapters of the American Institute of Architects.

Also, of course, the roster of the members of the New Mexico Chapter, American Society of Interior Designers.

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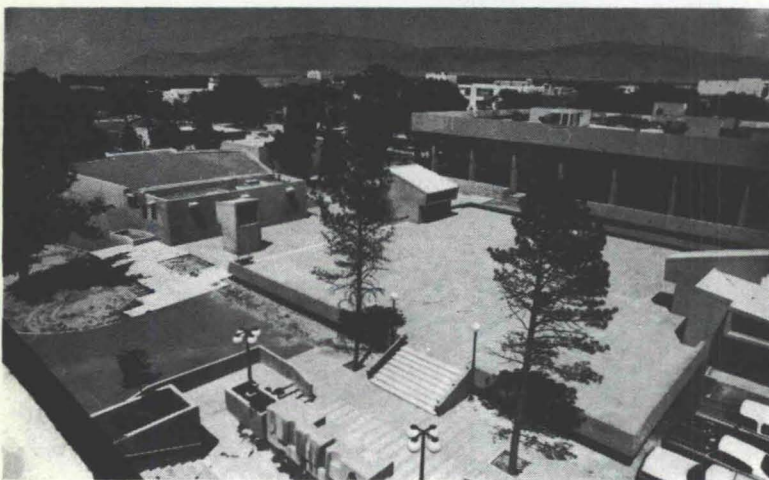
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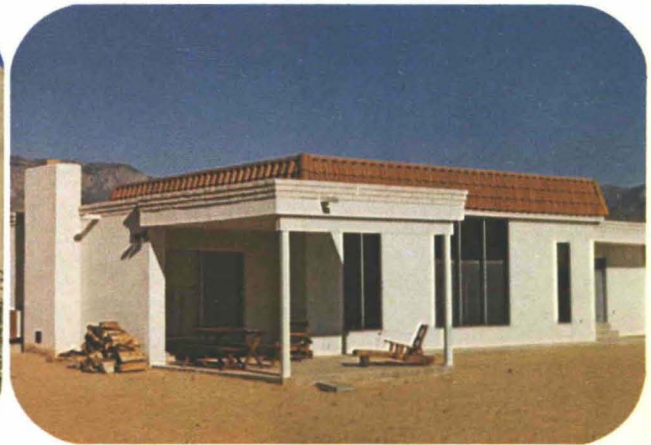
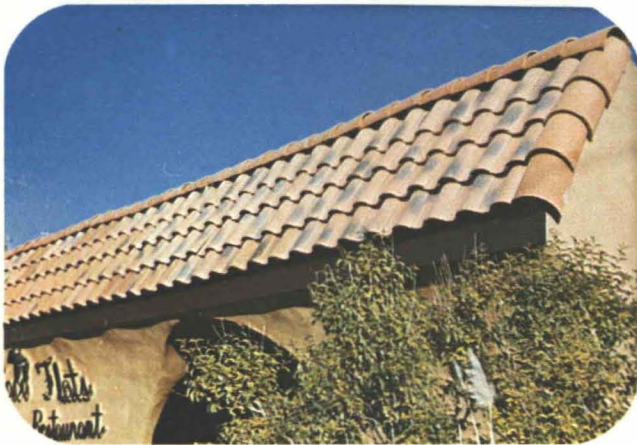
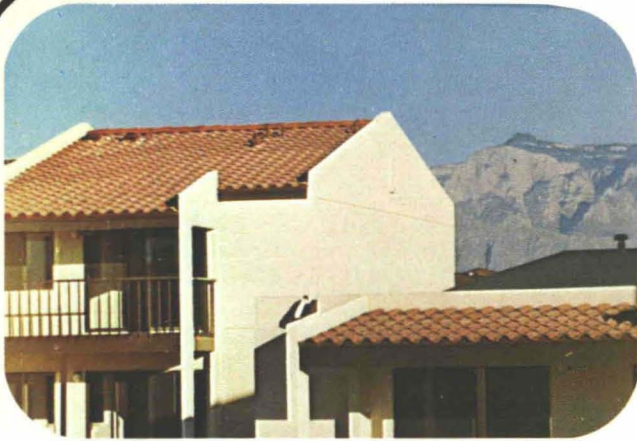


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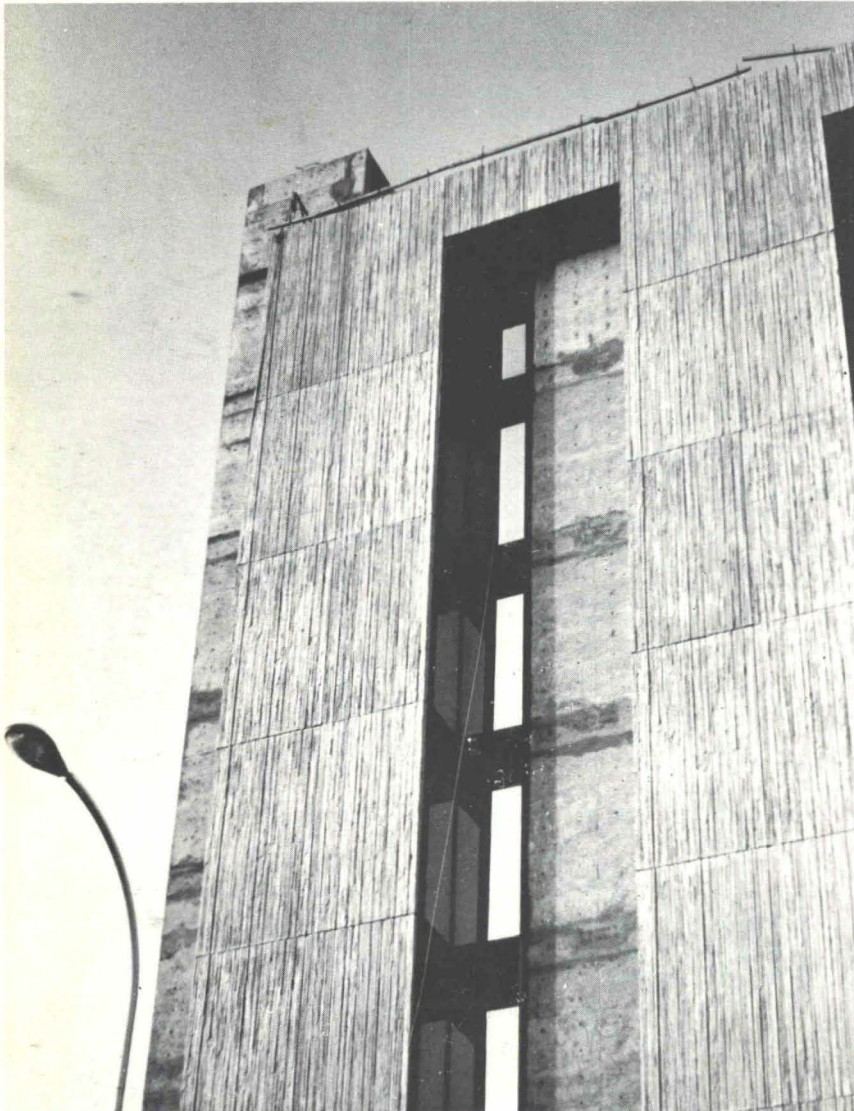
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