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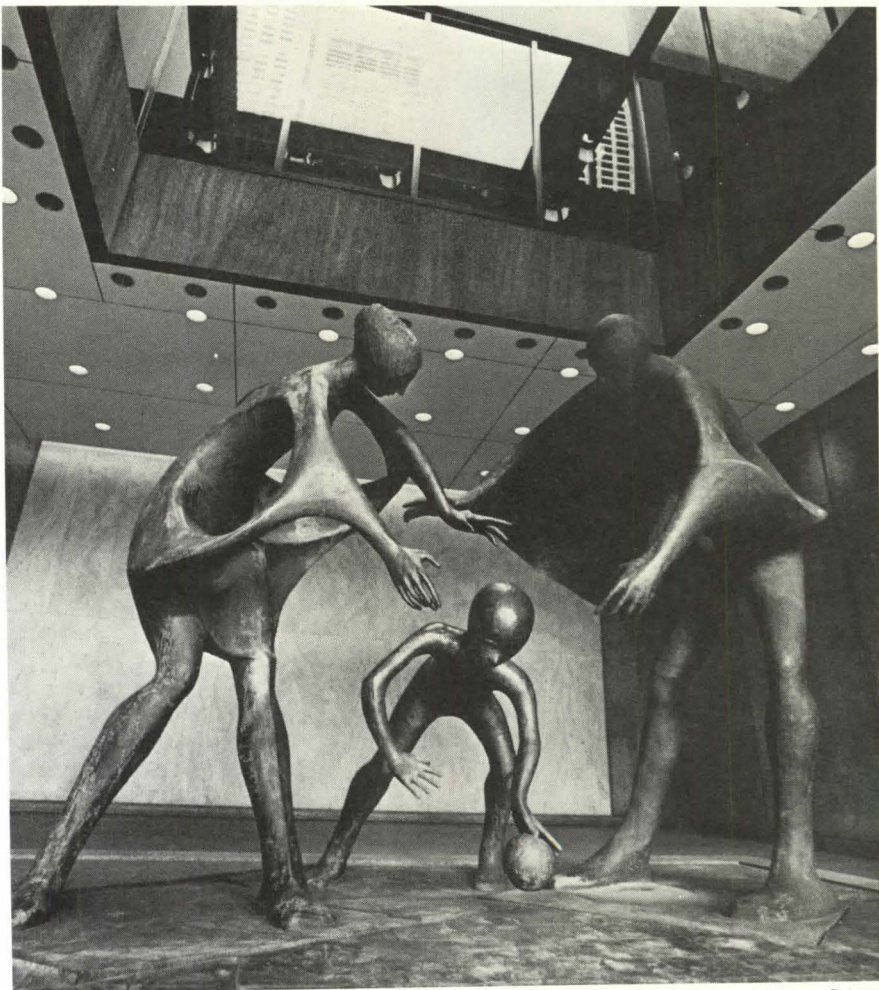
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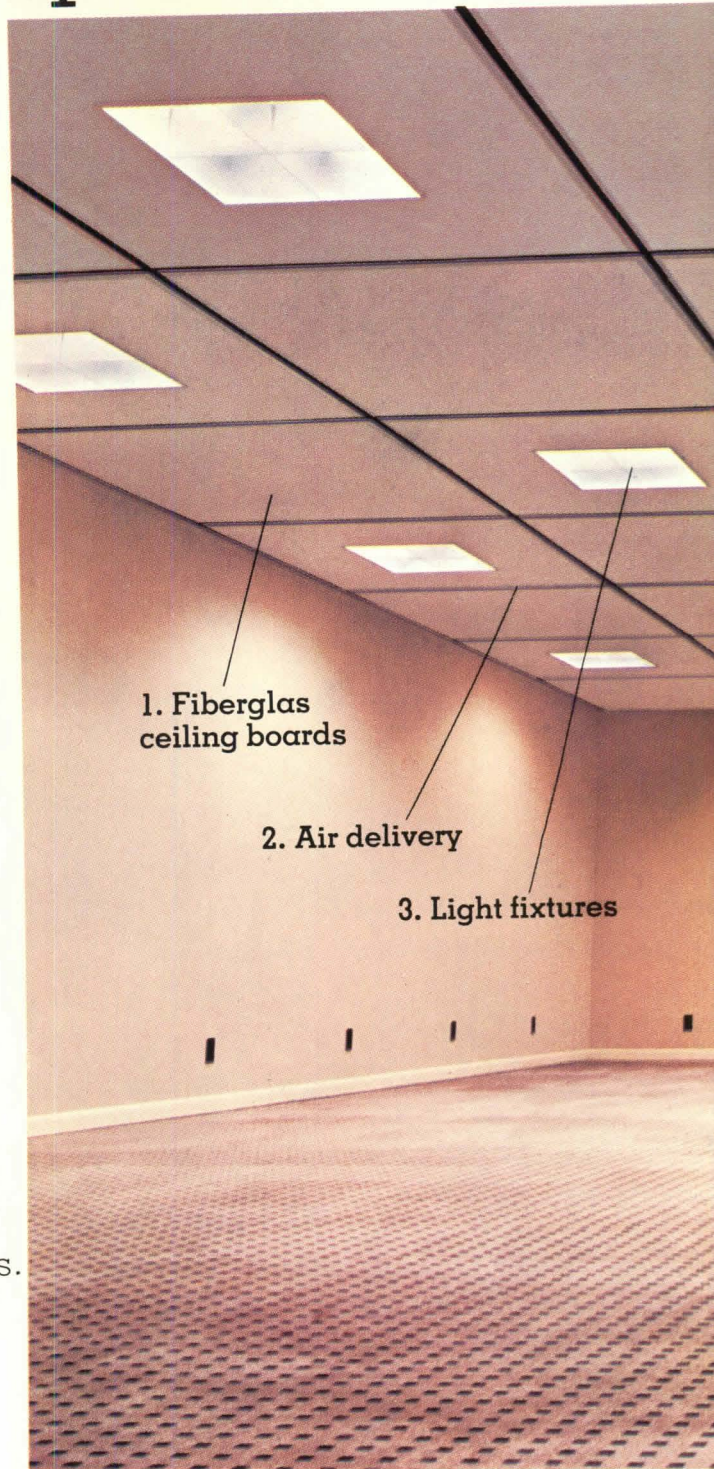
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**Cover:** Photograph by Norman F. Carver Jr., AIA, of the Italian hilltown of Sorano (see page 28).

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## EVENTS

**Jan. 7-8:** Seminar on Effective Construction Management, Cross Keys Inn, Baltimore. Contact: Center for Management Development, College of Business and Management, University of Maryland, College Park, Md. 20742.

**Jan. 7-10:** Conference and Workshop on Computer Programs for Evaluating Buildings and Systems Performance, University of Wisconsin, Madison.

**Jan. 9-10:** Construction Claims Course for Owners, Omni Hotel, Miami. Contact: A. G. Cragg, Conference & Exposition Management Co., Inc., P. O. Box 844, Greenwich, Conn. 06830.

**Jan. 10-11:** Clean Air Conference, Phoenix. Contact: U.S. Conference of Mayors, 1620 Eye St. N.W., Washington, D.C. 20006.

**Jan. 14-Feb. 1:** Building Construction Institute, University of Wisconsin, Madison.

**Jan. 18-19:** Marketing of Professional Services Seminar, Lake Tahoe, Calif. (Repeat seminars: Feb. 8-9, Sacramento, Calif.; Mar. 7-8, Portland, Ore.; Mar. 28-29, San Francisco; Apr. 18-19, Seattle; Apr. 25-26, San Diego.) Contact: University of Southern California, College of Continuing Education, CES 200, Los Angeles, Calif. 90007.

**Jan. 18-21:** National Association of Home Builders annual convention and exposition, Las Vegas. Contact: NAHB, 15th and M Sts. N.W., Washington, D.C. 20005.

**Jan. 21-23:** Conference on Arson: America's Malignant Crime, New Orleans. Contact: U.S. Fire Administration, Federal Emergency Management Agency, Washington, D.C. 20472.

**Jan. 31:** Entries deadline, annual awards program for small and large shopping centers completed in 1979. Contact: International Council of Shopping Centers, 665 Fifth Ave., New York, N.Y. 10022.

**Feb. 6-9:** Conference on Regional Architecture, San Francisco. Contact: Wayne Attoe, San Francisco Center for Architecture and Urban Studies, 1045 Sansome St., Abbott Building, San Francisco, Calif. 94111.

**Feb. 9-10:** Seminar on earthquakes, University of California at Davis. Contact: University Extension, University of California, Davis, Calif. 95616.

**Feb. 15:** Call for papers, polymers in concrete, for a symposium on Sept. 21-26, San Juan, Puerto Rico, in conjunction with the fall convention of the American Concrete Institute. Contact: Lawrence E. Kukacka, Process Sciences Division, Brookhaven National Laboratory, Upton, N.Y. 11973.

**Feb. 15-18:** 1980 Exhibition of School Architecture, annual convention, American

Association of School Administrators, Anaheim, Calif. Contact: AASA, 1801 N. Moore St., Arlington, Va. 22209.

**Mar. 27-28:** A/Es Federal Marketplace for the '80s, Sheraton Harbor Island Hotel, San Diego, sponsored by the Committee on Federal Procurement of Architectural/Engineering Services. Contact: Government Affairs Department, AIA Headquarters.

**June 1-4:** AIA annual convention, Cincinnati.

## LETTERS

**'The Realm of Fools?'** "For styles of architecture, let fools contest whatever is best designed is best."

Since architecture is concerned with the dialectic between man and nature and not with dialogue between critics, I hesitate to enter the realm of fools.

Not heeding my own advice, I foolishly question the authority of Richard Guy Wilson, chairman of the division of architectural history at the University of Virginia, on his evaluation, not of Jackie Cooper's book *Mackintosh Architecture* (Aug., p. 76), but on Wilson's perspective on Mackintosh's work and life.

We must question the inferences that can be drawn from the statements that "Mackintosh's celebrity is far in excess of his rather short career and small output," and that "only 14 complete buildings can be credited to him, of which perhaps only three or four are truly memorable." The inference is surely that Mackintosh's contribution to architecture is inadequate. Perhaps the list of architects who offer us three or four "truly memorable" buildings is a short one. The list of truly memorable criticism is much shorter.

Bradley's "How many children had Lady Macbeth?" offers as much insight into the meaning and significance of Shakespeare as the number of buildings designed by an architect indicates the value of his/her contribution to architecture.

The statement that "Mackintosh's importance is not with complete buildings but with his transformations of interiors and his design of chairs . . ." does not match the facts. Opinion is not, and will not become, a basis for truth.

"The large project was frequently beyond his ability. The Glasgow School of Art is at least three buildings." Among that which architecture seeks is "aequa libra," i.e., the poised balance we now know as equilibrium. The Greek mind was perfectly capable of comprehending the harmony that can be derived from the logical concatenations of asymmetric elements.

"Given the remoteness of Glasgow," the Scottish mind could cope with not only the tradition of the Italian Renaissance, but also its architectural roots in Greece and Rome. The inferred accessibility to Charlottesville must then be correlated with the notion that "harmony and discord" can be derived only from their versions of balance—perhaps exclusively related to bilateral symmetry.

With the intensity of other tasks in our lives, why do I send this letter? My conversion from engineering to architecture was the result of the "presence of place" in the Glasgow School of Art. For that "presence" or "suchness" I have to thank the architect Charles Rennie Mackintosh.

Peter McCleary  
Chairman

Department of Architecture  
Graduate School of Fine Arts  
University of Pennsylvania  
Philadelphia

**And in Response:** I am delighted to know that Professor McCleary was so overcome by Charles Rennie Mackintosh's Glasgow School of Art that he decided to become an architect. If all architects were so influenced, the world would be a better place.

However, the function of history and of criticism is not simply to deal with personal reactions, but to place the building and architect within a larger context. Professor McCleary believes in absolutes. History indicates otherwise. The observations I made have little to do with living and teaching in Charlottesville (heretical though they may be). They are the result of considerable time spent studying architecture of the 19th and 20th centuries and the work of Mackintosh.

As my review indicates, I have a deep respect for Mackintosh's talents. At the same time, I have serious questions concerning the role he generally plays as a major predecessor of "modern" architecture and also the recognition of his talents. Professor McCleary obviously fancies himself a defender of the "faith" against the "infidels." Let there be no question whatsoever, fawning devotion is the only response.

Mackintosh's genius can withstand critical scrutiny; whether he can withstand complete and all-embracing devotion is questionable.

Richard Guy Wilson  
Chairman, Division of  
Architectural History  
University of Virginia  
Charlottesville

**Correction:** The Hood milk bottle depicted on page 63 in the October issue was built originally in Taunton, Mass., not Taunton, N.J.



Architect: Burman, Beuchard

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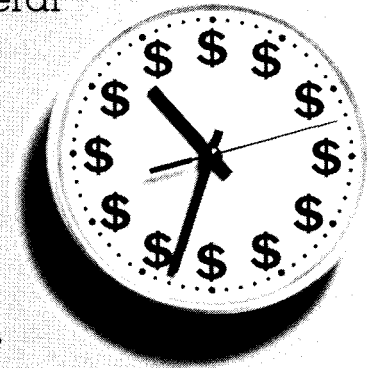
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## Energy

# Persistent Inefficiencies Blamed On 'Confusing' Political Signals

Although there have been "impressive" improvements in energy efficiency in the nation's industrial sector in recent years, the full potential has not been realized by any means. Among the barriers to the achievement of this potential are "confusing signals from the political and economic environment," such as the surfacing and then disappearing of energy shortages in certain areas and policies that call for fuel switching at the cost of efficiency. In the residential and commercial sectors, one of the barriers to energy efficiency is lack of capital to invest in the retrofit of buildings in a time of economic uncertainty. A barrier in the transportation sector is land use planning strategies that encourage dependence upon the automobile and long commutes to work.

These conclusions are given by Denis W. Thompson, director of research and public education, Alliance to Save Energy (ASE), in summarizing the working papers of the Dumbarton Oaks Symposium on the Dynamics of Energy Efficiency held recently in Washington, D.C., under the auspices of AES. A nonpartisan organization whose goal is to bring about a national commitment to energy conservation and energy efficiency, AES is chaired by

Sen. Charles H. Percy (R.-Ill.). The invitational symposium was attended by 150 of the nation's leaders from industry, education and the public utilities. Among them were Ehrman B. Mitchell Jr., FAIA, president of the Institute, and Richard Stein, FAIA, of New York City, author of *Architecture and Energy*. Stein served as a technical adviser of a workshop.

The Dumbarton papers indicate that other barriers to energy efficiency in the industrial sector include a lack of commitment and of knowledge on energy costs and use on the part of top corporate executives, institutional obstructions that impede the development of industrial cogeneration of electricity and create "investment uncertainty" and exhausted capital requirements that force a choice between investment in energy-efficient methods and increased plant capacity.

Among the barriers to energy efficiency in the residential and commercial sectors, according to Thompson's analysis of the conference papers, are a lack of a conservation delivery system that has quality control standards and personnel capable of responding on a large scale to consumer requests for building retrofitting and ignorance about energy efficiency on the part of millions of residential decision makers who must begin to save energy.

The transportation sector, which is the most "troublesome" to those who envision untapped methods for conservation, is directly dependent upon oil. Highway traffic consumes 78 percent of all energy used in this country to move people and goods. Among the barriers to energy efficiency, say the Dumbarton papers, is reluctance on the government's part "to decontrol gasoline prices and raise fuel taxes high enough to signal to consumers the danger of our enormous national dependence on imported oil." There are also the hit and miss programs of mass transit, carpooling and the like and the failure of new trucking technologies and fuel-effi-

cient practices to reach local haul trucks—the biggest user of truck fuel.

The Dumbarton papers suggest ways in which the barriers can be overcome. In the industrial sector, for example, there is a wide range of options—"from mandatory efficiency targets, as for electric motors and pumps, to increased incentives for conservation investment, such as direct grants and loans (especially for smaller firms), to expanded tax credits: up to 40 percent for energy efficiency investments."

The value of information is stressed in the papers for the residential and commercial sectors. "In particular, government at all levels could do much more to provide consistent, clear and reliable information on how residents and commercial building owners and operators could save money by saving energy." Energy audits would be helpful, as well as expanded energy extension services, similar to the agricultural extension services.

A massive training program for energy auditors and installers is suggested by the papers, as well as increased retrofit services offered by utility companies and a "beefing up" of the retrofit capabilities of the transition-bound building improvements industry." Other measures mentioned are an increased tax credit for energy conservation and outright grants to lower income families. Strong regulations, the papers say, "could move the construction industry to build new structures that are models of energy efficiency."

The nation does not have to be at the mercy of past habits of energy consumption, Thompson says. "Conservation is an opportunity to hold the line on energy growth while permitting healthy growth in the economy as a whole." The papers call for the merits and drawbacks of each suggested option for energy efficiency to be "fully aired" on Capitol Hill.

Among the featured speakers at the symposium was President Carter, who commended AIA for its "good works" in energy conservation. He said he was convinced that the "pre-eminent" way to reduce oil imports is through conservation. He said there are "literally hundreds of opportunities in business, in government, in our private lives that we have not yet adequately explored to give us sharp reductions in energy consumption with no decrease at all in the quality of our lives."

### Energy

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## What Other Nations Are Doing To Reduce Energy Consumption

Spain, like many nations, has passed legislation establishing compulsory insulation standards for new houses. Other energy conservation measures include the regulation of display lighting in shop windows and on streets and highways. Japan, where two-thirds of the energy consumed must be imported, passed a heat control act for large factories in 1951. Some 25,000 heat control officers monitor industrial energy consumption. Also, the automobile industry in Japan voluntarily labels the fuel efficiency of new cars, and thousands of Japanese homes have solar water heaters.

Spain and Japan, along with the U.S. and 17 other nations, are members of the International Energy Agency (IEA) whose goal is to limit total oil imports. Although the member nations have different approaches to energy conservation, based upon climate, resources and dependence upon imported energy sources, they have some common policies, such as tax incentives to encourage energy thrift.

Some examples of the ways in which IEA members encourage energy conservation are:

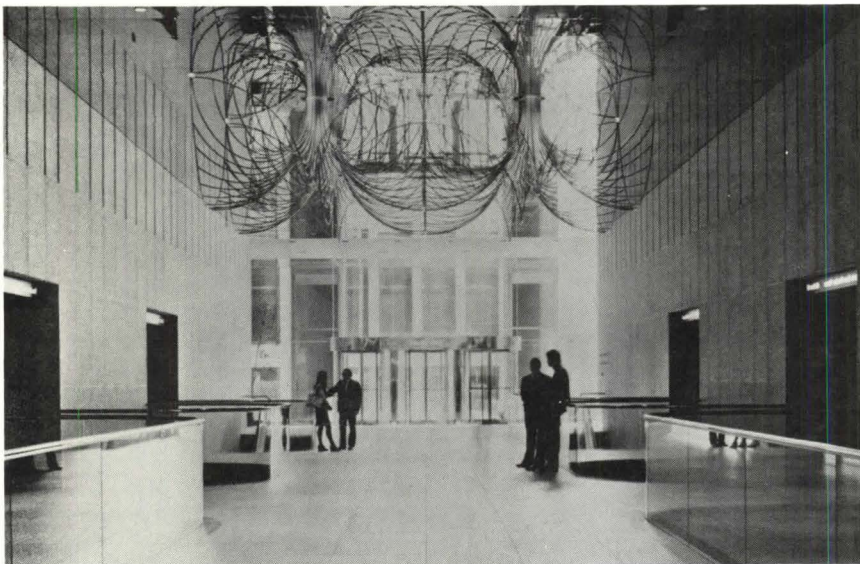
- Belgium, which imports a large majority of the energy it consumes, limits the temperatures in public buildings to 68 degrees Fahrenheit in offices and 64 degrees in schools.
- Canada, with substantial energy re-

sources, recently increased its excise tax on heavy passenger cars. The Canadian government also has removed federal sales taxes on insulating materials.

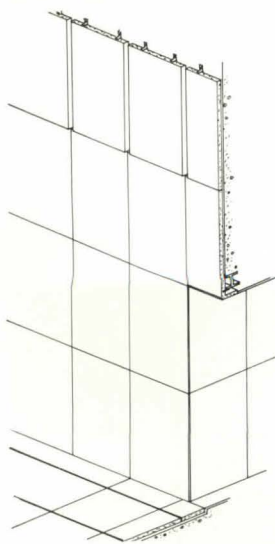
- The Netherlands encourages district heating, in which central urban plants supply hot water and steam heat to surrounding houses and businesses.
- Sweden, using refuse as a natural resource, has 14 refuse incineration plants which burn trash and recover its heat. This heat is used to generate electricity for residential and commercial consumption.
- Ireland makes grants to industries to partially cover the cost of employing energy auditors.
- West Germany relies upon tax incentives for the installation of energy-efficient equipment in residences and factories.
- Norway, which has rich oil fields in the North Sea, nonetheless encourages energy conservation by allowing industries to set aside tax-free funds for investment in equipment to capture and use waste heat.
- The United Kingdom makes grants to the Royal Institute of British Architects to retrain architects in mid-career in the design of energy-efficient buildings.
- New Zealand has mandatory building energy codes and makes interest-free loans for the insulation of existing homes and for the installation of solar water heaters.

# Granite.

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## Consulting Engineers Council Seeks Prescriptive Standards

The board of directors of the American Consulting Engineers Council has unanimously adopted a comprehensive energy policy. One of the policy's 10 component parts calls for the motivation of energy conservation in "new building construction with mandated consensus building design standards." It says that for the near term "proven standards" which prescribe energy limitations for building components should be permitted as an alternative to the "untested" building energy performance standards (BEPs) of the Department of Energy.

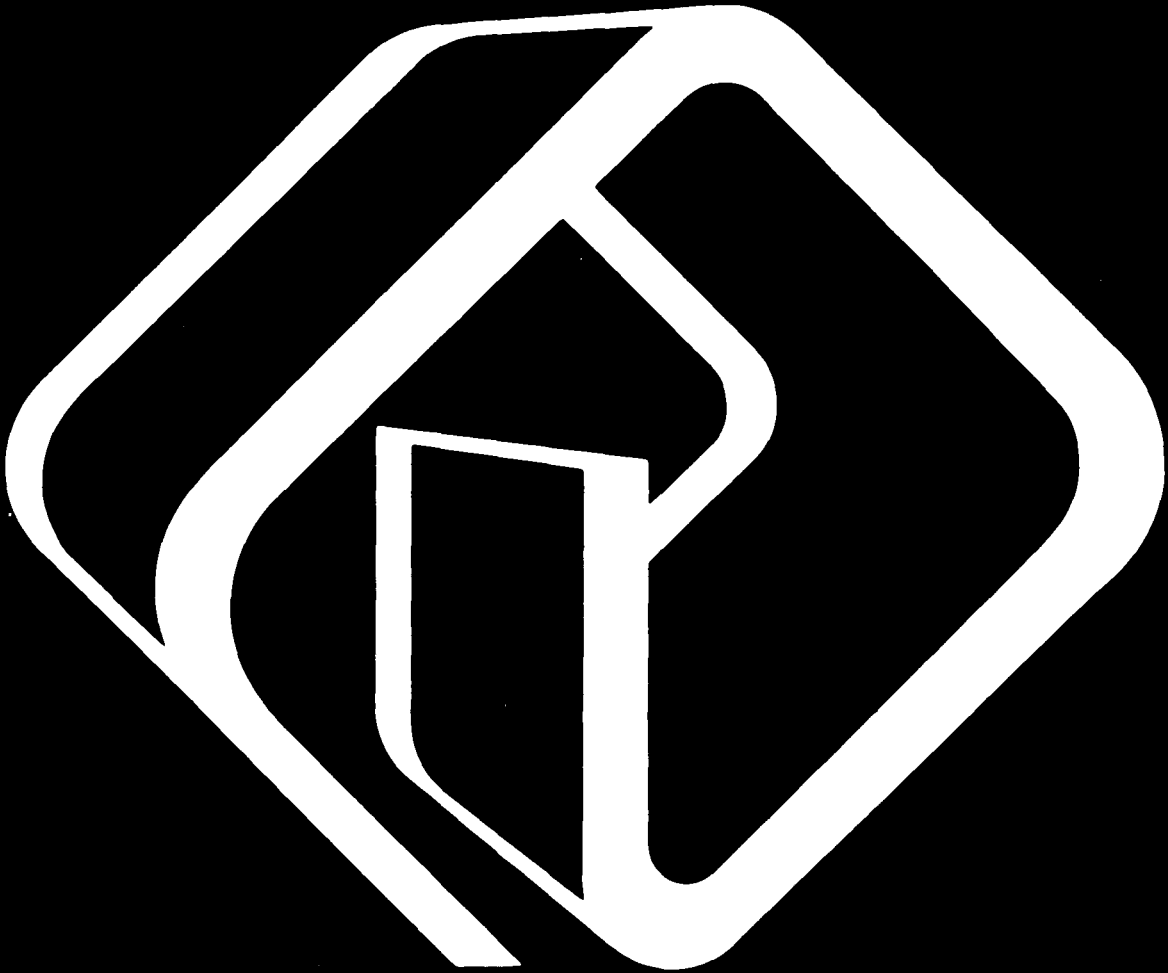
AIA's energy policy, in contrast, has long favored performance standards over prescriptive ones. But, says AIA's energy committee, standards "do not necessarily constitute the only or ultimate process by which the conservation of energy use in buildings can be achieved." Far more effective ways than the regulatory process to reduce energy consumption are the "development of programs resulting in the creation of economic incentives and increased public awareness."

The AIA committee points out that there are fundamental differences between performance and prescriptive standards

*continued on page 16*



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## Energy from page 12

which should be recognized and that the two approaches should not be considered "equivalent." AIA has supported DOE's BEPs and will continue to work with DOE and others "to develop the necessary tools for implementation."

ACEC's energy policy also calls for the nation to "proceed with the construction of nuclear power plants designed with safety in mind, and concurrent construction of nuclear waste isolation facilities." The policy asks for acceleration of research and development of breeder reactor and fusion technologies.

At the 1979 AIA convention, there was heated debate on nuclear energy, with the California Council/AIA asking for a policy on the subject (see July, p. 11). At a meeting prior to the convention, AIA's board argued that nuclear energy should be considered in the broader context of renewable energy sources, contending that the other sources of energy supply that can meet "interim needs and help close the widening gap are themselves depletable, capital wasteful and present environmental problems." The resolution that passed calls for AIA to urge a national reappraisal "to bring about intensified actions to eliminate energy waste" and that funding be "shifted" in order to "ac-

celerate the development of renewable sources of energy. . . ."

AIA's energy committee emphasizes that Institute members "should promote conservation through passive energy designs that are not only practical in terms of cost effectiveness, but also that hold promise of long-term energy and economic benefit, whether or not governmental financial assistance is available."

Another item in the ACEC energy policy calls for the "decontrol" of "all energy pricing in a manner which will encourage investment of private capital for domestic exploration and development of oil and gas, and conversion of domestic oil shale or coal resources to gaseous or liquid fuels." ACEC concedes that decontrol of prices will have a "short-range inflationary impact," but that the effect will be to stimulate a free economy.

The policy also calls for the "removal of unnecessary regulatory and governmental constraints," the tempering of "unproven environmental constraints which currently discourage use of our nation's abundance of coal," expansion of federal incentives for research and development and for demonstration projects of conservation technologies "until proven commercially viable in the private sector," the creation of adequate traffic control

and mass transit systems, review of tax laws and utility rates to expedite capital formation for the development of alternative energy sources and increased public education.

ACEC's directors also adopted a policy on professional development which says that the public is best served through a voluntary program of professional development that is tailored to the individual's needs and coordinated on a state by state basis through engineering societies. The policy says that professional competence of consulting engineers can be achieved through education, participation in professional activities and practice with experienced engineers.

The directors voted to join the American Association of Engineering Societies which would consolidate ACEC, the Engineers Joint Council and the Association for Cooperation in Engineering. Such a single organization, says William Hermann, vice president for ACEC liaison, "will provide a simplified, improved and more effective means by which engineers can communicate with each other. The organization will provide a system for the engineering profession as a whole to conduct its relations on technical matters with the public and with government."

*News continued on page 20*

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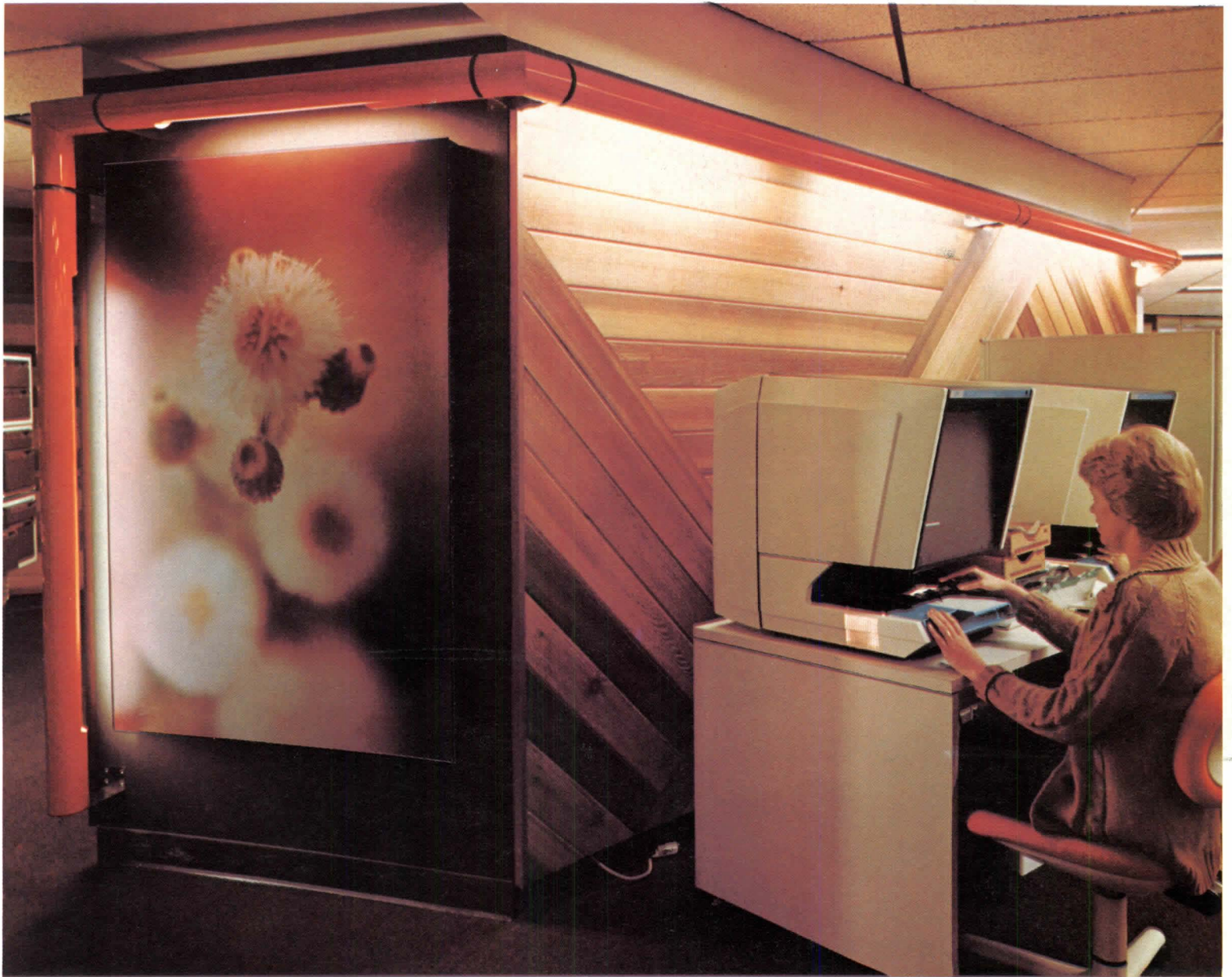


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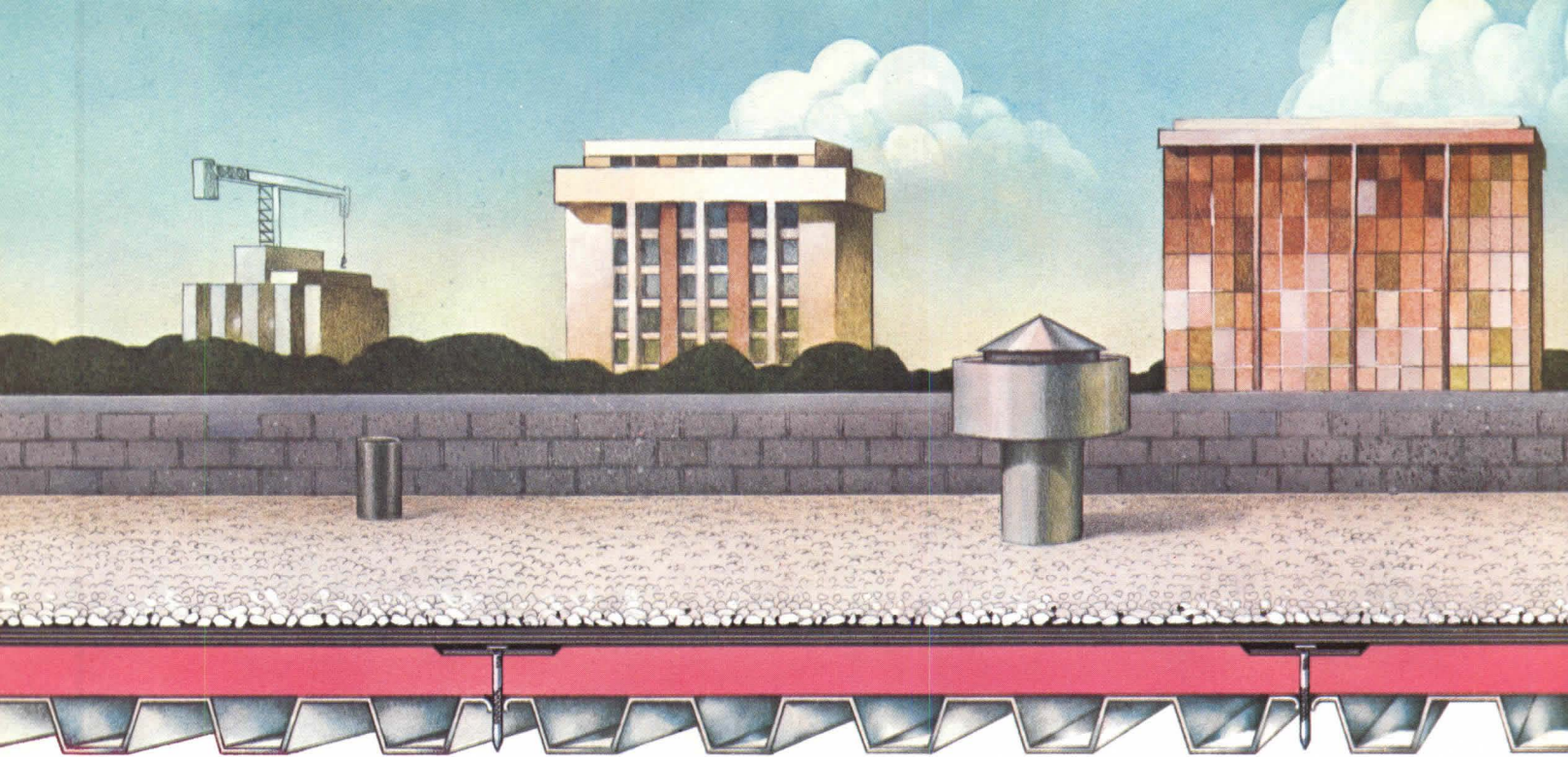
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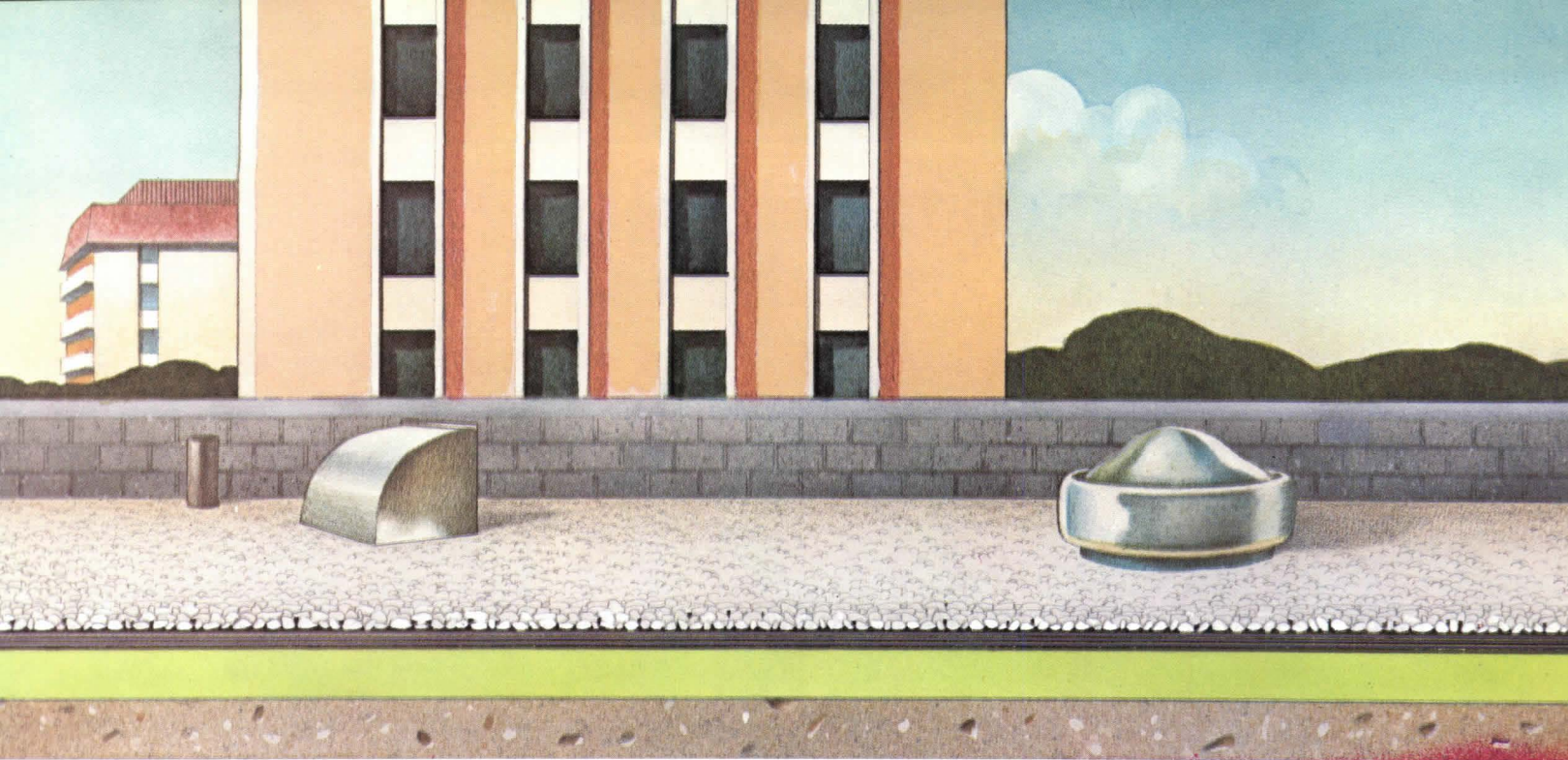




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# Architectural Registration Debate Continues in a Cooperative Vein

The national dialogue on architectural registration continued recently at a joint session of the AIA registration law advisory task force and the California Council/AIA. The two groups pledged mutual support on their respective efforts to study registration issues.

Consultants to the CC/AIA steering committee on registration issues have identified six major concerns for study after taking a survey of AIA members, Board of Architectural Examiners (BAE) members, educators, and legislators: Where does the profession stand, where is it going and where should it go? What problems exist with the BAE? What are alternatives to state licensing? Is there a need for a new practice act? Should the BAE change the licensing examination? Should competency be enforced?

In California last year, Governor Jerry Brown recommended repealing the architectural registration law and abolishing the BAE. However, later in the year the governor approved a budget of \$558,000, an increase over last year's BAE budget. Both BAE and CC/AIA are actively studying the state's architectural examination, which may lead to establishing a new examination.

If California develops a new examination, it could become an example for other states. For instance, Wisconsin has decided to wait for the California review before developing its own new examination. A significant portion of the Wisconsin architectural registration examination was dropped several years ago in response

to criticism concerning sections of it. A consulting firm concluded this spring that the match between the National Council of Architectural Registration Boards' examination content and a task list developed by Wisconsin architects was generally less than 50 percent on an item-by-item basis.

Because other states are watching developments in California, the AIA task force needs to keep in close touch with registration activities there and in other states, says Elizabeth Chalmers, director of AIA state component affairs division. The AIA task force also hopes to generate a national dialogue on registration through state and local chapter meetings, grassroots meetings and the AIA 1980 convention.

The task force members include William C. Muchow, FAIA (chairman); Dan Sheridan, AIA, executive vice president, CC/AIA; Robert C. Brosher, FAIA; David Lawson, AIA; Harold Fleming, Hon. AIA, and John Wilson-Jeronimo, an AIA associate member. It plans to examine the following questions:

- What is quality environment? Who is responsible for the built environment? Who should be legally entitled to shape the built environment?
- What is architecture, including the profession's aspirations and the public's expectations? What is the state's role? What do architects think should be their exclusive domain? What tasks are performed by architects that can be measured and tested for establishing competence?

- How is competency defined, tested, maintained and enforced?
- How are the client, the public, the architect, the user protected? What should be required of architects? What should architects expect of themselves?
- Should registration laws and boards be phased out and regulation be by local ordinances, building codes, consumer protection laws, insurance companies? Should professional certification be by the private sector?

The task force is in the process of preparing several products to assist AIA components in revising architectural registration and to prepare members for participation in the national dialogue, including a survey and analysis of existing architectural registration laws; a preliminary report on architectural registration, "Issues and Options," and guidelines and strategies for obtaining legislative policies.

Meanwhile, NCARB has narrowed the intent of the study of its examination (see Aug., p. 22). It originally set out to define the knowledge, skills and abilities necessary for minimum competence for the practice of architecture and then planned to apply the findings to an evaluation of its programs. It now intends to only study examination questions and exclude analysis of internship, education and experience. Examination specifications will be developed and then compared with the existing NCARB examination.

## Associate Membership in AIA Jumps Tenfold in Two Years

At the end of December 1976, there were 264 associate members of AIA; by December 1977, the number had increased slightly to 390; but by the end of 1978, the number had increased dramatically to 3,189, and on Oct. 24 of this year, the number stood at 4,265. There appear to be three primary reasons for this significant increase. First, AIA bylaws were changed at the 1977 convention in San Diego, extending the eligibility requirements to graduates of architectural schools; second, in recognition of the necessity of giving aid and assistance to the would-be entrant to the profession, AIA made a major effort in late 1977 and early '78 to increase this category of membership; third, an endeavor to service this membership segment began in 1975 with the development of AIA's supplementary education materials and, in January 1978, the intern-architect development program (IDP) was begun (see p. 47).

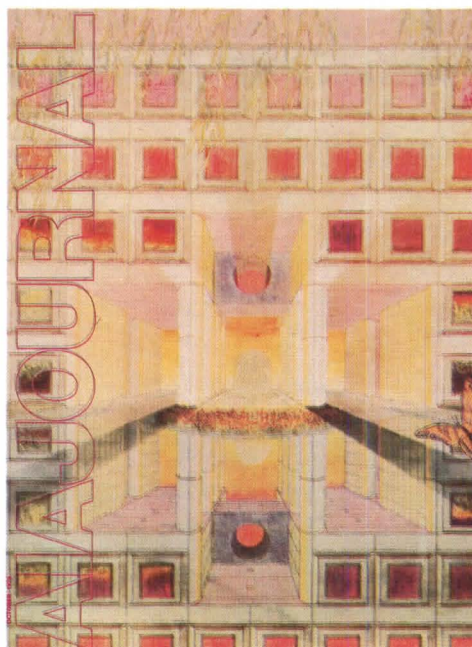
Currently, one of the major objectives of AIA's continuing education programs is to serve the professional development needs of associate members. In August,

*continued on page 24*

## Journal Cover Cited

The cover of the AIA JOURNAL for October 1978 is a winner in a competition sponsored by the American Institute of Graphic Arts. AIGA's 1979 magazine cover competition drew 2,600 entries, 120 of which were chosen by a jury for an exhibition at the AIGA Gallery and for inclusion in the book *AIGA Graphic Design USA:1*, scheduled for publication in the fall of 1980.

The JOURNAL's winning cover appeared on an issue devoted to color in architecture. It is a drawing by Thomas Hall Beeby of Hammond Beeby & Babka of the porte-cochère and its retaining pond reflection of the Tri-State Center, a speculative office building in Northbrook, Ill.





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**The Institute** from page 20

survey forms were mailed to all such members (then 3,950) to ascertain their professional development concerns.

The survey asked: "What subjects need to be addressed" in the educational programs? And, "What kinds of delivery systems would be most effective? Lectures? Seminars? AIA convention programs? Subject cassettes? Correspondence programs?"

Responses were received from 9.1 percent of the associate members surveyed. "Although the response rate was less than expected, it provides an adequate sample for analysis," says Robert Rosenfeld, assistant director of continuing education programs at AIA. "Perhaps the most significant finding is that 81 percent of the

respondees requested information on the current supplementary education program, which indicates a strong interest in professional development," he says.

Of those responding to the survey, 69.4 percent opted for programs in production technology. Some of the specific preferences were construction management and methods, computer applications and insulation principles. Practice management was a choice of 44.2 percent of the respondents, with some specific subjects mentioned being legal issues and liability, AIA documents and fee structuring.

In a category termed "other" (architectural registration, associate membership involvement in AIA affairs and financial investment for architects), 28.2 percent expressed an interest, the majority

focusing upon registration. Architectural design programs were requested by 22.5 percent of the respondents, specifically, programs in such areas as energy design principles, new directions in architecture and historic preservation.

After architectural design programs, the preferred subject matters drop considerably. Programs in marketing were requested by 9.3 percent of those responding, and 8.5 percent wanted programs in "extended practice"—cost estimating, life cycle analysis, value engineering and the like. The matter of environmental analysis, involving passive energy systems, site planning, energy calculations and environmental control systems, was of interest to 8.1 percent. Programs in codes and standards were requested by 5.8 percent. Only 1.2 percent wanted programs on architectural rendering and 0.8 percent listed programs in community involvement.

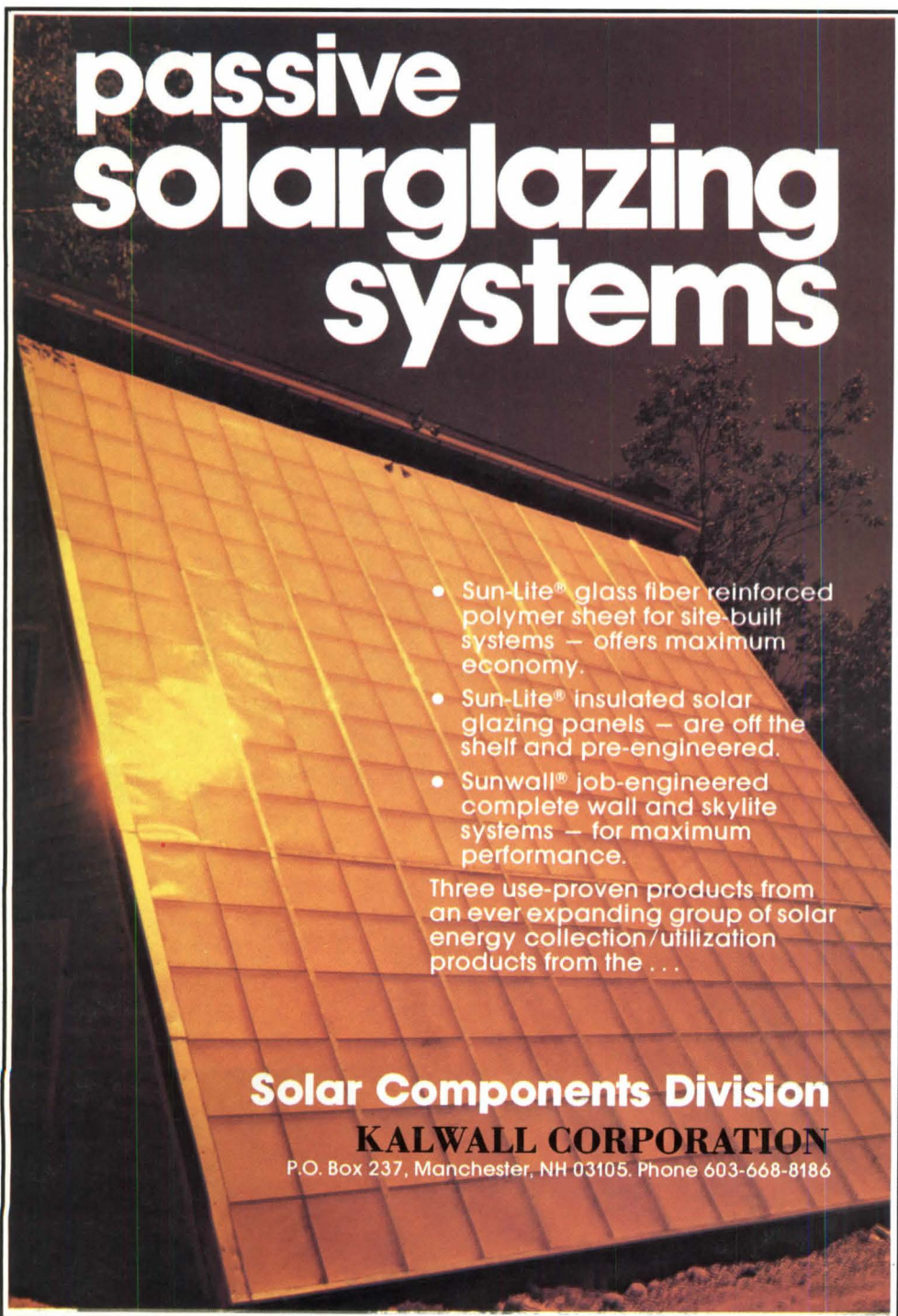
One respondent said that it didn't matter what medium was used for the delivery of the continuing education programs. "Just implement it thoroughly," he advised. Rosenfeld says that it is important to note that few alternative delivery system choices were outlined in the survey. "Future surveys," he says, "should include a wider range of preferences to obtain as accurate a response as possible."

Nonetheless, the delivery system preferences ascertained from the survey lean heavily toward three methods: lectures/seminars (37.6 percent), correspondence programs (37.3 percent) and subject cassettes (27.5 percent). At the bottom of the methods of delivery mentioned by the respondents, by 0.4 percent for each, were books/publications on construction details, computer-assisted instructional packages and telephone "hotlines." In between were various methods of delivery, such as IDP, study guides for registration examinations and an associates' newsletter.

Some individual comments from the respondents are revealing. One person asked AIA to stress programs for the licensed architects themselves in order to "teach them how to teach their future successors, the interns. . . Interns can't afford to pay for seminars, cassettes or travel to conventions, but they can stay 30 minutes late to discuss the problems of the day or to do work they let go to go along on a project review."

Another suggested that a "more effective and economical approach to implementing continuing education programs might be at the local chapter level." He said that he is aware of the problem of maintaining reasonable attendance at chapter meetings, but he believes that educational seminars "might be one way local chapters could increase attend-

*continued on page 66*



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# AIA JOURNAL

This is the last month of the year of the celebration of architecture. But it should not be the end of celebration.

It can be reasonably hoped that the year will have enduring impact in three directions. One is upon the public, which showed a heartening interest in joining the celebration. The interest was reflected in and stimulated by a growing increase in media attention to architecture. It should not need the extra stimuli of celebratory events to persist.

The second hoped for continuation of impact is upon the profession itself. We noted a few years ago in this space that the profession appeared to be undergoing a crisis of confidence. During the year of celebration, we detected a new optimism (even if it dimmed as the year lurched toward an uncertain economic ending). This is worth holding on to, if at all possible. For while this may often seem a bewildering moment for architecture, it is just as often an exhilarating one.

Perhaps the safest prediction of continued impact is upon the Institute. The reminder that the Institute need be concerned with architecture as an art as well as a profession was timely and long in coming. We doubt that this concern will disappear with the turning of the year and decade.

Speaking of the decade, we and others will have some things to say about it in the January issue, which will be a review of the '70s. Not an original idea, but one that should produce a lively issue. *D.C.*





**T**he Italians have built some of the most humane cities in the world. The archetypes for these cities were the villages and towns where, free from intellectual and stylistic pressure, the admirable fit between Italian life and Italian landscape evolved.

The success of these examples of folk architecture was no doubt due in part to the restricted choices and the simpler building requirements of early societies. Even so, folk forms are instructive because they were a direct response to familiar and pressing personal or social needs and to the demands of climate or site. Their freedom from the "artificial" restraints of taste or style enables us to more readily perceive how these fundamental forces shape our own man-made world. Italian hilltowns are especially rewarding examples, for in them we may experience still functioning models of what Aldo Van Eyck has called "the extension of

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**Mr. Carver** practices in Kalamazoo, Mich. The photos and text on these pages are from his book *Italian Hilltowns*, recently published by Documan Press, Ltd., Kalamazoo, distributed by Morgan & Morgan Inc. He is also author of *Form and Space of Japanese Architecture* and *Silent Cities—Mexico and the Maya*.

collective behavior into built forms."

Unfortunately, their continued functioning is threatened by the social upheavals of modern industrialization and communication. Where many of these towns remained almost unchanged for centuries, at the present rate of destruction and abandonment, within a generation they will survive only in photographs. Their only salvation may lie in a world forced by rising populations and dwindling resources to once again adopt folk architecture's spare and simple forms.

An insidious barrier to understanding the forms of other cultures, however, is the tendency to romanticize those cultures. It is a tendency almost impossible to avoid entirely, for we are able to wander through these places exempt from the day to day struggle to survive, charmed by the play of light and shade on quaint forms. But unrestrained romanticism is treacherous, as when Bernard Rudofsky mars his otherwise valuable discoveries by such comments as, "instead of trying to conquer nature as we do," the inhabitants "welcome the vagaries of climate and the challenge of topography." The inhabitants, of course, did not "welcome" challenges, they dealt with them as best they could, building on remote hilltops not for the





# ITALIAN HILLTOWNS

challenge to themselves, but because such building posed a challenge to their enemies.

Our fascination with the picturesque qualities of folk architecture reinforces this romanticism. But we are made uncomfortable by picturesqueness because it has come to imply something contrived, quaint or artificially irregular—characteristics modern architects regard as immoral.

Before a puritanical modernism made it a term of derision, the picturesque was a natural attribute of architectural form and of the man-made landscape, but decades of suppression dulled our skill in its use—even while demonstrating its indispensability. An important lesson of vernacular architecture, then, is that picturesque qualities of architectural form need not be contrived; they can logically derive, for example, from a sensitive adaptation to the site or from a forthright use of materials and building techniques.

It is impossible to deny the picturesque charm of Italian hilltowns—perhaps the most palpable aspect of their appeal. But beyond picturesqueness are characteristics which meet other fundamental human needs, and are, as we shall discover, not accidental or unique to Italy.

*Folk forms demonstrate that the picturesque can be founded in logic. By Norman F. Carver Jr., AIA*

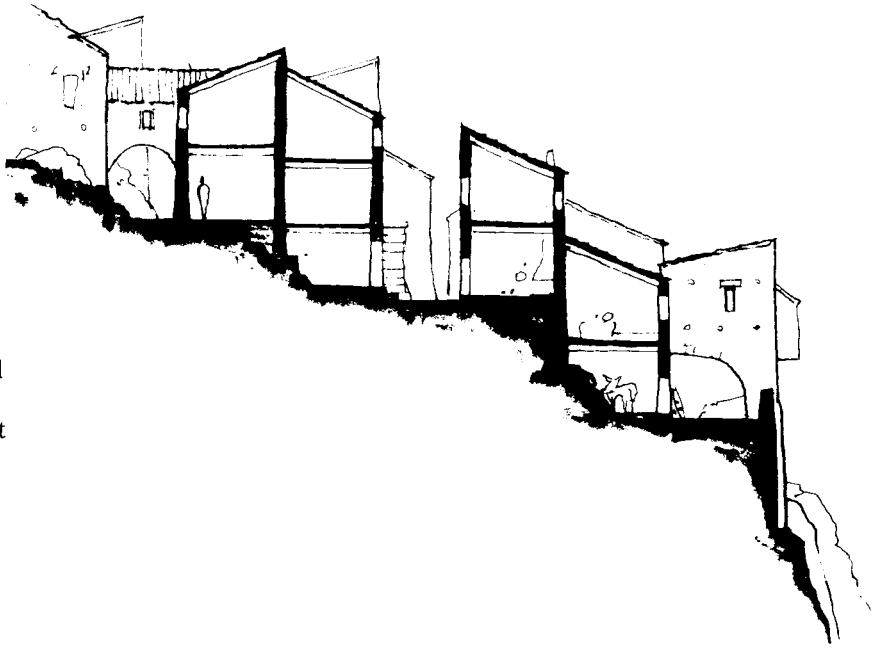






## Adaptation to the site

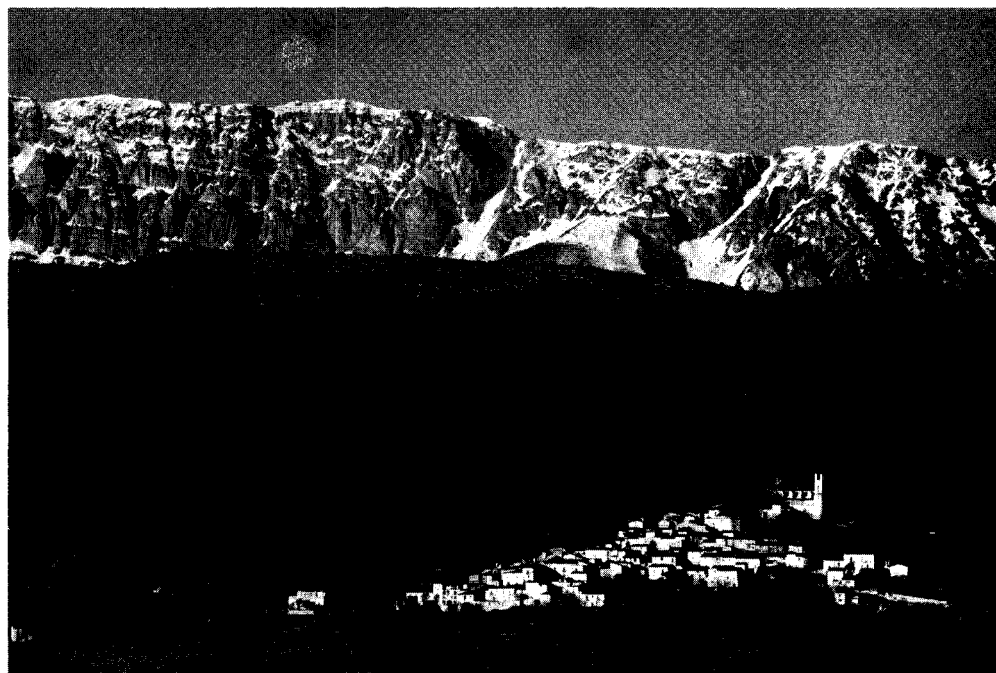
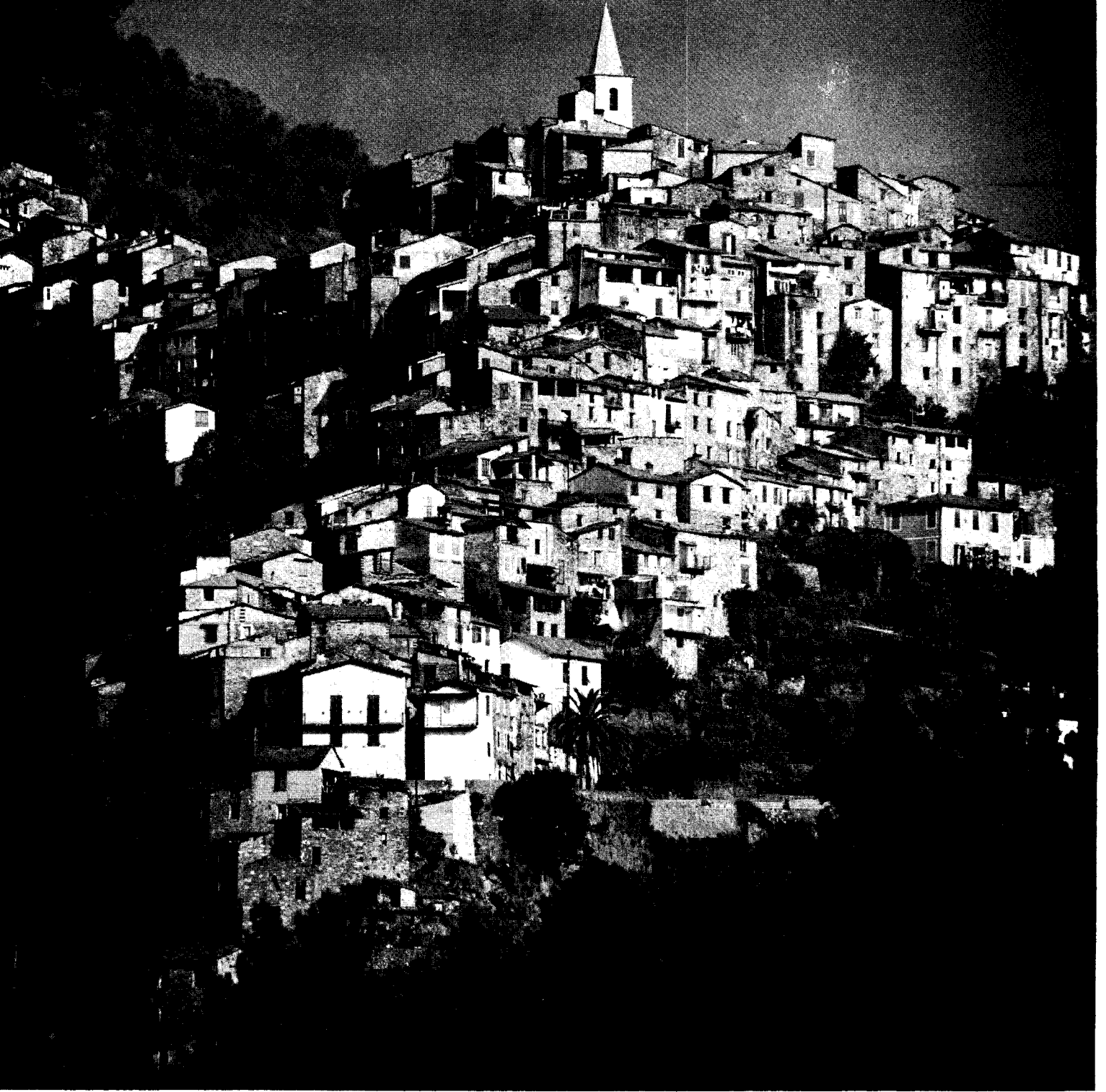
Italy's mountainous terrain provided many dramatic hilltop or elevated sites, ideal for defense against marauding armies and protection from the malarial mosquitoes of the lowlands. In addition, the use of hillsides, though it meant long steep climbs twice a day to the fields, preserved the limited agricultural land of the valley floors. Prominent sites also lifted the towns to the sun and air, and many towns oriented themselves to the winter sun along the south slopes. (The beauty of the spectacular views played little part in the choice if we judge by the few tiny windows opened to the views and the failure of many public piazzas to take advantage of the vistas.) Despite the tightly packed houses and narrow streets, the smaller towns were not oppressive. There were numerous little piazzas within the security of the town, and always the release of the open countryside a few steps away.



*Left and plan below, the town of Vitorciano, north of Rome, perches on the brink of its volcanic rock outcroppings. Section above and street in Postignano, below, show typical accommodations of building form to topography.*









## Variations in town plans

The consistent use of hilltop sites covered with densely packed stone buildings gave many towns a similar character. But infinite variations in the sites, the use or lack of walls, the siting of the castles and churches, and local variations in materials or details made each town unique. The defensive town took three main forms: houses gathered around the castle; the walled town, and the contained perimeter town. Most towns grew without plan as irregular, accidental clusters of mutually supporting individual units, accommodating the peculiarities of each site. One special case is San Gimignano, a walled town punctuated with towers built in the 12th to 14th centuries as symbols of the competing nobility. Of the town's original 56 towers, 13 survive.



*Left, Apricale clusters under its church; left below, Prata under its castle. Plan, left, and on the horizon, below, San Gimignano.*

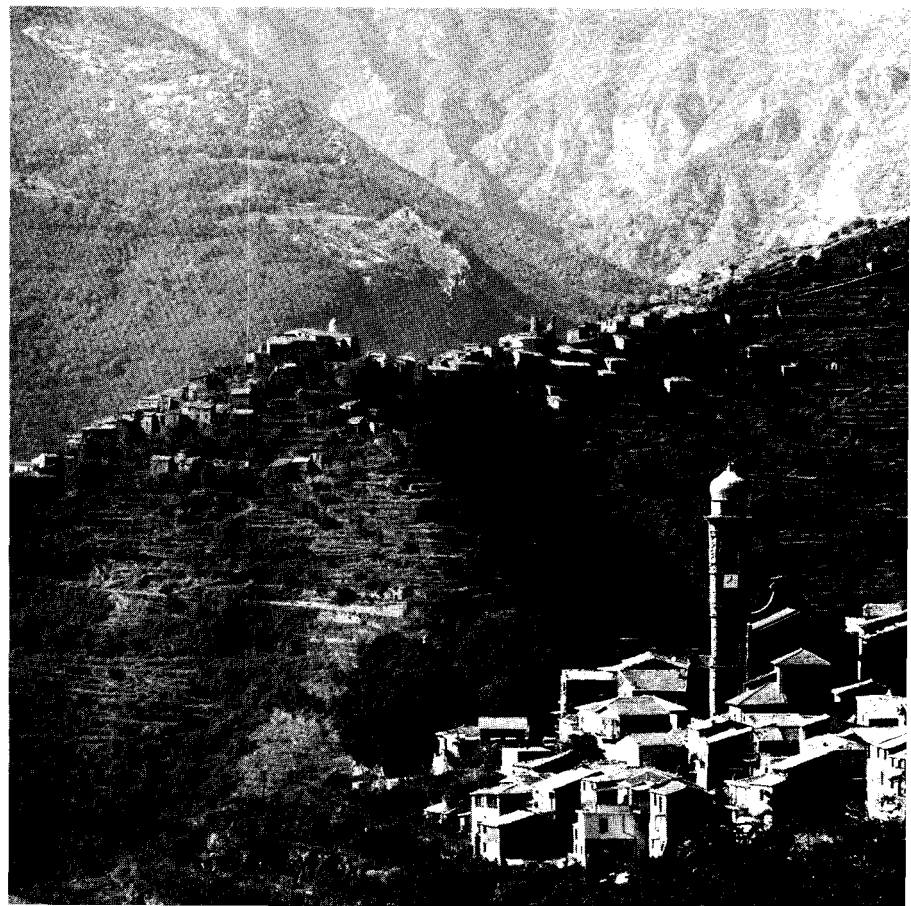
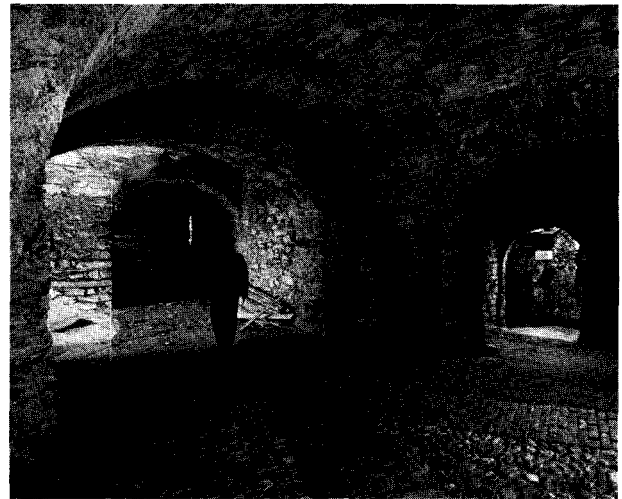




## Passages and intersections

The hilltown streets, designed for pedestrian and animal traffic only, were a maze of curved passages running parallel with the hillside, crisscrossed by diagonal ramps or steep flights of steps, passing under and through buildings, and meeting in complex intersections that opened into dozens of tiny piazzas or emptying suddenly on the main square adjacent to the church or below the castle walls.

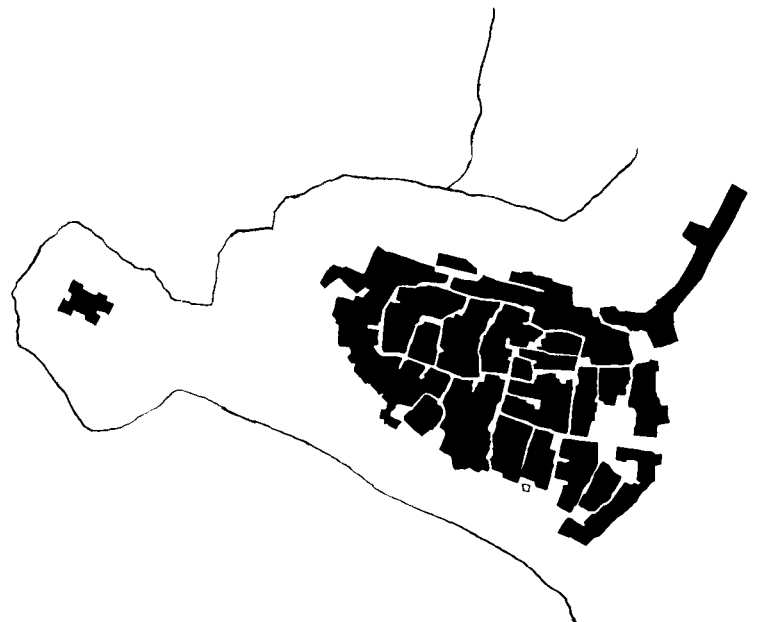
*Left, a steep street in Tursi. Below, vault covers an intersection in Triora. Bottom, linked towns of Triora, at left, and Andagna. Right, main street of Castelvecchio Calviso.*











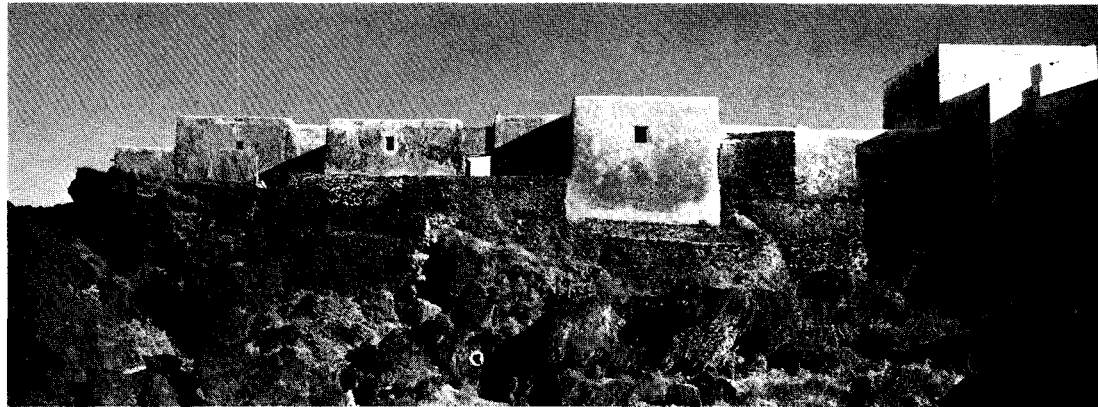
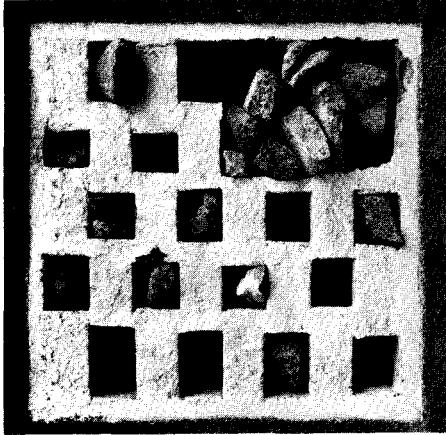


## Variety within regularity

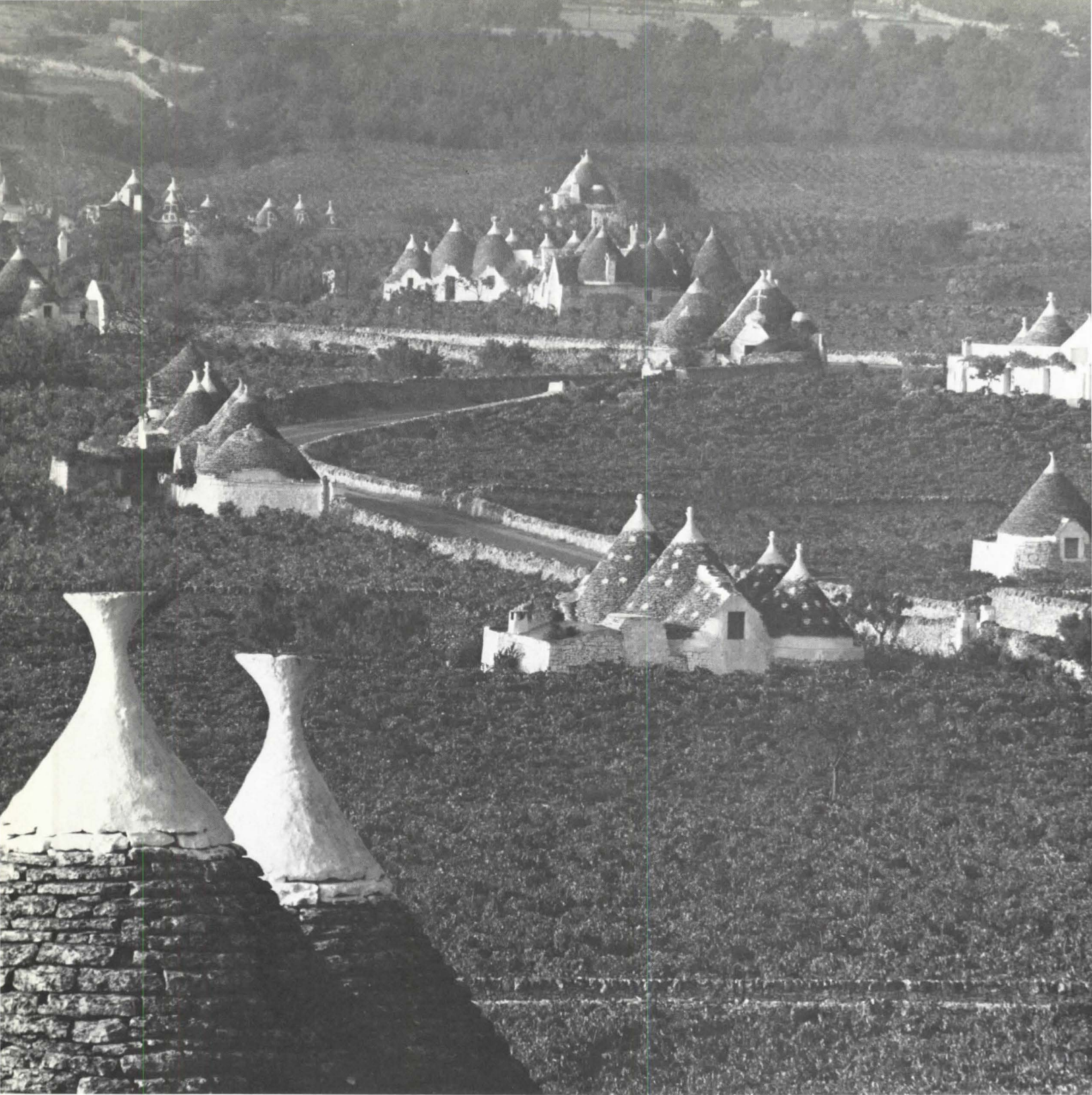
Sperlonga is a whitewashed fishing village just a few hours south of Rome. To satisfy a variety of functional needs the solid shaped houses and the eloquent interior spaces are unself-consciously irregular, varying only in detail, not in type. The result is a village form unique yet familiar, simple yet complex and diverse yet unified. The houses on the volcanic island of Stromboli, off Sicily's north coast, have a more

African feeling. The basic module is a simple cube adapted to a variety of uses and clustered to make clusters, with only tiny openings, shelters from the relentless sun and wind while within the houses open on small courtyards that are private and protected. The small scale of the cube module and the irregularity with which it has been clustered and adapted to the site create a strangely harmonious relationship between an uncompromising geometry and the rugged landscape.

*Opposite page, plan and waterfront view of Sperlonga, and a street scene in Martina Franca. Left, a Sardinian barn window plugged with stones to keep out birds. Two views below, houses on Stromboli.*







### Natural idiosyncrasy of form

Apulian towns—the trulli area—are some of the handsomest and most interesting towns in all of Italy. They are mostly small, white and invariably immaculate. Some consist entirely of trulli, making use of the area's abundant limestone slabs. Others, surrounded by a landscape full of trulli, are built in more conventional form—as if disassociating themselves from the lowly peasant style. Though Apulia is one of the densest areas of scattered farm houses, small towns are plentiful—some no more than slight concentrations of trulli. As elsewhere in Italy, these towns were not systematically planned; instead, they expanded in conformance to the demands of nature and the needs





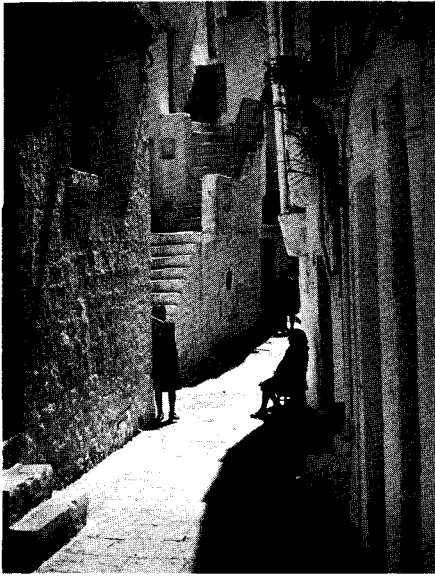
of man. These were small agricultural towns. They did not aim for an artificial impressiveness or follow an alien pattern of pretentious buildings and monumental spaces. Their impressiveness lay in the rhythmic repetition of a single house type, compact and dense, arranged to reflect the social realities of small town life. The overall form was vivid, varied and modestly monumental.

*Conical stone houses ('trulli') in the Val di Itria, far left, and, below, in Alberobello. Left below, the un-stuccoed interior of a trullo dome. Left, another distinctive house form: a low domed shelter with steps to roof and stuccoed downspout on the road between Cisternino and Ostuni.*





## Isolation and density



High on their eroded hilltops, the inhabitants of towns such as Pisticci pay for their isolation with long arduous trips to the farms in the valleys below. Pisticci is composed mainly of a single-story house type that undulates in rows over the irregular site, creating, instead of deadly uniformity, a rhythmic pattern of varied forms and spaces. The extreme density of houses constructed in layer upon compact layer meant such relatively small towns sometimes held thousands of people. But the density was not oppressive—the ever present countryside, the informal street patterns, the intense light of the high whitewashed walls in narrow streets reflecting light into every corner or casting welcome shade in the heat of summer made these towns pleasant and vital places.

*Left, Locorotondo. Below, Craco. Opposite, the town of Pisticci and a farmer on the trail down from Rocca Imperiale.*







*Prints of any photos on these pages or in the book, signed and personally made by Mr. Carver, are available from him at 3201 Lorraine Ave., Kalamazoo 49908, or in care of Documan Press, Box 387, Kalamazoo 49005.—Ed.*



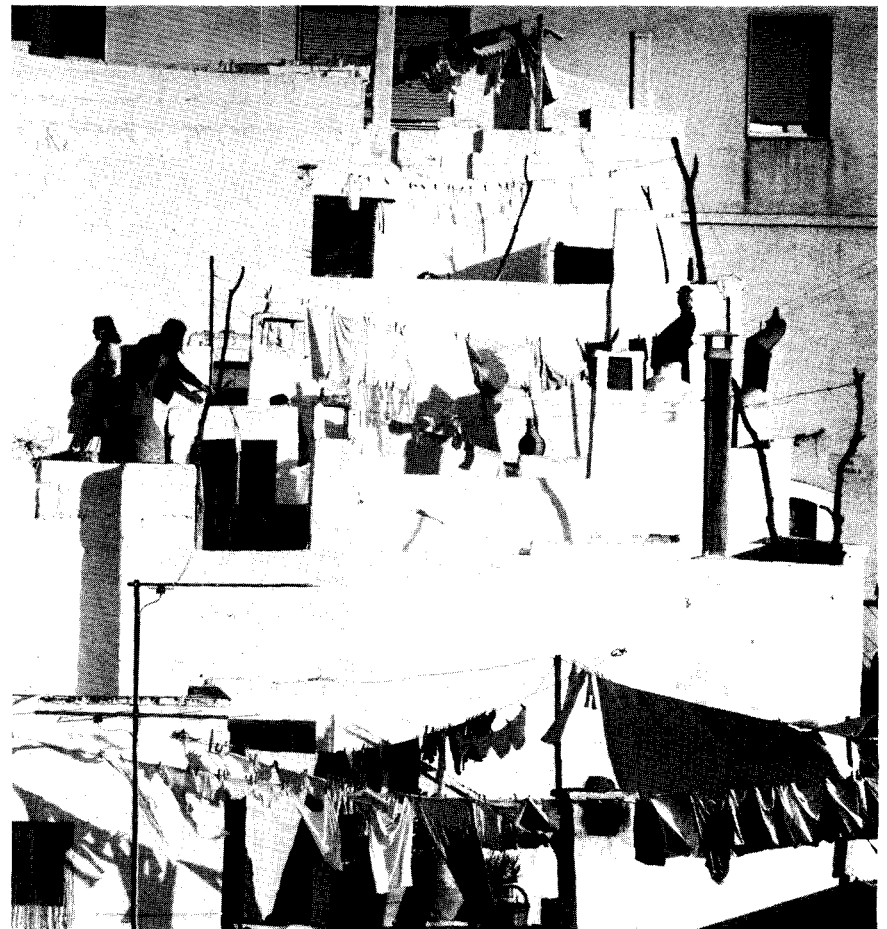


## The threat of change

The result of this vernacular building was a unified environment of intelligible variety and authentic complexity. Some of its characteristics naturally spring from the limited needs and capabilities of pre-industrial societies in which building types were few and the technology for radical change unavailable. Traditional forms now disappear because of the increasing complexity of required building types; the increasing exposure to a variety of ideas that destroys the shared values necessary to support a tradition; the increasing pace of change without time for the evolution of traditional forms to meet new requirements, and because a growing technology makes the older forms no longer seem adequate.

Perhaps if the world holds still, we may develop new traditions of architectural form more comprehensive and nurturing than what we are now destroying—but one thing is certain: We shall never pass this way again. □

*Above, the town of Pentadatiello at the toe of the Italian boot. Right, Ostuni. Opposite, a sheer cliff of houses at Anticoli Corrado.*











Photographs by Amiel Ungar

# Using Streets as Housing Sites

*An Israeli architect proposes a new approach to redevelopment without dislocation. By Charley J. Levine.*

A bold but controversial urban design scheme by architect Israel M. Goodovitch may bring order and badly needed new housing to a troubled slum area of southern Tel Aviv. The scheme's innovations have important implications for other such neighborhoods in Israel and throughout the world, but the design evolved naturally as a solution to particular local problems.

The Hatikva neighborhood was first settled in 1935 by

streams of homeless newcomers. Land was parceled out in narrow, miniscule plots of only 120 square meters (140 square yards) each, and families were determined to take advantage of every square inch purchased. There were no restrictive building codes. There was no social pressure to conform to communal standards. There was only a frenetic drive to build one's house and get on with the business of living inside it.

A decade before the state of Israel was born with the stirring song "Hatikva" (the hope) adopted as its national anthem, the

**Mr. Levine** is a free lance writer in Jerusalem.



Hatikva quarter was already rushing toward its present state of premature delapidation. Inadequate basic services and insufficient living space have created a blight that is unusual for Israel.

Today, Hatikva's 215 acres hold 5,000 separate housing units—most of them of only one or two rooms—and 20,000 inhabitants. Almost all of the residents own their own units, and 75 percent of the people are of Afro-Asian background, the so-called "other Israel," rather than the minority of European Jews that has traditionally set the country's cultural pace.

Large families predominate, and there is a growing number of aged persons. The area's topography and its proximity to the Ayalon River make it vulnerable to winter flooding. There are severe social problems as well—drugs, juvenile delinquency and prostitution—but the quarter also has its remarkable strengths, foremost among them a profound sense of community.

The residents know they have critical problems and want to solve them, but they will accept solutions only within certain parameters. New housing, for example, is a coveted goal, but highrise apartment buildings would never be accepted in the quarter. Lowrise buildings are traditional there, and the people intend to maintain the tradition. They also want more open spaces, more playgrounds, more parking areas and better schools for their children.

But, above all else, they do not want to be dictated to, and they will not countenance hypothetical solutions dropped on their doorsteps without prior consultation.

"The first principle that anyone who hopes to improve this situation must realize," Goodovitch says, "is that Hatikva residents will not move. No matter how much this complicates things, this is *their* neighborhood, and there is no way that any kind of relocation program might succeed."

Despite this complication, Goodovitch found a solution. "The streets are the key," he says, "the operational as well as the psychological key." His plan is to close the streets to traffic one by one and to construct new housing in the reclaimed land. No one has to move out while construction is in progress; in fact, residents can have a bird's-eye view of their homes in formation and will undoubtedly transmit plenty of pointers to the engineering and construction crews. After construction, the 12 original families on each street will receive title to their new

*Below, before and after models of a Hatikva street according to the Goodovitch scheme. An interim view would show the two rows of old buildings still standing (and still occupied) with the new under construction on the street between them.*

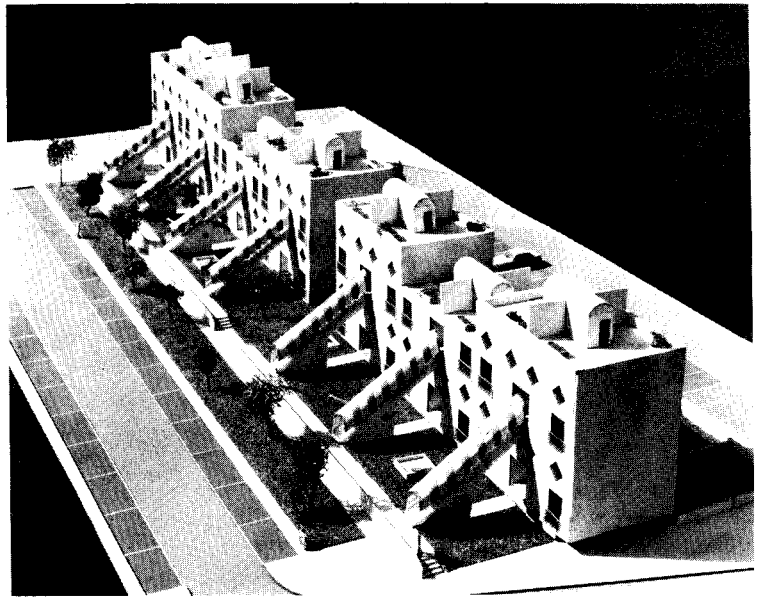
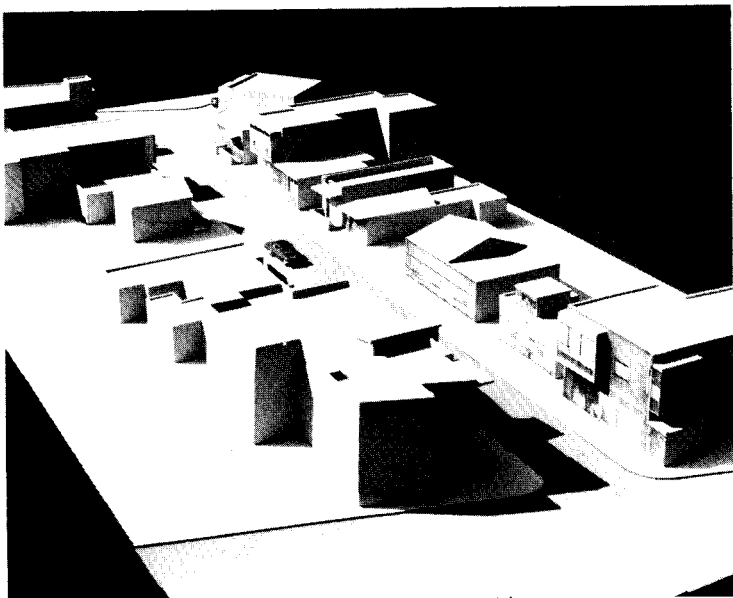
apartments free of charge; this is in exchange for the surrender of their old units and for the inconvenience of being surrounded by construction for a year or more. There will remain approximately 20 apartments on each street that can be sold on the free market or through government assistance programs to such groups as young couples or recent immigrants. The old housing units on either side of the new ones, having been vacated, will be razed, making way for green areas and parking spaces, and providing access for repeating the process on an adjacent street.

Goodovitch is certain that "the first street we tackle" will be the model for others and the best possible incentive for accelerated completion of the overall project. Although the plan makes every effort to take into account residents' sensitivities, including their aversion to relocation, what will happen if one or more families or elderly singles adamantly refuse the proffered new apartment?

"Peer pressure, which is strong in this close-knit kind of place, will help remove any such obstacles," the architect says, "and free, modern housing right in front of one's nose is an enticing proposition. If worst comes to worst, however, the city engineer will declare the old structures unsafe and condemn them, or the housing authority can declare the right of public domain and enforce cooperation." Goodovitch is not only convinced that his idea will work; he is positive that it is the only plan that *can* work.

An obvious problem, though, is the tightness of space available for the initial construction. The streets in the quarter are only 36 feet wide between existing buildings; the width of Goodovitch's proposed buildings is 24 feet; he thinks there is just enough space to squeeze by. There will be six feet to spare on each side of the new construction, and, of this, three feet on each side will be cordoned off for the use of residents during construction. Left with only two three-foot strips in which to maneuver, Goodovitch turned to nearby ports for a modus operandi. "Regular cranes were ruled out, as they would not fit, and because of the hazards of materials falling onto the roofs of the old houses," Goodovitch explains, "so we needed another method. I turned to the moving arch-crane, as is used in port work. We will lay temporary tracks in the narrow streets and use the crane and wench—which will be five stories tall—to roll in the prefabricated, modular units."

The utilization of prefab residences is the basis of a second Goodovitch aspiration, namely to shorten Israel's notoriously slow building processes. With draconian union regulations, it is not unusual for a conventionally erected apartment building to take up to two or even three years for completion. Allowing







*Goodovitch with Hatikva residents.*



## A challenge on the matter of infrastructure.

for routine delays, problems of material supply and so on, the process can be excruciatingly prolonged.

What Goodovitch wants to end with is a block-long series of attached garden apartments, three or four stories high. The typical unit will be two stories (three bedrooms and bath upstairs; living room, kitchen, dining room and second toilet downstairs), encompassing 100 square meters (1,000 square feet). The norm will be two such condominiums built atop each other, although in about a quarter of the cases, the bottom floor will be reserved as a one-story, half-sized studio apartment for a single, elderly resident.

Such a garden condominium idea is diametrically contrasted with Israel's typical four-floor residential multifamily dwellings, with a family on each floor and with the roof and garden shared by all four families.

The tentative financing plan for the scheme is based on the estimate that each street of new housing will cost almost \$1 million, or about \$30,000 per unit. If the 20 excess units can be sold for \$50,000 each (a price that is considered reasonable in Tel Aviv's present inflated market), the entire program can finance itself.

Yet not everyone is as enthusiastic about the scheme as Goodovitch. Artsi Wein, for example, chief for the last year of Tel Aviv's Ezra Ubizaron housing development corporation, the agency charged with all urban redevelopment in the area, has emerged as Goodovitch's arch-nemesis.

Wein claims that engineers have told him that the scheme is

infeasible: "The narrow spaces between the old houses and the new construction are simply impossible for people to deal with. More importantly, it would cost more to move sewers and other underground infrastructure than it would to fix up things as they currently stand."

Goodovitch denies that there is a problem with infrastructure. "The foundations of the existing buildings do not generally touch the underground systems," he says. "In fact, electrical and telephone lines are in the air, and water is piped in on the homes' rear sides, so sewage lines are the only ones we need to address during our initial building phase."

Another critic is Alan M. Kanter, who practiced architecture in Los Angeles before moving to Israel and now teaches at Ben Gurion University. His key objection is the total clearance approach.

"The problems in radical surgery of this depth are legion and well documented," Kanter says. He acknowledges that "after the bulldozers and masons leave" the physical environment may be improved, but asks: "Where is the soul and spirit that says to the resident that his connection to the past has been respected and preserved?"

Still, Goodovitch has painstakingly sought—and achieved—acceptance of the plan by Hatikva residents. Shimon Aluf, 25, clearly expresses a consensus of his neighbors when he says, "It's a good plan and a good idea." He acknowledges that living with construction so nearby would be painful, but says that "at least afterward we would have something to show for it."

"You can't fix this place up," says Aluf. "You can only rebuild it from the ground up." □



# The Intern Program: A Progress Report

*Three years after its inception by AIA and NCARB, it is not without controversy. By Mary E. Osman*

Guiding the experience of would-be architects is a worthwhile service, everyone agrees, but just how such guidance should be administered is another matter. AIA and the National Council of Architectural Registration Boards have been busy developing regulations and study aids for the intern-architect development program (IDP); *too* busy, some critics think.

As James E. Ellison, AIA, administrator of the Institute's department of education and professional development, sees the situation: "Some of the most thoughtful and talented members of the architectural profession have spent several years in the development of a workable internship program. They have continued to evaluate IDP throughout the program's history, making changes and adjustments. IDP has been developed in a most cautious way, and it will continue to evolve. But we now have a situation in which many members of the architectural profession are asking, 'What is IDP? Do we really need it? Is IDP a cost-effective effort?' Most of these questions concern the IDP practical training criteria—the on-the-job exposures to office practice and project management considered important during the internship years.

"The criteria have not been evaluated adequately, because it is difficult to do so until a significant number of interns passes through the program over a sustained period of time. The statewide program is less than two years old. So it is natural for students, interns and practitioners to be apprehensive and to question its objectives and effectiveness. The Institute is about to conduct an independent evaluation of IDP. So is NCARB."

Specifically, the program requires as a prerequisite for licensing the attainment of specified levels of achievement in each of 14 areas of professional knowledge and activity. NCARB's responsibilities have been the development and maintenance of a recordkeeping system and assistance to state boards in the revisions of regulations for the incorporation of all or a portion of the IDP training criteria. AIA's role has been the recruitment and supervision of professional advisers outside the office in which the intern-architects work, and the preparation and dissemination of SupEdGuides—experiential learning resources that an intern-architect can use to supplement experience gained in the office.

This program would replace the traditional haphazard situation in which many would-be entrants to the profession, in the period between formal education and practice, have been more or less forgotten, allowed to survive as he or she is able while awaiting the registration examination.

IDP was launched with a 16-month pilot testing period of the concept (see Jan. '77, p. 18) in Colorado, New Jersey and Texas. After the testing ended in mid-1977, AIA and NCARB, through a coordinating committee, made adjustments in such elements of the program as the role of professional advisers and recordkeeping.

Kansas, Mississippi, Oklahoma, Rhode Island, Texas, Virginia and West Virginia have all adopted IDP, with the registration boards in those states revising their regulations to say, in essence, that a candidate who wishes to become licensed must have met the IDP training criteria. Eight more states—California, Iowa,

Louisiana, Michigan, New Hampshire, New Jersey, Oregon and Tennessee—are in the process of implementing IDP, although the registration boards in those states have not yet officially changed their regulations. Also, the IDP concept is now being reviewed by state boards in Alaska, Arizona, Arkansas, Indiana, Minnesota, South Carolina, Utah and Vermont.

To take one state—Mississippi—as an example of the way in which IDP has developed, the state registration board has formally adopted the IDP training criteria as the "recommended way for satisfying the experience requirements of the registration law." Interns who do not wish to enter the program have to give evidence, executed by employers to the board's satisfaction, that the intern has completed equivalent training. Robert V.M. Harrison, AIA, a principal in the Jackson firm of JH&H Partnership and IDP state coordinator, enthusiastically endorses this IDP concept. "I would not be so involved in the program, giving so much of my time, if I did not believe in it," he says. Currently, there are about 80 intern-architects involved statewide, with about 15 formally enrolled with NCARB. Three of them work in Harrison's own office.

The Mississippi Chapter/AIA has assumed the role as a partner with the state board "to assure more highly qualified architects serving public needs," Harrison says. The chapter is responsible for administration of the advisory system and continuing education programs.

Harrison himself is well experienced in IDP, having served as a member of NCARB's IDP committee which administered the pilot phase of the program in three states. A member of the Mississippi state board, Harrison says that the board's adoption of quantitative practice training requirements, as outlined by NCARB, is not intended to "impose an unrealistic burden on the intern-architect, but to assure the public that each candidate for the professional examination has gained an acceptable exposure in certain important areas of architectural practice." The board's policy always has been, he says, to examine exceptional circumstances on a case-by-case basis.

J. Carl Franco, an intern-architect who has gone through IDP in Harrison's office, says that the program, to him, is formulated around two central themes: commitment and benefit. In terms of commitment, he says, the "intern has to take the lead. He or she has to accept the challenge of growth that IDP offers and fulfill the goals the program sets forth." On the part of the employer, commitment means giving the intern reasonable freedom to achieve the goals within the firm's ability and within the realities of practice. The employer, Franco says, "has to be willing to structure a work program that allows enough flexibility for the intern to meet the IDP objectives, while at the same time fulfilling the employer's needs." For the adviser, commitment is required in giving the necessary time to counsel and advise the intern, providing as well "new avenues of involvement that the intern could not otherwise attain alone." According to Franco, the profession's commitment is in the provision of support and communications, and a "strong base from which to build."

On the benefit side, Franco believes that the intern "receives a  
*continued on page 63*





# Passive Solar Concepts

*They are subjects of a national conference which also honors a pair of pioneers. By Allen Freeman*

On the following pages are examples of recent work in passive solar design. All were featured at the fourth national passive solar conference in October in Kansas City, Mo., sponsored by the American section of the International Solar Energy Society. The 10 works shown here were among some 50 presented in a series of sessions devoted to "emerging architecture."

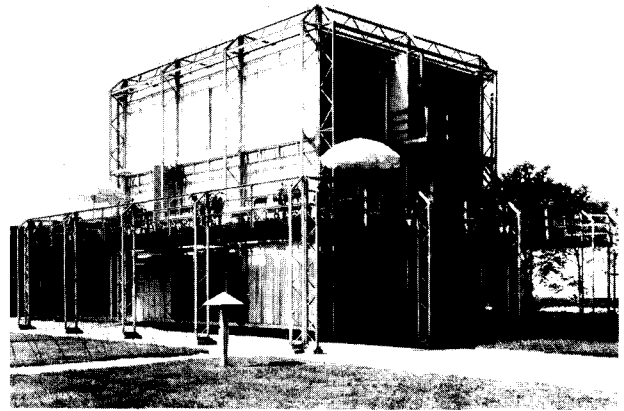
As this selection would indicate, most of the passive solar work in the U.S. is still on a residential scale. But there is diversity and delight within that segment of design. (At left and overleaf, a house in Colorado by Lawrence Atkinson, AIA.)

At the Kansas City conference, the society cited George Fred Keck, 84, and William Keck, FAIA, 71, of Chicago, who were practicing solar design before the other designers shown were born. William Keck showed slides of the brothers' work.

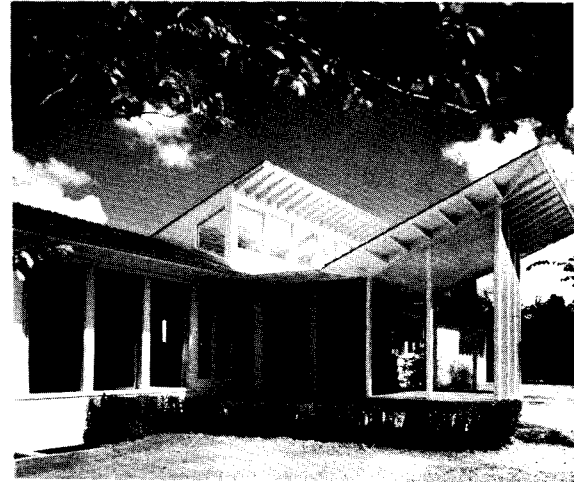
People have been "discovering" the Kecks for several years now. Their houses of the past 50 years are original, logical and ingenious. Many, not surprisingly, are beautiful. Although frequently published in the 1940s and '50s, their work drew less attention in the '60s and early '70s until the "Chicago Architects" exhibit of 1976. Now they are becoming deserved heroes of passive solar designers, many of whom are in their 20s and 30s and eager to trace their intellectual roots.

The evidence of their early passive concern is impressive. Solar orientation, earth berming, exterior Venetian blinds, roof ponds for cooling, heat sinks—all were used by the Kecks before World War II, although they are reluctant to take credit for ideas used by the ancient





Hedrich Blessing



Top, William and George Fred Keck and the 1934 Crystal House, built at the Chicago 'Century of Progress.' Above, the Sloan 'Solar' house of 1940.

Chinese, Koreans and Romans. Ask them about their earliest influences; they will tell you about their father, a furniture retailer in Watertown, Wis., a man of German descent who made every dollar go as far as possible. Later, in the 1930s, "when we found we could save a little heat by organizing the windows on the south side, that sounded like a damn good idea," recalls William. During this period, Fred was principal designer and William was writing specifications. Not coincidentally, the modernist style in which the Kecks have always designed—Wright was a strong influence—was compatible with their "common sense" approach to all aspects of architecture, energy conservation included.

George Fred Keck first made a name for himself with two houses he designed and built for Chicago's "Century of Progress" World's Fair in 1933-34. (A 1920 architectural engineering graduate of the University of Illinois, Fred had opened his own practice in 1927 and was joined by William after the brother was graduated from U.I. in 1931. William became a full partner in 1946.) Neither the House of Tomorrow, a duodecagonal, center core structure with fixed plate glass facade, nor the Crystal House, also glass-sheathed but supported by exterior trusses running up the sides and over the roof, was solar designed. The point of these houses was prefabrication—quick construction, no excavation, low cost and maintenance—and the Kecks returned to prefabrication during World War II. But the winter heat gain through the glazing made an impression on the Kecks, and passive solar concepts showed up one by one in their houses after the fair. These

ideas were reused "whenever possible, in luxury houses as well as the more modest ones," says William.

In 1935, they dug the north side of a house into a sloped river site at Watertown. A couple of years later, they put exterior operable Venetian blinds on the Fricker house in Whitewater, Wis., and on an apartment building in Chicago's Hyde Park, the building in which they live today. (The high sulfurous acid content in Chicago's air so corroded the stainless steel clips and chains that they were replaced by fixed, all-aluminum blinds in the 1940s. "Live and learn," says William.)

They put a cooling pond on the roof of a 1938 house, installing a spigot for the owner to operate when the water is depleted. And at about this time they began calculating solar angles, widening southern overhangs and putting black slate floors in sun rooms. "We didn't have the term 'heat sink'; we just said it was a nice place to keep your feet warm," recalls William, who also has a strong affinity for radiant flue tiles as flooring. The Kecks used these in pre-World War II years with both hot air and water. Radiant tiles provide even, draftless heat—"magnificent; like sitting in the sun, but without the glare," he says, lamenting that they were killed off by high labor installation costs and by the postwar demand for airconditioning, whose ducts make radiant systems redundant.

Subsequent work has built upon and refined their prewar passive solar efforts, and the firm is still designing houses around Chicago. The Kecks' ingenuity with the sun is typical of their pragmatic and humane approach to design.





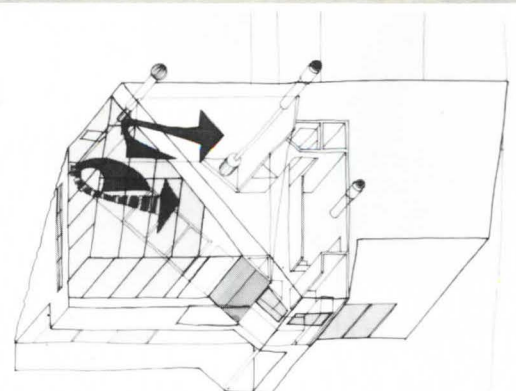
## Sliver in a Colorado Slope

The Turner residence in Pagosa Springs, Colo., is cocked about 40 degrees out of square with the compass because budget constraints ruled out terracing on the difficult site. Designed by Lawrence Atkinson, AIA, when he was with Crowther/Architects Group, the house has a slender silhouette parallel to the mountain contours and approach road. One long wall is buried a full story into the slope, and the stand-seam metal roof echoes this slope.

The wood frame structure, on a concrete foundation, is sheathed in blue spruce planking. All glazing is at least double; a light well is quadruple glazed. Entry and living areas are on the upper level; sleeping quarters are below. A large solarium wraps around the southeast/southwest exposures at the upper level and heats the adjacent rooms, which are brick-paved.

The lower level is heated by air pulled from the solarium through a floor aperture. A small fan draws the warm air through a single duct and out vents above the bedroom doors. Backup heat is provided by a wood-burning stove in the coldest corner of the living room. Its heat is drawn into the solarium through a wall transfer grille and down to the lower level through the floor aperture. The electric radiant baseboard heaters have not been needed except in the solarium, and Atkinson says that would be unnecessary if the owners chose to use the specified movable insulation at night. One cord of wood was burned each of the first two winters of occupancy.

A footnote: The owner, fearing heavy snow loads, decided on a fully warranted, metal frame factory greenhouse. But there have been condensation problems for lack of adequate thermal protection between metal and glass. Atkinson says he is gratified that manufacturers have begun offering full thermal breaks, usually neoprene, in metal framing systems, although he finds it thermally inferior to wood.



Winter/Summer Night



## Cube with a Cupola

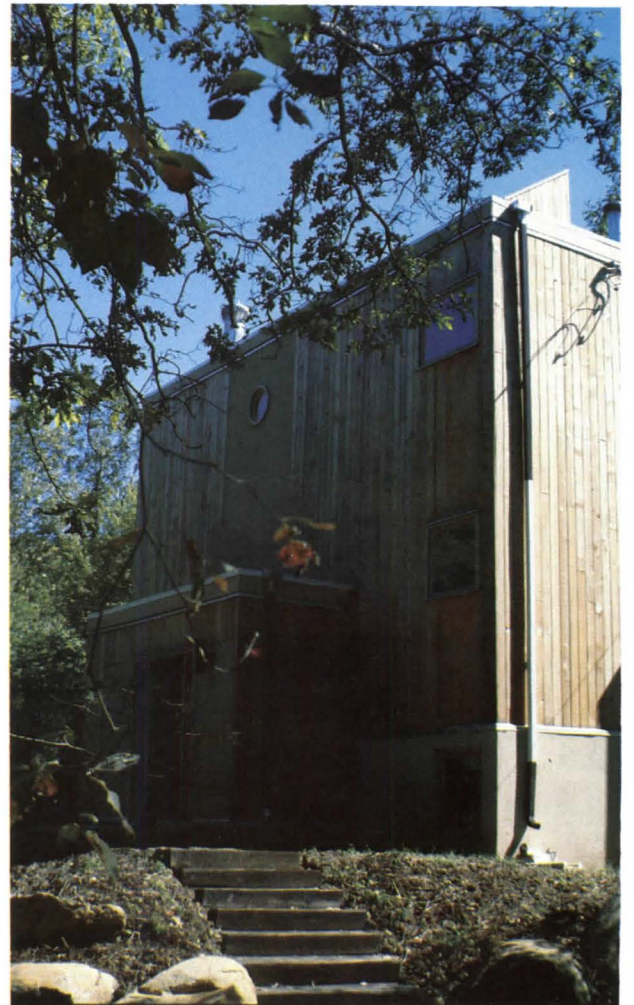
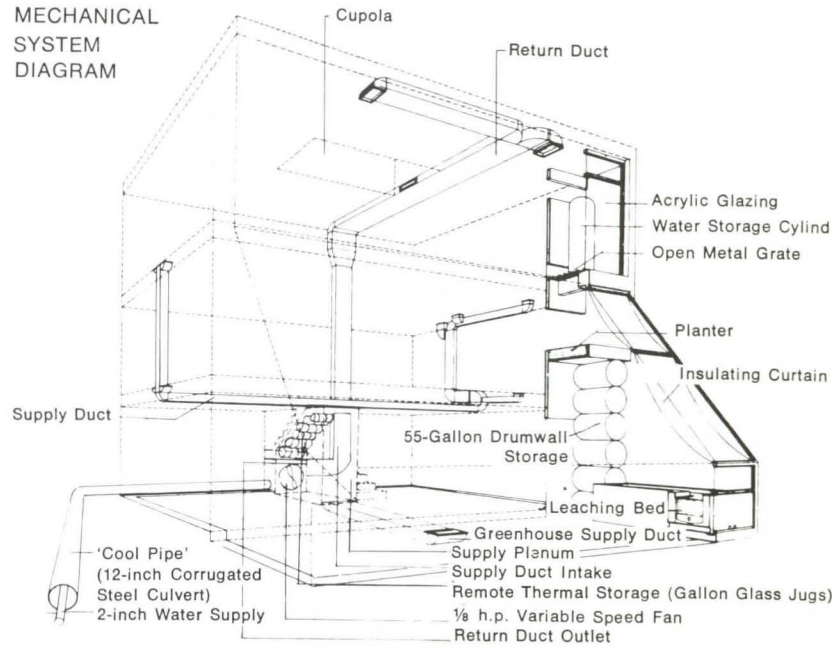
The Payne residence in Hopewell, N.J., takes the form of a cube to minimize exterior surface exposure. It is shaded on the east and west to cut summer heat gain and partially buried on its sloping site to minimize winter heat loss. The garage and breezeway shelter the north main entrance, which incorporates an air-lock vestibule.

A reported 80 percent of the heating requirements from October through May is provided by the passive solar design. There are 476 square feet of southern-exposed double glazed area enclosing a greenhouse and a 120-square-foot water storage wall made of Fiberglas tubes. A system of ducts and dampers helps circulate the heated air to basement storage (800 gallons of water, not yet installed) during sunny days, from which it reradiates at night. Insulating shades are drawn inside the solarium windows at twilight, when the interior water wall helps heat the bedrooms.

When natural ventilation is insufficient for cooling (the house is sited to take advantage of prevailing breezes), a fan circulates air over the earth-cooled water storage area and through the duct system. This cool well is to be abetted by an underground 12-inch culvert which will enclose the well-water source pipe into the house. Hot air is vented through a cupola.

Designed by Vinton Lawrence of the Harrison Fraker office as a prototype tract house, this is a 1978 winner of a HUD solar design award.

MECHANICAL SYSTEM DIAGRAM



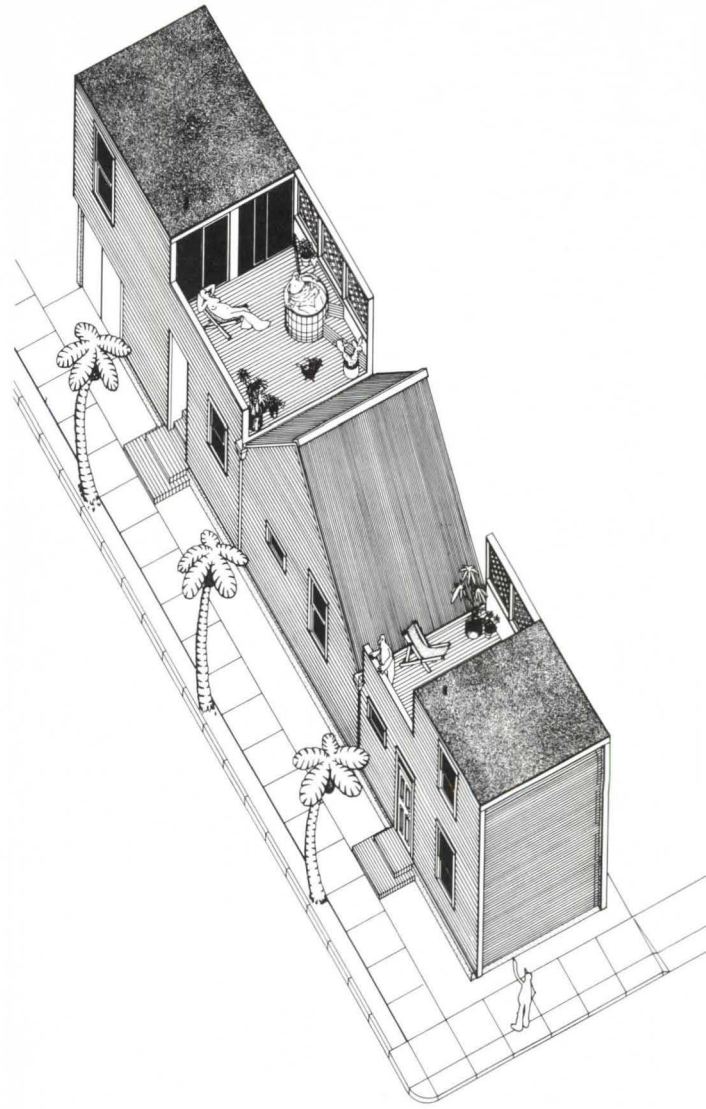


## Trombe Wall on a Rebuilt Duplex

The solar mass wall on this renovated duplex in Berkeley, Calif., supplies a reported 95 percent of the small rental unit's space heating needs. Corrugated Fiberglas is the facing of the collector, the storage medium is concrete and the room side is faced with quarry tile. Strips at the top and sides admit natural light and a partial canvas shade is used during the warmest months.

Built as a grocery store-apartment in 1911 and converted into a duplex in 1955, the wood frame structure already occupied 100 percent of its 14x78-foot corner site, so when it became economically feasible last year to totally renovate the neglected building in its improving neighborhood, there was no way to go but up. Architect David Baker of SOL.ARC gave each unit a rooftop deck, separated by a gable which provided privacy. He turned the attic of the smaller apartment into a sleeping loft and increased ceiling heights to make the rooms seem larger.

Active solar collectors on the south side of the gabled roof heat water for both units and for the hot tub on the larger deck. The owner's unit is heated by south-facing windows and skylights and by a heat-circulating fireplace.



*Before*







## Owner-Built from Recycled Bits

Mike and Claire Mease wanted a house constructed from recycled materials that would allow them some degree of energy self-sufficiency. They also wanted to pay for it out of their savings, which meant build-it-themselves, as much as possible. Claire, 28, teaches reading, and Mike, 30, is a self-employed environmental engineer. With virtually no prior experience, they did all carpentry, plumbing and electrical work, contracting only for foundation walls and the basement concrete floor.

The site, in central Pennsylvania near Harrisburg, contained an old house which the couple dismantled, using the wood for Trombe wall forms, scaffolding, sawhorses, etc. A nearby barn foundation yielded 12 pickup loads of stone used for the Trombe wall, which took them six weeks to construct. Forty feet long, 11 feet high and 14 inches deep, the wall is built on the site's downward slope and extends 20 inches up into the living area. The Trombe's untreated stones face the inside of the house; its outside was painted black and completely enclosed by a greenhouse. The six large south-facing windows above the Trombe and the five large greenhouse windows were recycled glass used as molds by the plexiglass industry.

The greenhouse rests on a bermed, 11-ton stone wall 30 inches high and a foot wide, and several hundred gallons of water are stored in this 40x8-foot space. The main purpose of the greenhouse is vegetable production.

Other energy-efficient features include air-lock entrances, a dark tile floor next to the large windows, minimized window area on the north, east and west, and siting into the base of a hill for protection on the west and north. Several hundred small pines and spruce trees will act as future windbreaks. Three wood burners are used as backup heat sources, including a Russian-style masonry fireplace in the basement.

The Meases moved in last April, although the house is still only 80 percent complete. Still to come are insulating shutters for the large windows and greenhouse, a brick wall in the kitchen for more heat storage and upgraded insulation. Their estimated total cost is \$37,000, exclusive of the Jotul stove and the lot.





## Integrated System and Structure

The Southside Community Center serves primarily lower income Mexican-American residents in San Marcos, Tex. Their hybrid system greenhouse retrofit, designed by David Bentley and Phillip Pommier of Passive Solar Designs of San Antonio and Austin, was intended to lower the center's heating bills, demonstrate to community residents how solar energy can be used in their homes and provide a classroom for greenhouse gardening.

Greenhouse heated air is cycled down through ducts inside each of the wooden laminated arches that form the greenhouse superstructure. Six one-fifth horsepower fans pull the air across a subfloor thermal storage exchanger made of 2,800 recycled gallon plastic jugs filled with water (photo at left was made during construction). Registers equipped with back draft dampers at the rear of the greenhouse return the air from the exchanger but prevent thermosyphoning which might tend to cycle heat out of storage. A second air loop through the exchanger supplies heat to the building. Summer overheating is countered by opening high and low vent windows in the greenhouse and by use of shading cloths to cut solar penetration.

The project, including column lamination and erection, was done by unskilled laborers, supervised by Pommier, under a federal job training program grant (CETA). Backing also came from the Texas Energy Development Fund, the Methodist Church World Food Hunger Program and local businesses and a training school, which provided materials and equipment.

The arches and radial glazing pattern are intended to reflect the local Spanish heritage and blend with the main building's Spanish detailing.



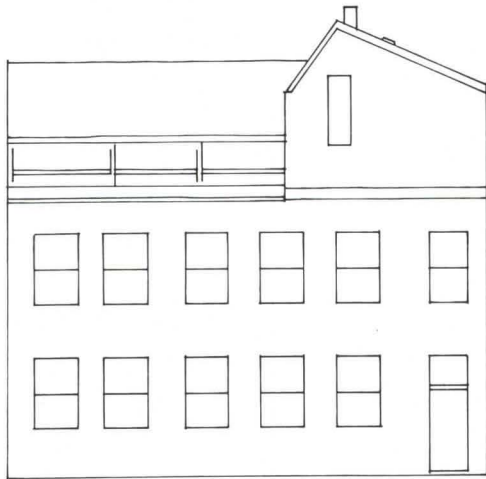


## Bonus Greenhouse at the Top

The owner/client wanted to add a rooftop deck and garden to his row house, so architect Richard C. Fredette III and engineer C. William Savery found it easy to convince him to erect a solarium/greenhouse—especially since it could be self-heating. Located on the end of a row in the South Street/Queen Village neighborhood of central Philadelphia, the brick house originally was three stories when it was built 100 years ago, but a fire in the early part of this century destroyed the top level. The greenhouse increased the 1,000 square feet of living space by 25 percent.

The building's long axis runs north-south, and the greenhouse is set at the northern end of the building. Fourteen feet wide and 16 feet deep, it occupies about one-third of the rooftop and is built in a New England salt box configuration. The south side has 123 square feet of insulated glass framed in cedar, the material used on the deck and exterior walls to the east and north. The west party wall is masonry construction to comply with city fire codes.

Thermal storage is in a 300-gallon water-filled oil tank and



## Shaped and Sited for the Prairie

C. F. Abercrombie shaped and sited this house in Salina, Kan., in accordance with Victor Olgyay's regionalized approach: The plan's north-south to east-west dimensions are 1.5:1 and the house faces 15 degrees east of true south.

To reduce both construction and energy costs, square footage was minimized with an open plan in which use activities overlap. Increased ceiling heights make the rooms seem larger and provide for deep penetration of the low winter sun. The southern facade is tilted 50 degrees for optimum winter sun exposure.

Overheating and glare were also of particular concern. The glass collector area was balanced with estimated heating loads and the square footage of the opening was reduced to the minimum. Adjusting the "skylids" and window insulation, opening or closing off the greenhouse, turning on the ceiling fan, and using the perimeter forced air system to distribute warmed air are the users' options for controlling overheating. In addition, heat producing areas (kitchen, washer/dryer, mechanical equipment, bathrooms) are located away from areas receiving direct solar heat.

Abercrombie's house received a 1978 design award in HUD's passive solar residential design competition.

six 35-gallon water-filled drums. A fan and duct system moves heated air down to the second floor when the greenhouse temperature exceeds 80 degrees.

The greenhouse is currently without movable insulation for night hours, the owner not wanting the responsibility of closing up his room every evening, and an automatic system proving too costly in the Philadelphia area. Bamboo shades cover the tilted glazing in the summer months.

Including the cedar deck and second floor renovations to accommodate a new stairwell, the project cost was about \$9,000 or \$40 per square foot.



Blaine Bonham



## Reoriented Toward the Sun

Architect Peter Pfister, AIA, and his wife Darlene bought this 1920 house a year and a half ago. They began construction of a passive solar retrofit in May and just completed the job before Minneapolis' cold weather set in this winter.

They found insulation virtually nonexistent in the wood frame house, so the first things they did were to blow polystyrene beads into the wall cavities, paint the interior surfaces with vapor barrier paint, upgrade attic insulation to a factor of R-40 and install insulating window shades, weatherstripping and caulking.

To take advantage of the sun and a potentially pleasant backyard, the Pfisters have reoriented the house toward the south-facing rear facade, which had few windows (right photo). (A "sun room" had been located on the house's northwest corner, overlooking the street.) The retrofit relies on two primary solar gain areas. At the southwest corner, a two-story solarium was built onto the kitchen/breakfast area. The first-floor ceiling of the solarium is a metal grille to allow deep penetration of sunlight into the kitchen and circulation of air. A 10-inch-thick concrete slab under the kitchen/dining room is used for thermal storage. Next to the solarium on the rear facade is the other primary collector point, a window bay at the stair landing incorporating 40 6-foot by 3½-inch phase change thermal storage rods.

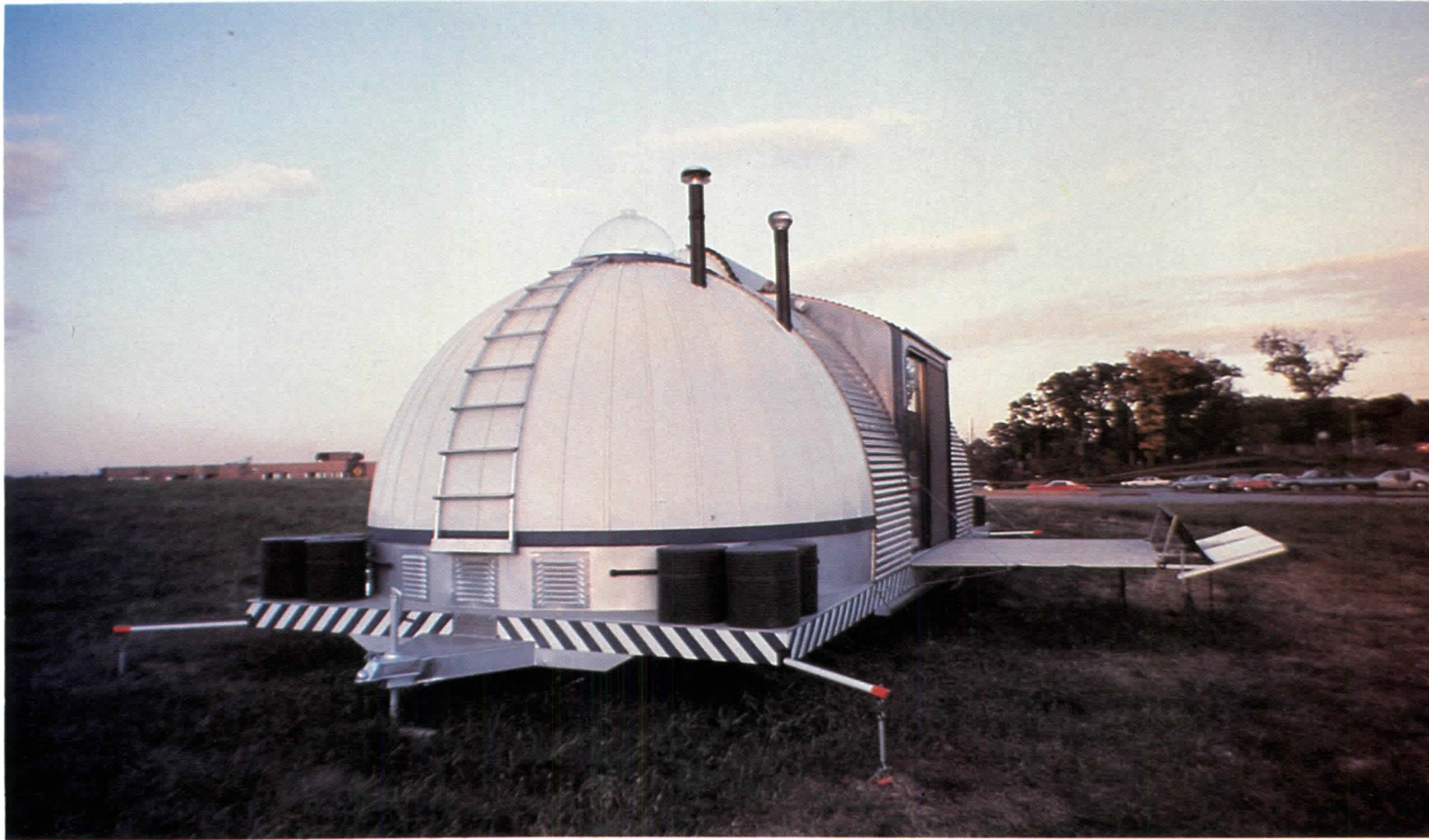
The existing furnace—a circulating hot water system with radiators—was retained. For solar heat distribution, the retrofit was designed so that heated air rises through the metal grate to the top of the solarium, where it circulates to the north side of the house through wall cutouts. A small fan draws warm air

from the ceiling of the central stairway and vents it to the north side of the downstairs rooms. Another fan draws cooler air from the floor of the living room and vents it past the thermal storage area at the stairway bay.

Monitoring of the passive solar component is being carried out this winter as part fulfillment of a Department of Energy grant that also supported the design and construction phases. The project also received a 1978 HUD passive solar design award. Pfister is a member of Architectural Alliance, a Minneapolis firm.







## Razzle-Dazzle Solar Trailer

Remember the trailer? Meet the Autonomous Dwelling Vehicle. Ted Bakewell III and Michael Jantzen of St. Louis have attempted the ultimate in "high advantage life support" without dependence on utility grids or fossil fuels.

According to their claims, it also is: transportable on existing highways, railroads, river barges and ocean freighters within all U.S. limitations on height, width and weight; adaptable to water floatation; capable of helicopter airlift and of being set up on uneven terrain; stable in high wind in full tie-down position;

independent from water and sewer hook-ups, chemical additives or nonecological disposal, and lightning protected.

The chassis is a reinforced mobile office frame; the exterior shell is aluminized steel agricultural silo components insulated with sprayed polyurethane foam. On board, there is a Clivus Multrum for wastes, a rain collector/water purification system, a scrapwood/waste paper stove with denatured alcohol burners, high frequency, low wattage fluorescent lights, a variety of wall pockets and under-floor compartments for storage and bins designed for recyclable metals and glass.

So what's solar? Two fan-assisted air collectors built into the exterior skin are coupled with a paracrystalline phase-change material for thermal storage; a greenhouse and controllable skylights provide additional passive solar gain. Backup is the wood burning stove. A photovoltaic panel, augmented by a reflector, provides electricity. Storage is in a 12-volt battery. Winter operation of the refrigerator relies on a through-the-floor heat exchanger. An active solar collector provides hot water, with backup from a waste incinerator. Compressed air from a foot pump and savonius wind generator drives a universal air motor used for such appliances as the kitchen blender and rotating shaft power tools.

Bakewell says it is mass producible at a cost competitive with existing travelers of comparable size.

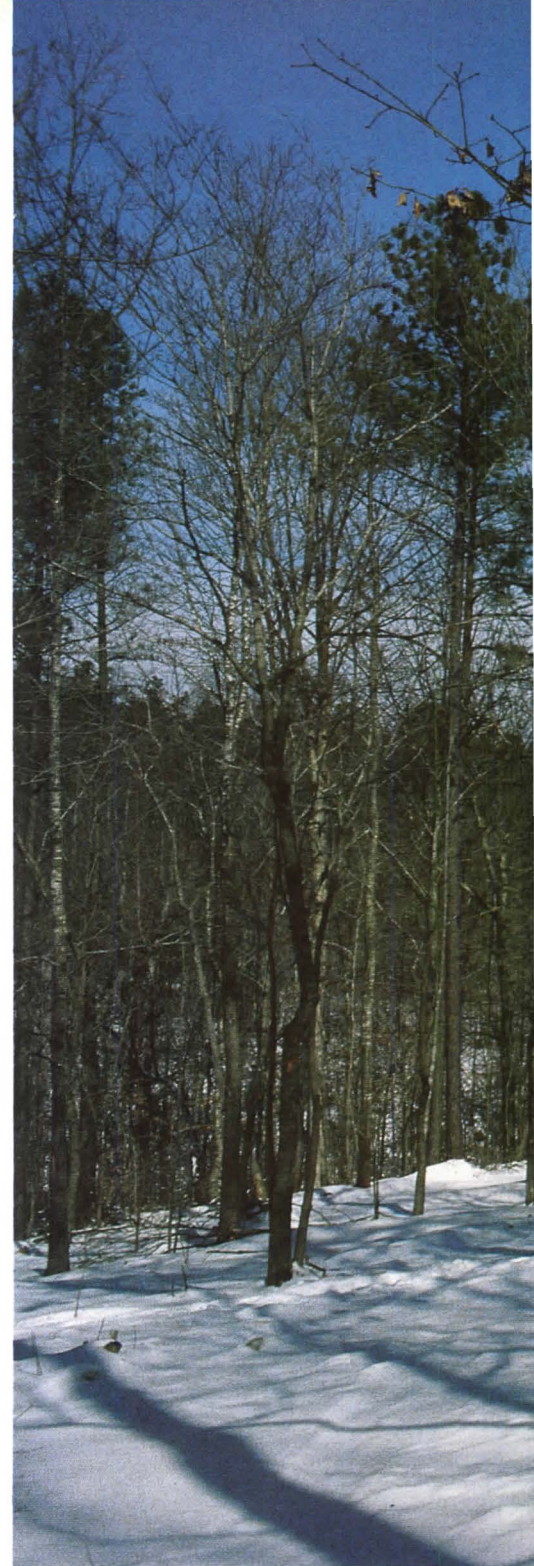


## Solar with Southern Accents

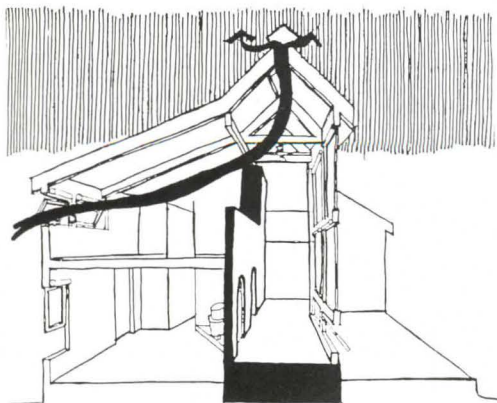
The three young designers of Sunshelter, a Raleigh, N.C., firm, have studied older houses in the Piedmont and have adopted some of that region's traditional design features and passive heating and cooling techniques. This 1,450-square-foot, two-bedroom house, derived from two-story I-shaped houses of the turn of the century, incorporates a greenhouse/solarium passive solar heating system. As was typical of the older houses, it is long, narrow and has wood siding, a metal roof and a deep, one-story porch across the north facade that wraps around the west and east.

Heat, stored in the floor and north masonry wall of the double-height solarium, radiates to the rooms behind. Large openings in this wall allow deep penetration of the winter sun into the rooms behind. Convection currents and ceiling fans distribute this heat, with a wood-burning stove next to the solarium wall providing backup. Vents in the first floor's ceiling allow circulation of warmed air. For cooling, the ceiling fans may be reversed to draw air up and out through ridge vents in the roof.

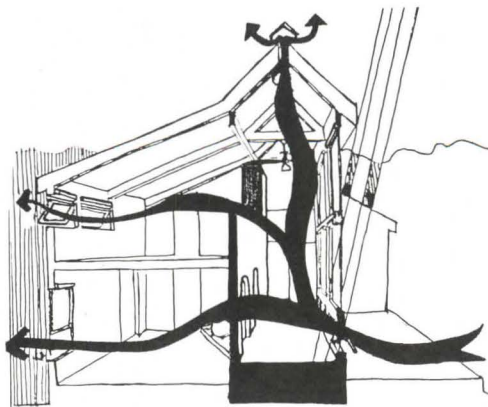
Sunshelter's designers, all recent graduates of North Carolina State University, are John Meachem, Bill Watkins and Mike Funderburk. □







Summer Night



Summer Day

*Above, the west and south facades. At far left, the solarium with its heat absorbing brick wall. The porch, partially screened, partially open, wraps around the back of the house.*



# INTERNATIONAL SYMPOSIUM on ISLAMIC ARCHITECTURE and URBANISM



## INTRODUCTION

King Faisal University in the Eastern Province of the Kingdom of Saudi Arabia announces with pleasure its intention to convene an International Symposium on Islamic Architecture and Urbanism in the winter of the year 1400 A.H. (January 5-10, 1980 A.D.). The Symposium is being organized to examine the implications of Islamic Culture on man-made environment.

It is the goal of the Symposium to bring together from all over the world a select group of talented people whose common interests are studying and shaping the human environment. It is hoped that the Symposium will reach new realms of understanding which will be of benefit to us all and consequently enrich our Islamic Culture.

The Symposium will be offered with the support of the Saudi Arabian Ministry of Municipal and Rural Affairs and the Ministry of Public Works and Housing. Participation in this, the first in an anticipated series of Symposia, will be limited to 200 scholars and practitioners.

## THEME AND OBJECTIVES

The theme of this Symposium will be "Defining the Islamic environment". Its purpose is to focus on: 1) The underlying principles and theories of Islamic space, form, structure, symbols and geometries, especially as they relate to religion, living patterns, social structure, economics, climate and technology, and 2) Approaches to the study of these relationships for the benefit of current architecture and urbanism.

## PROCEEDINGS OF THE CONFERENCE

The proceedings will be available in published form following the Symposium.

## LANGUAGE

The official language of the Symposium will be Arabic and English.

For further information concerning the Symposium, interested persons may contact:

Chairman,  
Technical Committee for the  
International Symposium on  
Islamic Architecture and Urbanism,  
King Faisal University,  
P.O. Box 2397  
Dammam, Saudi Arabia

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THE COLLEGE OF ARCHITECTURE AND PLANNING IS LOCATED ON THE DAMMAM CAMPUS. THE COLLEGE HAS A FIVE YEAR PROGRAM LEADING TO THE BACHELOR OF ARCHITECTURE AND PLANNING. GRADUATE DEGREE PROGRAMS ARE PLANNED IN THE AREAS OF URBAN PLANNING, ARCHITECTURE, URBAN DESIGN, LANDSCAPE ARCHITECTURE AND INTERIOR DESIGN. THE COLLEGE HAS AN INTERNATIONAL FACULTY REPRESENTING MANY DISCIPLINES.





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## Interns from page 47

new meaning and understanding of the profession. He or she gains the satisfaction of actually being involved in what we call architecture." The employer gets a high rate of return on investment, says Franco, "gaining a more mature and knowledgeable employee—one who can make a positive contribution and deal with the complexities of professional practice." The profession gains as well, Franco says, through the "upgrading and setting of higher standards." And the public benefits, gaining a "professional able to make significant contributions to the community of which he or she is a part. This is the ultimate benefit and is what architecture is all about."

Despite this enthusiastic endorsement by an intern-architect, no one would say that all IDP's problems have been solved, and even Franco points to "rough spots that have to be ironed out." AIA's long-range planning committee (chaired by Charles E. Schwing, FAIA, now the Institute's president) asked in its 1979 report if NCARB were "developing criteria that will unduly burden those who are seeking architectural licensing." The committee recommended that, prior to AIA's adoption of any public policy that would commit resources and accept responsibility, a study be made of IDP's effectiveness and cost. AIA's commission of education and professional development (chaired by Harold H. Tarleton, AIA), under whose care the Institute's role in IDP has been carried out, has also called for an in-depth evaluation. Funding for an investigative task force has recently been approved by the 1980 planning committee.

At AIA's 1979 convention, the preamble to a resolution, which passed, pointed to some of IDP's problems and difficulties. It stated that architectural interns are a "diverse group with varying educational needs," that the involvement of any "state bureaucracy" in a small business may lead to "serious economic inefficiencies," despite the best of intentions, and that maintenance of "uniform requirements for architectural licensing is essential to reciprocity." The resolution called for AIA to continue to coordinate with NCARB for the improvement of a voluntary IDP, but said that the Institute opposes at this time adoption by individual states of the criteria developed by NCARB as a mandatory prerequisite for licensing. At its September meeting, the board formally adopted the resolution.

It calls in effect for NCARB to re-examine the IDP practical training criteria, and NCARB is in the process of reanalysis. At its 1979 annual meeting, NCARB passed a resolution which essentially directs that a study be made to do two things: to define the knowledge, skills, abilities and functions necessary for minimum competence for the practice of architecture in this country, finding out what an architect does, and to re-examine all of NCARB's practical standards, examinations and IDP criteria based upon the definition of an architect.

The effects of these resolutions on states in the process of adopting all or part of IDP is not clear. For example, Robert Rosenfeld, assistant director of AIA's continuing education division who has been considerably involved in IDP, says that Indiana's state registration board, with the concurrence of the Indiana Society of Architects/AIA, is going ahead in adopting NCARB's practical training criteria. "They seem to be saying, 'We understand how the AIA membership as a whole may feel and what the convention resolution means, but we believe we have enough flexibility in our proposed rules that we would not preclude anyone from sitting the professional examination if he or she could not strictly comply in satisfying the IDP criteria. There would be latitude since the criteria are, more or less, guidelines for the board. We could, for example, recommend additional supplementary education in those categories where there is no way an intern could get direct or indirect actual experience in a subject matter.' But I think that most state boards and AIA components are aware of the intention of AIA's resolution to make sure that any potential problems in adopting the IDP training criteria are understood."

Rosenfeld says that two things appear to be happening. First, the requirement that an architectural firm give the intern necessary exposures in office practice "has been perceived as an economic problem, although the feedback received to date suggests that the opposite may be the rule. A basic concept of IDP says that exposure can be gained in one of three ways: by direct participation in an activity, by observation of that activity or through supplementary educational activities, if opportunities for participation and observation are not available in a specific office situation. For all 14 categories, however, supplementary education only counts for a portion of the total experience needed to satisfy a given category. So suppose, for example, an intern needed experience in some area which was not done in the specific office in which the intern worked, the firm would have to go out of its way perhaps to provide the experience. AIA's membership represents a diversity of firms across the country, and the smaller firms are obliged to say, 'We are all for giving the intern-architect as much advice and experience as we can, but we have to run our offices, too.'"

The second problem comes from the perception of the primary beneficiaries of IDP—the interns and the students who some day will be consumers of IDP. "They are asking NCARB to reconsider the practical training criteria because it may be difficult to receive all those kinds of exposures, and that may prove to be restrictive," Rosenfeld says. "The candidate may not be able to take the licensing examination. So many interns and AIA associate members are asking for more flexibility to be built into the system. But there is also a vocal group of interns who say that whatever the situation, the IDP requirements are justified because they finally establish a quality standard for those who wish to practice architecture. The group believes that there simply must be acceptable exposure in those 14 essential areas of practice."

The IDP subcommittee of AIA's continuing education committee met in Portland, Ore., last July. Chaired by John H. Bryant, AIA, the subcommittee passed two resolutions, one of which asks that the continuing education committee recommend to AIA that it "continue to commit resources and accept responsibility for the AIA elements" in IDP. "Anything less than continued enthusiastic support" for the elements, the resolution said, "will ensure the program's failure."

The subcommittee, by resolution, also asks AIA to "urge NCARB to intensify its current re-evaluation of both the concept and operative details" of the practical training criteria. The other resolution asks that AIA "develop and expand" the elements "which provide critically needed advice and supplementary education to intern-architects" and also that AIA "urge the implementation of these essential services by the various components" as a "voluntary" IDP, irrespective of the adoption by individual states of any criteria developed by NCARB as mandatory prerequisites to licensing.

One of the more important elements of AIA's commitment to IDP are the SupEdGuides, which, according to reports from users, have proved to be useful to both the intern-architect and to the AIA associate member. AIA's goal is a set of 30 SupEdGuides, 27 of which are now available. (Six of the guides scheduled for publication last February were revised by the subcommittee and have only recently been published.) In addition, the subcommittee hopes in 1980 to select two or three related areas of activity, such as solar energy and barrier free design, as subjects for new SupEdGuides.

Rosenfeld points out that "many interns who come out of years of formal education don't want to go back to a formal classroom. They want to get in and work, but also to somehow create opportunities that can expand upon the specific exposure being gained in an office. This is where the interplay of the SupEdGuides comes in—to work with an architect and really explore in greater detail rather than just sitting at a drawing board.

*continued on page 71*



# BOOKS

## Lively Discussion About Design Competitions

**Design Competitions.** Paul D. Spreiregen, FAIA. New York: McGraw-Hill, 1979. 310 pp. \$24.95.

This is a how-to book as well as a forceful plea for architectural design competitions. Order it now if you ever expect to enter a competition, because when you most need it, it will be out of print. Spreiregen gives all of the relevant documentation, a rundown of the major competitions and his own reasons for believing that the competitive route is to everyone's advantage—the architect, the client, the profession and the public. Along the way are crisp judgments and insights. This is the only book of its kind on this important subject.

This seems the place to note a book Spreiregen's bibliography seems to have missed—Peter Collins' *Architectural Judgement*—probably because of its Canadian origin. It is especially valuable because it deals with the actual work of juries, and examines several of the more significant competitions in greater depth than Spreiregen does. I must note also that Spreiregen's book is not well proof-read, especially in the proper names—Saterlee, Olmstead, Hallette, Earnest Flagg, Addelot, Loose, et al., are among the howlers. *Frederick Gutheim, Hon. AIA, Washington, D.C.*

**Courtyard House in China: Tradition and Present.** Werner Blaser. Boston: Birkhäuser (P.O. Box 2007, Cambridge, Mass. 02139), 1979. 111 pp.

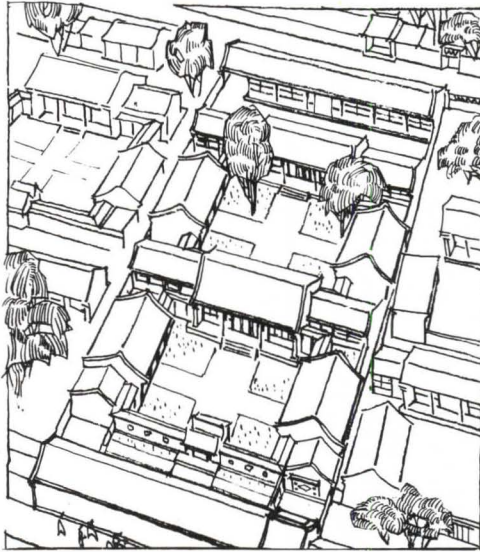
Werner Blaser, the author of this attractive book, describes the renovated courtyard houses and imperial parks in Peking and the garden complexes in Soochow. The courtyard house, dating back to the Han dynasty, provides an enclosed garden that closes out the outside world. The drawing above of old typical one-story courtyard houses in Peking shows how the houses make the most of scarce land and yet give each occupant the advantages of a garden landscape.

As Blaser says, the dream of a single-family house won't be realized for many people. "If the price of land is too high, we must make do with very small lots. A garden in front of the house is too expensive and so we import it into the

house where a tree can grow into the open sky from one's own inner courtyard."

With brief text and very handsome photographs, Blaser shows how, since 1949, the old courtyard houses have been beautifully restored and converted to new uses such as kindergartens, day care nurseries, shops, restaurants, parks. In the residential streets of Soochow, he shows how the inner courts, "secluded and protected," provide for privacy despite crowded conditions.

The Chinese, he says, "have never made a clean break with tradition. . . . Once a form has been found and has justified its existence, it is faithfully pre-



served because it already embodied a certain degree of perfection in its initial conception." There is much in the book that will give the contemporary American architect ideas about how to make the most of scarce land in cities today and yet give people a personal refuge.

An art exhibition, organized in connection with the publication of the book, will tour American cities and universities.

**Color Source Book.** Margaret Walch. New York: Scribner's, 1979. 103 pp. \$55.

This historical sourcebook should be helpful to anyone who is concerned about color. Walch describes 48 different historical palettes, illustrating each of them with color swatches based on works of art and artifacts. There are, for example, the restful greens of porcelain of the Chinese Sung Dynasty in contrast with a variety of red glazes. There are also the blues and golds of Persian miniatures, the rainbow-like colors of Japanese woodcuts, the

lovely padshah blue of Persian carpets, the warm pinks and subdued reds of Piero della Francesca, Josiah Wedgwood's blues, Art Deco's smoky white, chrome, gold and pale yellow and Pop art's harsh primaries and colors of a chrome-oriented society. The book is fascinating to read and to look at in its span of color expression over the cultural history of mankind.

**The Use of Color in Interiors.** 2nd edition. Albert O. Halse. New York: McGraw-Hill, 1978. 152 pp. \$24.95.

The first edition of this popular book was published in 1968. This expanded edition contains new sections on the conservation of energy through new concepts in lighting; the application of new paint systems, floor and wall coverings and plastic patterns; recent color for safety marking recommended by the Occupational Safety and Health Administration; recent developments in color systems research and the use of color for identification purposes. Also included in this edition are about 30 new color plates and many black and white illustrations. Those familiar with the first edition will know that the book is comprehensive in its coverage of the unique contributions of color to the interior environment.

**Bizarre Architecture.** Charles Jencks. New York: Rizzoli, 1979. 80 pp. \$9.95.

Bizarre architecture, if "properly" bizarre, can't very well be classified, says Jencks. It defies the "well-carved pigeon-hole, for the obvious reason that bizarre means unconventional and unlikely. If you can place a bizarre building in a classification system, then it immediately loses some of its magical property." Nonetheless, Jencks does use a form of classification in this book which stresses the humorous side of architecture. He even coins a classification—"animalorphic," which he calls a "mixed architectural metaphor where body and vegetative images cohabit." For example, Eero Saarinen's Ingalls Hockey Rink at New Haven, Conn. "This whale at Yale undulates its dorsal fin and, under its black jet nose, opens a big grin for the 3,000 spectators to enter."

Bizarre architecture, says Jencks, "can really be quite good architecture." In the 80-page book, 15 of the pages are given over to an introduction; the remainder of the book is devoted to photographs (in color) and brief captions. □



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## The Institute from page 24

ance. . . .” Yet another said that employers of interns “are hesitant” to let the intern in on such matters as client relations, billings, fees, taxes and the like. “We all learned design and working drawings in school and are now refining those skills, but we now need to find out what the business side of it is all about.”

One respondent said that he knows about IDP but hasn't become involved because of “costs and the type of architectural firm I am associated with. . . . They pay me to do a specific job within the firm—contract documents—and are not about to pay me to write specs, do field work or anything that I'm not particularly efficient or experienced at. . . . Therefore, any program of private study that I can participate in at home, after work, is the type of continuing education program I need.”

Another said, “It is a bad feeling to know that the profession of architecture does not ‘watch out’ for its new potential architects. Both the medical and law professions have very clear guidelines. . . . about the procedures to attain professional status. What's more embarrassing to the profession is that most architects in practice have no idea themselves what is going on as far as licensing requirements go. Therefore, an increased burden is placed on the shoulders of the intern-architect.”

The survey, says Rosenfeld, has helped in planning efforts for 1980 associate programs. For example, a series of professional development seminars for associates will be included in AIA's 1980 convention program, and delivery systems will be expanded in order to provide for more individualized learning resources.

## Abercrombie Joins the Journal; Depta, Musica on AIA's Staff

Stanley Abercrombie, AIA, has joined the AIA JOURNAL as senior editor, architecture. Previously editor of *Abitare in America* and of *Interiors* and senior editor of *Architecture Plus*, he maintains an architectural practice in New York City.

Abercrombie has a B.S. degree from the Georgia Institute of Technology, a B. Arch. degree from the Massachusetts Institute of Technology and a M. Arch. degree from Columbia University. He has 12 years of design experience in architectural offices including work with John Carl Warnecke & Associates, Marcel Breuer & Associates and private practice with Paul Vieyra. He has taught at Harvard University's graduate school of design, Pratt Institute, Columbia University and the New Jersey School of Architecture. He was a Loeb fellow, Harvard graduate school of design in 1974-75, and

received the Jesse H. Neal editorial achievement award in 1975 and a residential design citation from the New York Chapter/AIA in 1974.

Richard C. Depta, AIA, of Minneapolis is the Institute's new director of energy information. He was previously a building design energy specialist with the Minnesota energy agency. Prior to that he was in professional practice for more than 17 years including four years with Setter, Leach & Lindstrom and four years with Parker Associates. He served as chairman of the energy conservation and building design committee of the Minnesota Society of Architects/AIA. He holds B. Arch. and B.A. degrees from the University of Minnesota.

AIA's new director of federal agency liaison is Frank Musica, who earned B. Arch. and MBA degrees from the University of Notre Dame and a law degree from the Notre Dame law school. He has worked with ArchiSystems International as an executive assistant, with the Legal Assistance Foundation of Chicago, the Chicago Architectural Assistance Center and the Indiana Public Interest Research Group and was a business/legal intern with AIA.

## News/Practice

### Depletion of Gypsum Deposits By the Year 2000 is Predicted

“Worldwide gypsum deposits will be used up before the end of this century,” says Zigurds Grigalis, AIA, in a recent report to the Institute's regional development and natural resources committee. The Lexington, Ky., architect, who bases this appraisal on a U.S. Bureau of Mines estimate of gypsum resources and the current demand, foresees shortages springing up as suddenly as the gasoline lines of last summer.

Used extensively over the past 20 years for walls, ceilings and in many special applications where an inexpensive and easily installed material is called for, gypsum board is present on almost every construction job. Because it is so commonplace, the material no longer commands much attention, and heaps of scrap sheet are thrown out with debris. Some of the pieces are as large as half a sheet and some are even full sheets with a single erroneous cut or a crack across a corner, observes Grigalis, who estimates that roughly 10 percent of the material shipped to job sites is thrown out in scrap.

Much of the remaining world reserves of gypsum are located outside the U.S., which in 1976 produced only 18 percent of the world's total and imported 26 percent of its net supply. In case of shortages, it would be difficult to substitute other

materials for gypsum. Many Underwriters Laboratories approved framing assemblies rely on gypsum products, and the alternatives would have to be tested over a long period of time, Grigalis believes. It would also take time for them to gain acceptance of designers, builders and consumers.

Finally, Grigalis issues a plea for conservation of gypsum. “If we begin now and rationally examine all readily available alternatives, we may be able to reduce the current trend in consumption and thus allow ourselves more time to develop lasting alternatives,” he says.

## Milwaukee Opens a Competition To Develop Downtown Lakefront

The city and county of Milwaukee are sponsoring a national competition for a comprehensive plan for 200 acres on Lake Michigan adjacent to the city's downtown. The area is south of Lake Park, designed by Frederick Law Olmsted, and is the site of Eero Saarinen's War Memorial and Art Center. The competition is intended to “generate ideas and a public sense of the unique potential of this important urban site.”

The site, identified by community and professional leaders as an area of “special environmental/architectural/urban concern,” is also the location of a proposed expressway as well as “controversial private development and many unsightly temporary uses,” says a spokesman for Mayor Henry W. Maier's office. The proposed project will include transportation systems, landscaping and recreational, cultural and industrial uses.

There is a first prize of \$25,000, a second of \$15,000, a third of \$7,500 and three honorable mentions of \$3,000 each. The competition is open to all registered architects, registered landscape architects and certified planners. Entry forms for the competition are available from: Lakefront Planning and Design Competition, City Hall, 200 E. Wells St., Room 102, Milwaukee, Wis. 53202, (414) 278-2200.

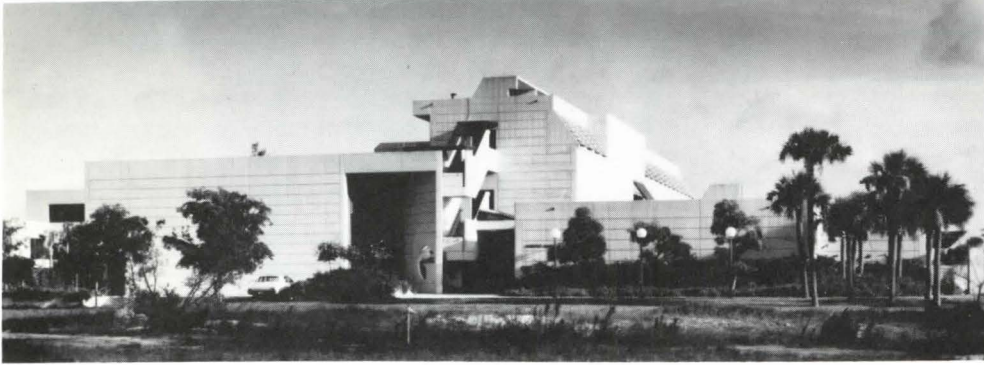
## Precast Concrete Institute Jury Names Eight Building Awards

A jury of architects and engineers (chaired by Ehrman B. Mitchell Jr., FAIA, president of the Institute), has selected eight structures as top winners in the buildings category of the 1979 Prestressed Concrete Institute awards programs. The winning entries, said the jury, were selected for “esthetic expression, function and economy using precast and prestressed concrete.”

Winners in the buildings category are:

- Latter Center West, Metairie, La.





## HUD Surveys Section 8 Program, Finds Irregularities, Violations

Serious problems exist in the administration and delivery of HUD's section 8 leased housing program, reports HUD's office of inspector general. Based on a survey, the report concludes that HUD is being overbilled for assistance payments, some tenants are understating incomes, other tenants are being overcharged and some units do not meet housing standards, among other problems.

Section 8 was authorized by the U.S. Housing Act of 1937, as amended by section 201 of the Housing and Community Development Act of 1974. The primary

- (Skidmore, Owings & Merrill, Houston).
- Washington Trust Branch Bank, Spokane, Wash. (Tan/Brookie/Kundig, Spokane).
  - Radnor Corporate Center, Buildings Two and Three, Radnor, Pa. (Geddes Brecher Qualls Cunningham, Philadelphia).
  - Safeco Insurance Companies of America Divisional Office Building, Spokane (Walker McGough Foltz Lyerla, Spokane).
  - Multifunction Building Two and Central Utilities Building, Florida International University, Miami (Dalton Dalton Newport, Cleveland, photo above).
  - City of Miami Heavy Equipment Service Facility (Morton, Wolfberg, Alvarez, Taracido & Associates, Miami).
  - Terminal Two Parking Structure, Toronto (Malton) International Airport (design consultants: a joint venture of FENCO Consultants Ltd., Toronto, and E.A. Barton & Associates, Ltd., Willowdale, Ontario).
  - U.S. Postal Service Facility, Caguas, Puerto Rico (Jorge Del Rio, AIA, Rio Piedras, Puerto Rico).

based upon the Galleria's "excellent examples of entrepreneurial skills, development leadership, application of professional design and its stewardship of land use and improvements which could be adopted or modified as an example for future developments."

## Houston Galleria Complex Cited As 'Pioneer in Land Utilization'

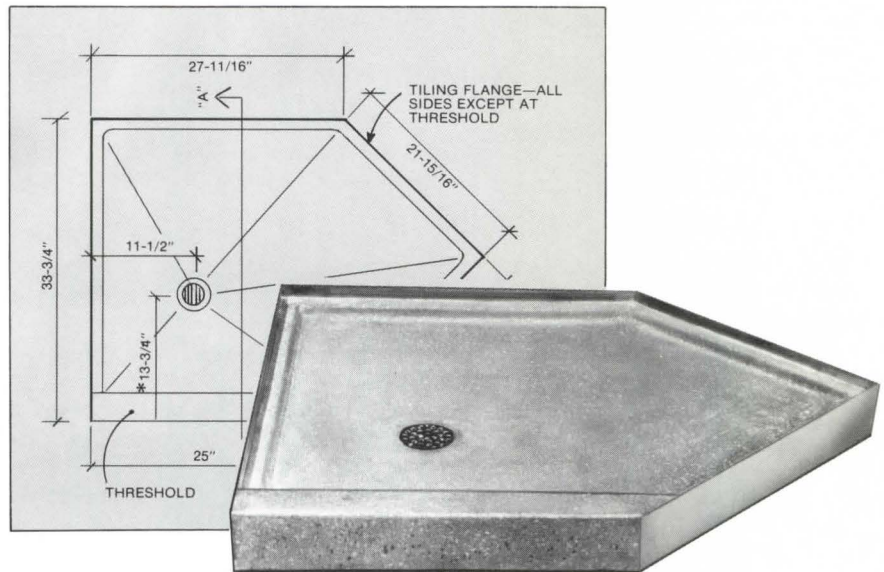
The Urban Land Institute has selected the Galleria in Houston as the recipient of its first award for excellence, to be given annually "to recognize a development project in the U.S. or Canada that embodies those elements of quality and innovation that are worthy of emulation and provide a guide to the future."

Michael F. Kelly, ULI's president, said that the Galleria is a "pioneer in land utilization," noting as well that the multiuse complex, containing a hotel, office tower, retail and commercial establishments, theater, athletic and social club, indoor skating rink and structured parking facilities, incorporates an "urban cultural force within a suburban setting."

Designed by Hellmuth, Obata & Kassabaum, Inc., and Neuhaus & Taylor, the complex was developed by Gerald D. Hines Interests.

The awards jury, which was chaired by Alan M. Voorhees, dean of the college of architecture, University of Illinois, Chicago, said that the final decision was

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goal is to enable lower income families, through housing assistance payments, to obtain "modest housing" in the private sector that is "decent, safe and sanitary." A family of four whose income is less than 80 percent of an area's median income can rent a dwelling at between 15 and 25 percent of its income. This is adjusted for family size. HUD pays the difference between that amount and the amount the landlord is asking. There are three types of programs: loan management where mortgages are HUD-insured or HUD-held; new construction and substantial rehabilitation where developers find financing and rent to low-income families, and existing housing, where public housing authorities determine that a family is eligible for low-income housing and help them find it.

"We are 95 percent certain," says the report, "that between 14 and 16 percent of the 8,100 section 8 housing projects have management irregularities, 12 percent contain housing quality standards violations and 31 percent contain serious housing quality standards violations that affect the health and safety of the tenant or the livability of the units."

Some HUD officials question the validity of some of these figures, but concede that serious problems exist which warrant

prompt attention. They maintain that the survey's 47 percent and 31 percent figures on violations are too high, due to an inaccurate methodology in the survey (only a small number of projects were examined and then the number of deficiencies were estimated for all projects). The other projections are more accurate, say HUD officials. "The survey was highly useful and it turned up a lot of serious problems in the program," said Tony Freidman of HUD's housing policy staff.

As of Mar. 31, the survey's starting point, there were 8,100 projects with 650,000 units in the section 8 program. The survey covered 514 projects with a total of 98,000 occupied units.

Congress has appropriated funding for approximately 250,000 units in 1980, of which about 90,000 will be rehabilitated units and 160,000 newly constructed.

The survey disclosed management irregularities involving project owners or managers and public housing authorities (PHAs) at 72 of the 514 projects reviewed (an estimated 14 to 16 percent of all projects). Some of the problems are that project owners and managers require tenants to make side payments in excess of the tenant's gross family contributions, collect assistance payments for vacant units occupied by other than section 8

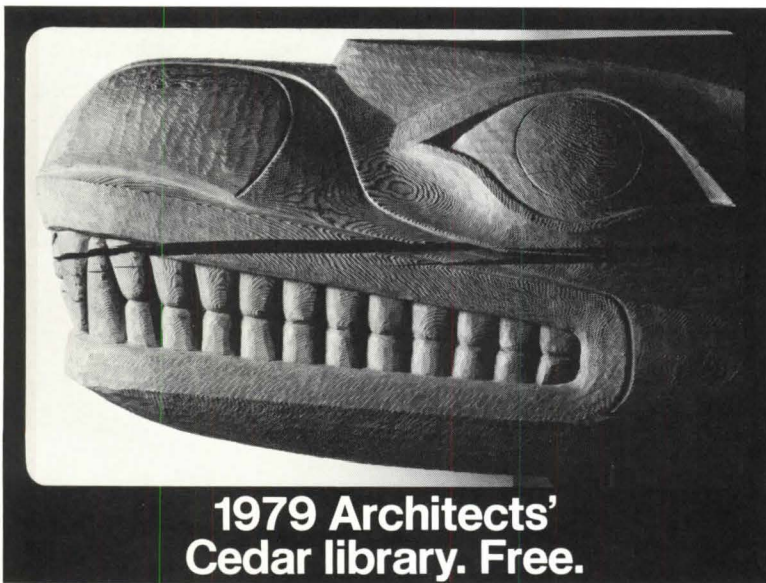
tenants, work with or induce tenants to establish false eligibility or increase improperly the amount of assistance and bill for housing assistance payments for units occupied rent free by project employees.

The tenant irregularities cited (61 of the 514 projects reviewed, 12 percent of the total section 8 projects) include tenants understating reported income, not reporting all sources of income, falsifying family composition and income and not reporting all persons living in the unit.

The highest incidence of problems was substandard units. The surveyors found violations such as unsafe heating systems, no fire exits other than the main entrance, lead-based paint hazards and exterior doors and windows which cannot be locked.

"HUD could be paying as much as \$23 million per month in housing assistance" for substandard units, says the report. And of this \$23 million, an estimated \$18 million per month could be paid for units which have serious quality standards violations that affect the health and safety of the tenants or the livability of the units. One hundred and nine of 345 units inspected fall in the latter category, which the survey translates to 31 percent of the existing housing units. Problems include

*continued on page 70*



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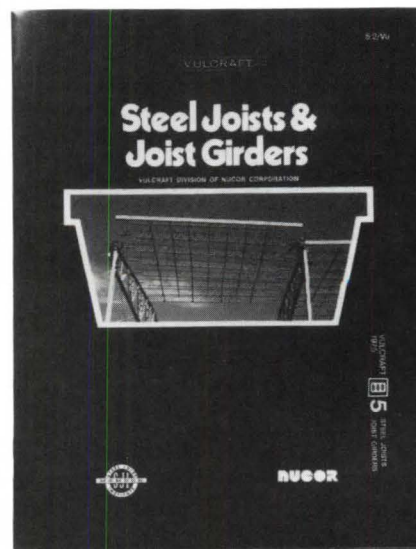
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### Government from page 68

outside walls leaning, buckling or sagging; ceilings, walls and floors unsafe or unsound; signs of leaks, sagging or buckling which indicate the roof is not weather-tight; inadequate ventilation in kitchens and bathrooms, and damaged, broken or inoperable windows.

Although the surveyors "cannot project the rate of occurrence nationwide for administrative deficiencies," they conclude that there is reason for serious concern. Examples of administrative deficiencies include inadequate systems for verifying income, assets and expenses, incorrectly calculated gross family contributions and housing assistance payments, lack of tenant recertification on a timely basis and allowance of contract rent plus utility allowance in excess of fair market rent limitations.

The report recommends that HUD increase and improve its monitoring to detect these deficiencies, ensure that project owners and managers and PHAs have and use adequate systems to achieve compliance with HUD prerequisites, revise handbook requirements and issue a program handbook for PHAs and develop and implement stringent penalties for participants who violate HUD regulations.

HUD has already required repairs of units with housing quality violations. It is

examining administration procedures of handling tenant applications, recertification and the vouching process to minimize the potential for error, waste and fraud, and has developed an information and training program for project owners and managers and redefined guidelines for field office management review, among other things.

### Competition: Urban Design

HUD has announced a 1980 program of environmental design awards in three categories: (1) project design, including buildings, structures, open spaces and other projects completed with direct or indirect HUD assistance; (2) urban design concepts, including design plans for the improvement of a large area or "physical systems" of a community such as waterfronts, transportation corridors and residential neighborhoods, and (3) urban design assistance, which deals with "the art of decision making, with organization and communication and with implementing the resulting quality design."

Architects, planners, engineers, local governments, public agencies and other design professionals, builders and developers are invited to submit entries for work undertaken with financial aid from HUD and completed after Jan. 1, 1974.

Entries should be postmarked by Dec. 31. A jury of interdisciplinary professionals in the fields of natural and social sciences and the environmental design arts will evaluate the entries and make recommendations to HUD. Professional adviser is Andrew F. Euston Jr., AIA, senior urban design program officer at HUD.

Additional information and entry blanks may be obtained from: National Awards for Urban Environmental Design, HUD, Washington, D.C. 20410.

### Competition: Rail Related Work

As part of the Department of Transportation's efforts to "encourage well-designed facilities and equipment," the Federal Railroad Administration has initiated a design awards program.

Awards will be given for "outstanding examples" of public and private railroad related design achievements completed since 1974 or currently under development. The six categories are: (1) urban design, architecture, landscaping and graphic arts; (2) intermodal passenger terminals; (3) multiple use of railroad rights-of-way and joint development; (4) planning or development adjacent to a rail facility that reinforces the railroad function; (5) preservation of historic or

*continued on page 72*

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### Interns from page 63

The SupEdGuides are not a manner of learning in the formal sense; rather, they are to be used to actually *supplement* the day-to-day experience an intern gains in an office."

The continuing education committee is also "taking a hard look at what other kinds of educational opportunities we can provide AIA's associate members," says Rosenfeld. "How can we better key them into the network of programs that corporate members are using?" A recent survey of approximately 4,000 associate members' educational needs will assist in defining appropriate subjects, and the professional development seminars at the 1980 AIA convention will include, for the first time, a series of programs designed specifically for associate members. Included might be a review session for Section A (design problem) of the NCARB professional examination.

Rosenfeld, who has reported on IDP in various states, believes that its growth has been relatively slow—and perhaps it should be. "Some states which went into the process of adopting the program, getting everyone in line very quickly, are experiencing difficulty," he says. "The states that started more slowly, testing out some of the concepts to see, for example, how many advisers are needed, how the sponsor and intern relationship really works, whether the program works better in a small or large office and giving consideration to the experience settings for interns—those states are now more successful."

And on the part of the entrant to the profession who may want to become involved in IDP, what is required? There are options. In states where IDP has been adopted, the intern can go the "official" route and start a record with NCARB. The intern would communicate with an IDP coordinator, with the contact and adviser assignment usually coming from the local AIA chapter. There is a modest application fee for those who wish to enroll formally for expenses in establishing a NCARB council record and for recordkeeping.

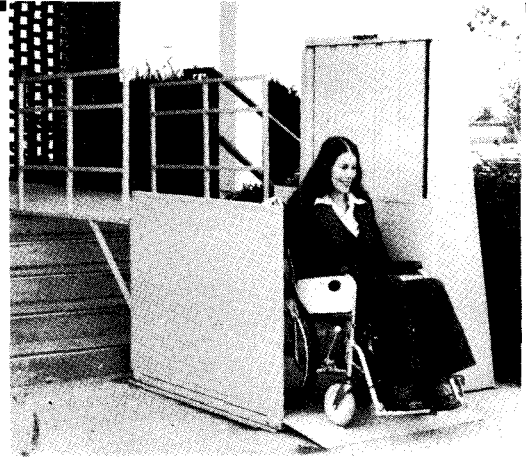
If the architectural school graduate does not wish to enroll formally in those states which have adopted IDP, the local AIA chapter will still assign him or her an adviser. Such candidates for the registration examination will not be denied the opportunity to gain valid exposures. Anyone may obtain AIA's supplementary education materials. AIA will continue to provide the education programs and advisory services to those who wish to avail themselves of the opportunities of IDP by either official or informal participation.

"There is no reason," Ellison points out, "that AIA's state and local components cannot put into effect the AIA elements of IDP—the advisory system and the supplementary educational opportunities. Whether there is a formal IDP or not, these are programs and services that components ought to provide their associate members. No component has to wait until there is a universal or official statewide IDP to use the SupEdGuides or to set up an advisory system. AIA chapter offices should also serve as a home for informal peer group activity of intern-architects and associate members.

"It is interesting to speculate that one of the offshoots of IDP is that finally AIA has something to offer its associate members. That's one of the tremendous assets for the Institute that IDP has afforded. All you have to do is look at recent membership statistics—there is a significant increase at the associate level. I don't know for sure to what extent we can attribute this increase to IDP interest and activity, but there may well be a direct connection. It would appear that IDP—or at least the AIA advisory services and supplementary education programs—is being viewed as an effective Institute response to the needs of interns and associates. We think we have a good foundation on which to build."

As Mark Twain once observed, "Soap and education are not as sudden as a massacre, but they are more deadly in the long run." Both have that amazing quality of bringing about change—almost always for the better. □

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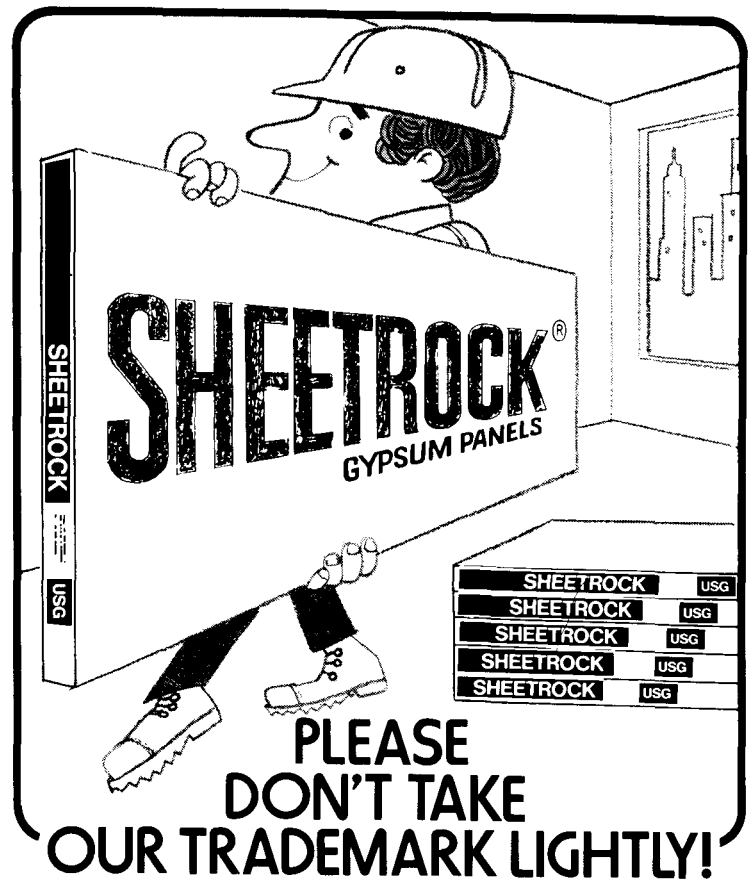
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cultural sites, or natural features, or maintenance and enhancement of operating rail facility, and (6) bridges, overpasses, tunnel approaches or other structural features or support facilities.

Entries must be postmarked by Jan. 15. For more information, contact the Department of Transportation, Federal Railroad Administration, Associate Administrator for Policy and Program Development, 400 Seventh Street S.W., Washington, D.C. 20590.

## 1976 Tax Incentives Reported Effective Rehabilitation Factor

The incentives contained in the Tax Reform Act of 1976 "are making a positive impact on the revitalization of our cities and towns," says a recent report of the Heritage Conservation and Recreation Service entitled *Federal Tax Provisions to Encourage Rehabilitation of Historic Buildings*. Section 2124 of the act provides a five-year amortization of rehabilitation costs and accelerated depreciation; deductions are not allowed for demolishing historic structures and replacement buildings are limited to straightline depreciation.

By May 1, HCRS had certified 753 rehabilitation projects to receive tax benefits, representing \$424 million in investment funds. About 80 projects were denied certification. Among the rehabilitation projects have been hotels, breweries, commercial and industrial buildings, apartment houses, schools, railroad stations and mills. Most of the projects are in historic districts either in downtown commercial areas or in older residential neighborhoods adjacent to central business districts. Two-thirds of the projects had budgets larger than \$100,000.

About 54 percent of the certified projects provide for housing units. Of the 4,074 housing units approved, 80 percent were previously vacant or in commercial or industrial use. This, HCRS says, represents a net increase of 3,302 new housing units—nearly 35 percent for use as low-income housing. Displacement has been "insignificant."

Among the other findings:

- Preservationists and taxpayers alike are "strongly" in favor of an extension of the tax incentives beyond 1981, when they are to expire under the current law.
- The incentives are causing an increased awareness of and interest in the preservation of the existing building stock.

• In recent months, there has been an increase in projects undertaken specifically to take advantage of the incentives; many owners say that the tax incentives "made the difference between an uncertain economic future and financial success."

• From 1978, statistics show that applications for certification for the incentives come from both large-scale developers and smaller businessmen.

• Requests for certification have risen from three a week to 30 a week within the last year, and it is estimated that this may increase to 50 a week by the end of 1980.

• The National Register of Historic Places, administered by HCRS, has shown an increase in the number of properties registered from 1,731 in fiscal year 1976 to 2,382 in fiscal year 1978, bringing the total number listed to about 19,000.

The report also includes descriptions of 18 rehabilitation projects certified for completion under the tax provisions. They range from Carr Mill in Carrboro, N.C., to the Marquette Building in Chicago.

Single copies of the report are available without charge from HCRS, Washington, D.C. 20243.

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## DEATHS

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**Juliet A. Peddle**, Terre Haute, Ind.  
**James Grote Vanderpool, FAIA**, Santa Monica, Calif.  
**Daniel Carr Whitehead**, Oak Lawn, Ill.

## BRIEFS

"Noise Control for Designers" is the title of a free-loan, 20-minute slide/audio program, produced by the National Bureau of Standards' center for building technology. Contact: Modern Talking Picture Service, 5000 Park St. N., St. Petersburg, Fla. 33706.

Applications for study in the history, theory and criticism of architecture, art and urbanism will be accepted by the center for advanced study in the visual arts, National Gallery of Art. Recent recipients of the doctoral degree (or its equivalent) as well as more experienced scholars are eligible. Scholars will be provided with a monthly stipend and additional allowances for research materials,

housing and travel. Applications will be mailed upon request to: Executive Assistant, Center for Advanced Study in the Visual Arts, National Gallery of Art, Washington, D.C. 20565.

The Georges Pompidou National Center of Art and Culture in Paris, designed by the London-based firm of Piano + Rogers (see Aug. '77, p. 22), is such a smash hit that it now attracts more visitors than the Eiffel Tower and the Louvre combined. Visitors to the center have averaged 21,000 a day—50,000 on some Sundays.

Edward M. Burke, AIA, and his wife Elizabeth have published a pictorial essay entitled "Seattle's Other History: Our Asian-American Heritage," which reveals the role of the Asian-American in the growth of their home town of Seattle. The booklet is available for \$3.25. For information contact: Edward M. Burke, AIA, Burke Associates, 622 S. Washington St., Seattle, Wash. 98104.

An architectural study tour of France will be conducted in January by the Boston Architectural Center. The tour will leave Boston on Jan. 12 and return on the 27th. Contact: BAC, 320 Newbury St., Boston, Mass. 02115.

Lawrence P. Lammers, AIA, and Owen B. Hardy have received the first annual award of merit from the American Association of Hospital Consultants for their collaboration on the book *Hospitals: The Planning and Design Process* (see Nov. '78, p. 70).

The National Organization of Minority Architects has elected Leon Bridges, AIA, of Baltimore as its president. The immediate past president is Andrew L. Heard, AIA, of Chicago; first vice president is Paul S. Devroux, AIA, of Washington, D.C.

H. H. Waechter, AIA, of Creswell, Ore., was invited by the Fine Arts Academy in Berlin to assist in the preparation of a commemorative show on the work of the late architect Bruno Taut, under whom Waechter studied and about whom he has written extensively. Taut's 100th birthday anniversary will be celebrated at the 1984 international building exposition in Berlin.

Career position: Iowa Chapter/AIA, Des Moines, seeks an executive director. Salary negotiable commensurate with experience. Send letter of interest and résumé prior to Jan. 28 to Search Committee, Iowa Chapter/AIA, 512 Walnut St., Des Moines, Iowa 50309. □

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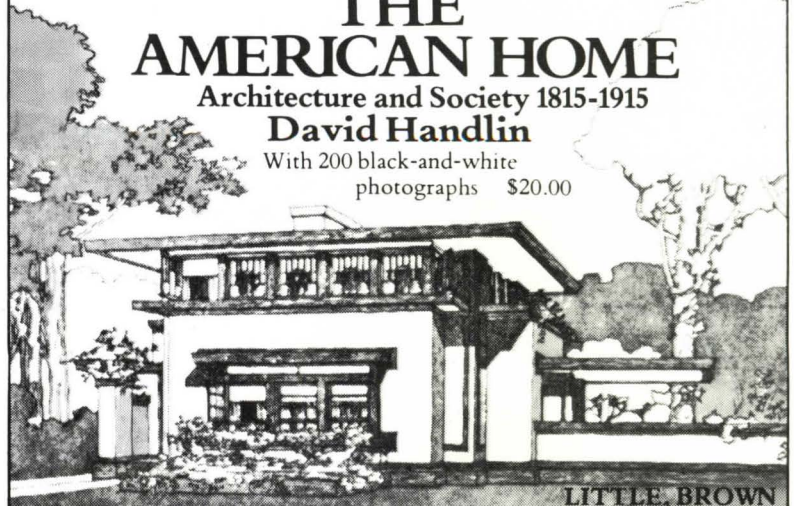
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