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**space-saver**  
**WATER COOLER**

Choice of 5 Colors

**New appearance. New size.** GE's new wall mounted Space-Saver combines both to bring you the latest in water cooler appeal.

**Take appearance:** There are no louvers on the front to detract from the clean, modern lines. It's sleek, it's smart, it's stylish. Five beautiful cabinet finishes to choose from: Mocha Linen or Pebble Charcoal textured vinyl side panels with Ironstone vinyl front panel; Desert Mist or Regal Silver baked enamel side panels with Ironstone enamel front panel; or all stainless steel. A handsome combination for any decor.

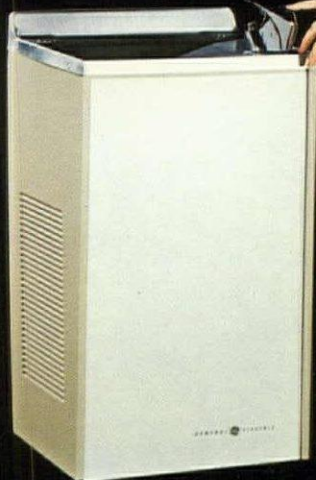
**Take size:** It's 26 inches high, 15 inches wide and extends a mere 12½ inches from the wall . . . less than any other wall mounted cooler in the industry.

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For more specifics on the sleek new Space-Saver, check the Yellow Pages for your local GE water cooler representative. Or write GE, Dept. 761-41, 14th and Arnold Streets, Chicago Heights, Illinois 60411.

**GENERAL**  **ELECTRIC**

**new**  
**space-saver**



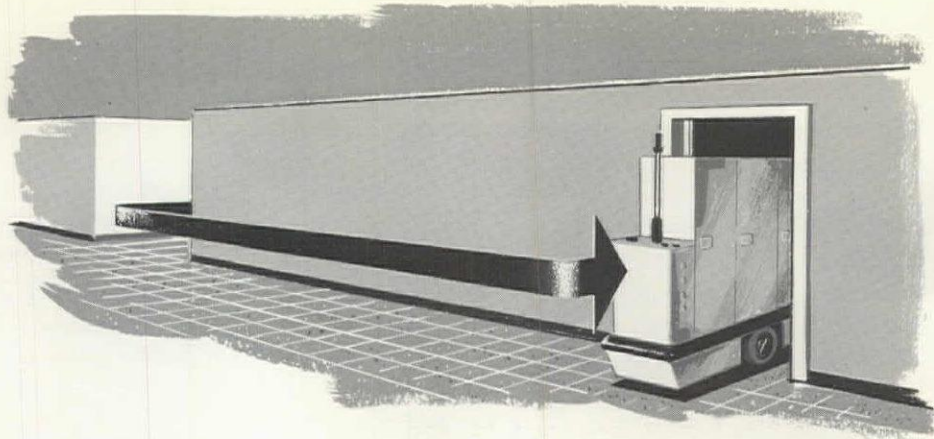
Thin translucent marble panels, lighted from within, turn a building into a glowing jewel at night. The natural veining stands out dramatically and gracefully against the softly lighted background. And during the day, marble's classic beauty lends dignity and permanence to the structure. Day or night, it holds people spellbound.

Translucent marble can be used expansively in curtain wall construction or discreetly as an accent. In either case, initial cost is surprisingly low and maintenance is practically nil. As for colors, you have a wide range of whites and pinks from which to choose. For a Technical Report on translucent marble, including design details and case histories, look in your Yellow Pages for the nearest MIA Certified Member. MARBLE INSTITUTE OF AMERICA, PENNSYLVANIA BUILDING, WASHINGTON, D.C. 20004.



**Cast  
a  
spell  
with  
translucent  
marble**





# Dover innovates elevator to handle electronically guided service carts in new hospital

ELMBROOK MEMORIAL HOSPITAL, Brookfield (Milwaukee), Wis.  
OWNER: Sisters of Misericordia, Montreal, Que.  
ARCHITECT: Mark F. Pfaller Associates, Inc., Wauwatosa, Wis.  
PROJECT DESIGNERS: Mark A. Pfaller, AIA, and Thomas G. Meuer, AIA.  
GENERAL CONTRACTOR: Becker Construction Company, Inc.

Five Dover geared traction elevators including special electronically controlled elevator to handle automated service carts; two Dover Oilraulic Elevators, sold and installed by Northwestern Elevator Co., Inc., Milwaukee.



Driverless carts which will distribute food, medicines and supplies throughout the Elmbrook Memorial Hospital, Brookfield, Wis., will ride a special elevator designed and built by Dover.

The electronically guided carts will be programmed for pre-determined delivery routes, following a high-frequency wire buried in the floors. To go from one floor to another, they will call the special elevator electronically, enter when the doors open, exit at the proper floor and proceed to a preset stopping point, all without human assistance.

The labor-saving distribution method was designed by Amsco Systems Co., Division of American

Sterilizer Company, Erie, Pa. An adaptation of Dover's Computamatic® automatic control system was developed to handle the special needs of the elevator required.

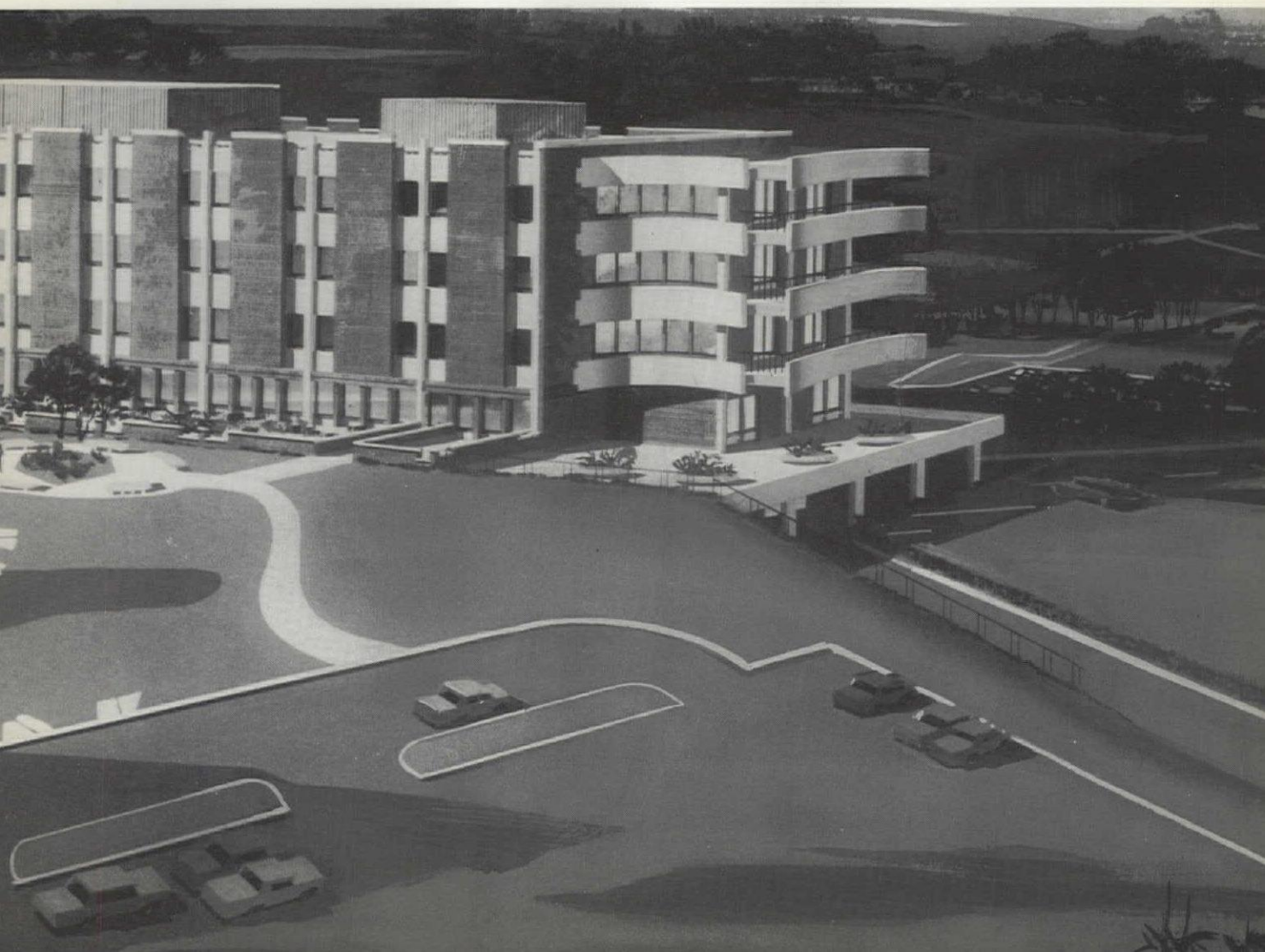
Six other Dover Elevators, both Electric and Oildraulic®, are being installed in this ultra-modern hospital scheduled for completion in mid-1969. The initial building will be six stories, but provision is made in design and construction, and in the Dover Elevators, for addition of three floors at a future date.

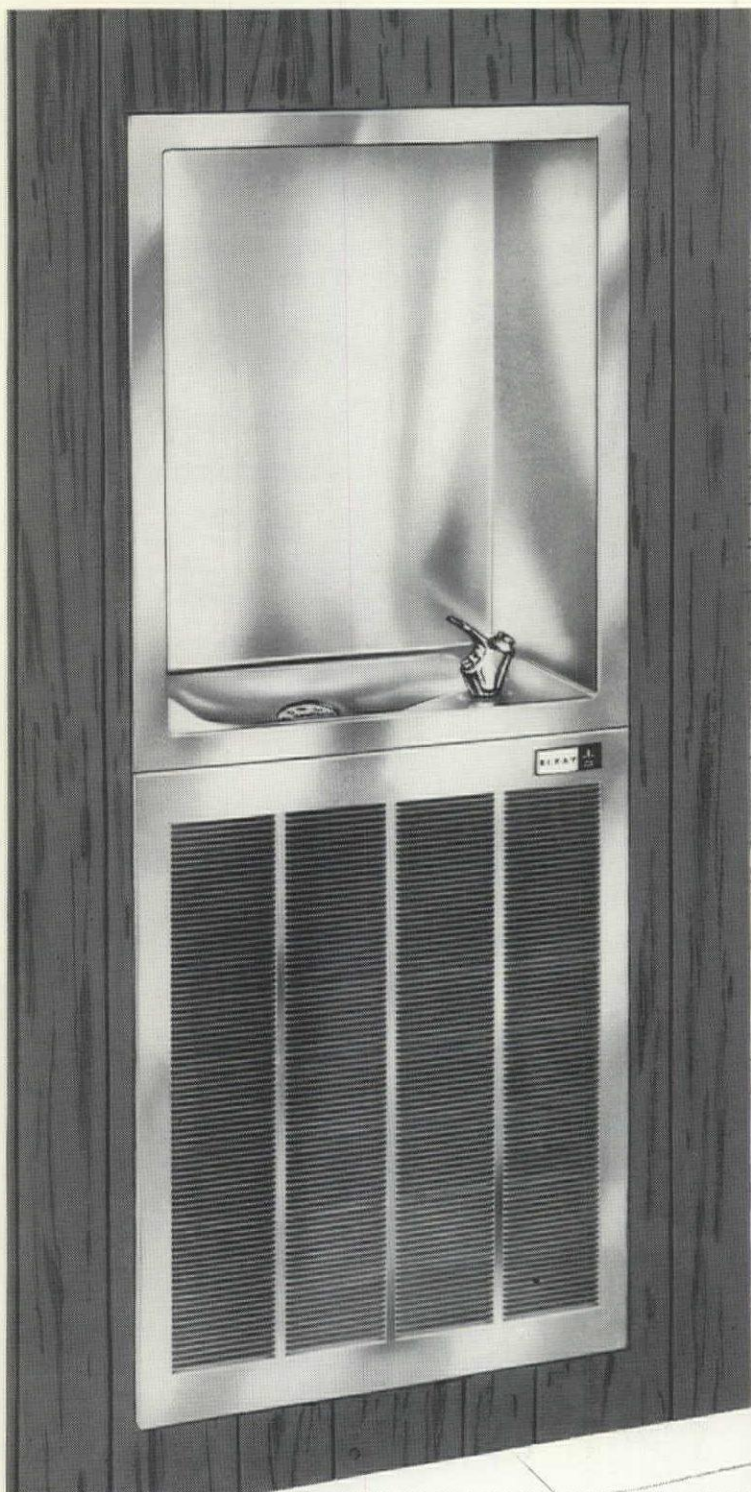
Dover's wide experience in elevators for the special needs of hospital service can be helpful to you in planning a new or remodeled hospital or an addition to present facilities.

Contact your local Dover Elevator representative for assistance, or write for catalogs. Dover Corporation, Elevator Division, Dept. E-2, P.O. Box 2177, Memphis, Tenn.—38102



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see our catalog in Sweet's

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**Cover:** The Great Escape, by Clovis Heimsath, AIA

# Asides

**Next Month:** Where does today's architectural student stand on national and professional issues? Everywhere. But one of three articles in a presentation on this subject delineates general classes of students, catalogued by their attributes toward the future. Another presents the views of a student leader, and the third shows the social consciousness of the young as revealed by the Reynolds prizes.

Also in May: a warm and kindly portrait of William Wilson Wurster, FAIA, the 1969 Gold Medalist; a thoughtful exposition on health care facilities in the inner city; a look at the airplane as a tool in professional practice.

**Heard That Song Before:** The mills in Manchester, New Hampshire, are a mile-long chain of native-clay brick built along and between two canals by the Merrimack River, as reported in the AIA JOURNAL last July. With construction starting in 1831, they once housed the world's largest single cotton firm, the Amoskeag Manufacturing Company, but closed in 1936 after the textile industry had moved south.

The mills were offered as scrap brick that same year but were instead subdivided for the use of smaller companies in search of inexpensive plants. In 1961 the Manchester Housing Authorities commissioned Arthur D. Little, Inc., to study economic problems in the city. Little's report said the mills, even with extensive improvement and upgrading, would never be an asset from an esthetic point of view. Consequent efforts were first thought to have saved the mills, but we now learn from *Fortune* (Jan. '69) that demolition of a large part of the complex began last fall; the rest is doomed to go this spring and the canals will be filled. R.E.K.

PHOTO & ART CREDITS: 10 — Morley Baer; 42, 43, 44 — Clovis Heimsath, AIA; 45 — Don Normark; 46 — Bill Maris, courtesy Conde Nast; 47 — Larry Mersel; 48 left above, center; right — Julian Neski, AIA; 48 left below — Hans Namuth; 49 left above — Richard Steele Photography; 49 right — Parlin Color Co. Inc.; 50 left — Lionel Murphy; 50 right — Steinmetz; 51 — Edmund Y. Lee; 52 left above — Andrew Pine; 52 right — Frederick C. Baldwin; 53 right above — Don E. Wolter; 54 left above, center — Patrick King; 54 left below — Gordon Peery; 54 right — Utah Travel Council; 55 left — Fred Habit; 59 left below — Gil Amiaga; 71, 72, 73 — Harris Armstrong, AIA; 75, 76, 77, 78 — J. Vorel.

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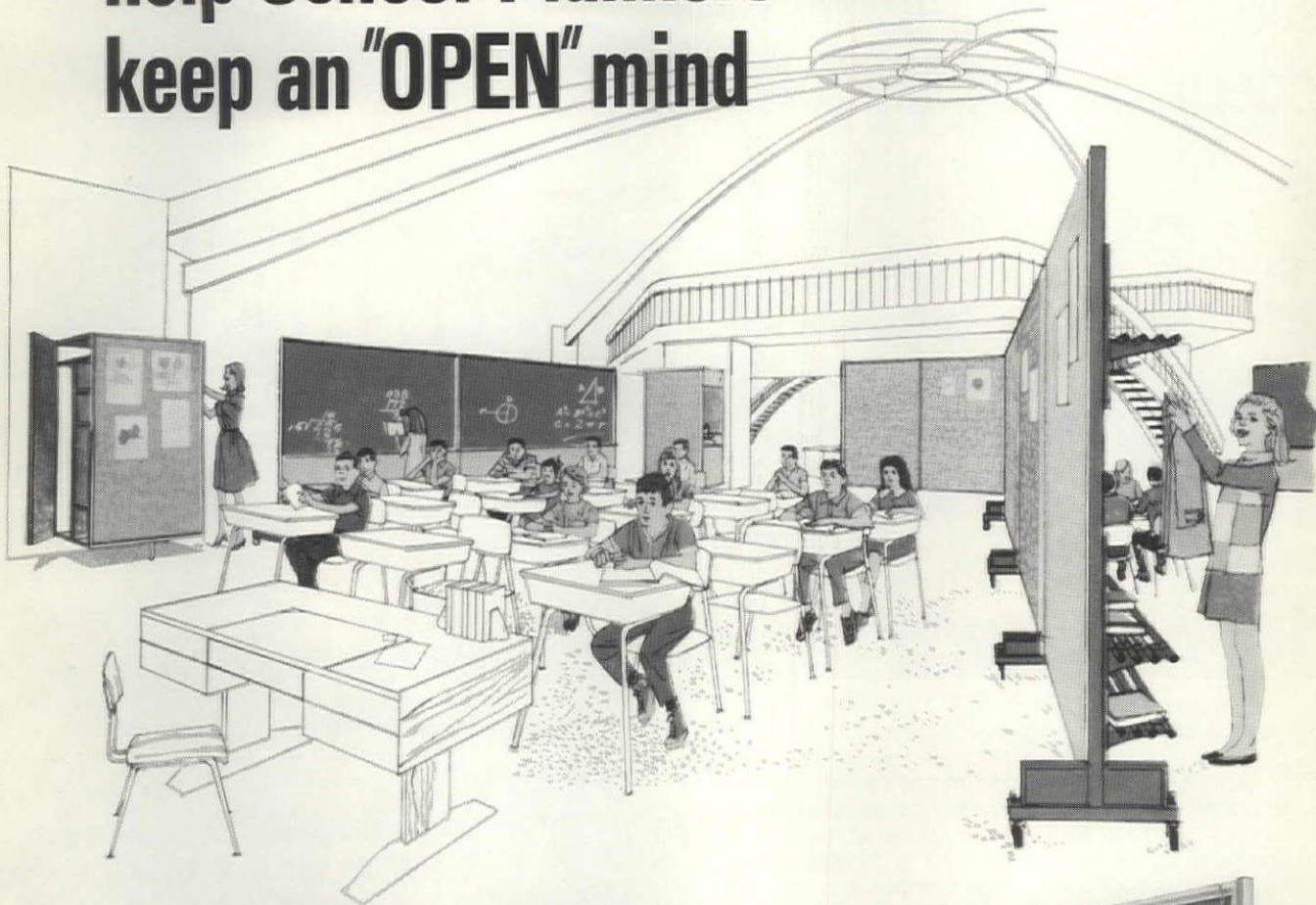
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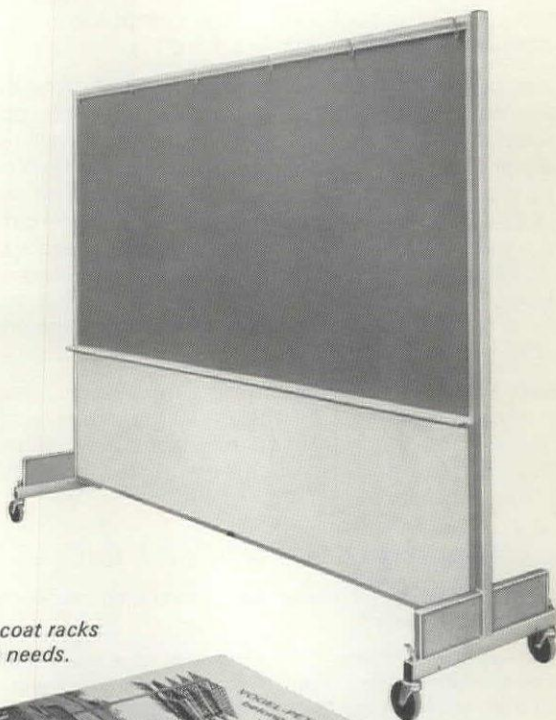


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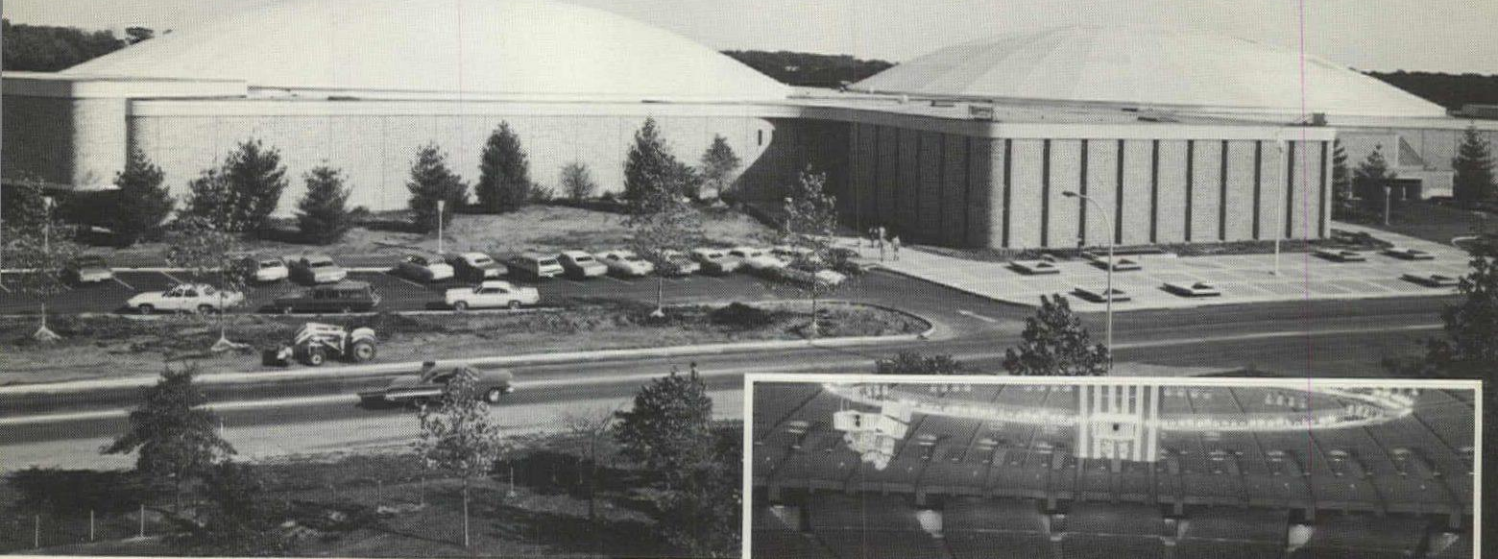


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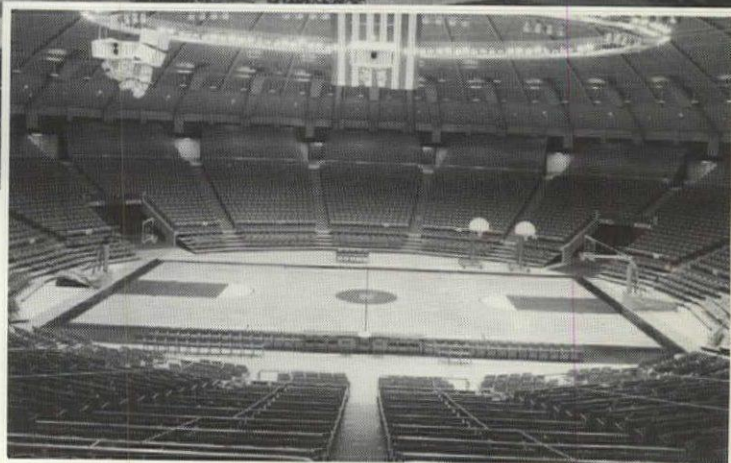
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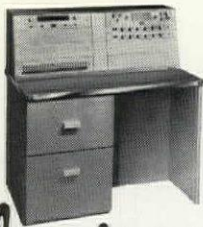
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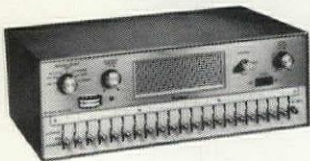
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Circle 304 on information card

### Newslines from page 10

program. However, it was evident that sides were being chosen before the Senate hearings got underway.

The National Association of Home Builders, which called for an embargo on all exports of timber, lumber and wood products and an emergency increase in the allowable cut on federal timberlands, issued this statement through its president, Eugene A. Gullledge:

"Some lumber producers and mortgage lenders are charging all the markets will bear. The escalation of prices and interest rates is becoming unbearable.

"Narrow selfishness is being substituted for reasonable profits," continued the North Carolina builder. "And the victims are the American families seeking homes and apartments."

But lumbermen denied the homebuilder accusations that they were charging all the traffic will bear.

**Better Management:** James D. Bronson, president of the National Forest Products Association, rebutted: "It is obvious that the charges . . . were designed to arouse the public, the government and Congress to action in what is promising to become a critical roadblock to our national housing ambitions.

"All citizens should be aroused, but they should seek corrections in the proper place—the federal forests of the United States which contain 60 percent of the entire nation's softwood timber supply," declared Bronson, a director of Boise-Cascade Corp. of Yakima, Wash.

"Nothing would be served by indulging in recriminations with Mr. Gullledge or any other homebuilder. We should devote our time to coming up with positive improvements in the intensive management of our national forests. Such practices will release timber supplies necessary to produce the stocks of lumber and plywood required to meet our national housing goals."

## US, Mexican Architects Move Toward Reciprocity

Architects of the United States and Mexico have taken a giant step toward reciprocal registration that could lead to much freer professional movement between the two countries.

An agreement in principle was concluded after a two-day meeting

in Mexico City between representatives of the National Council of Architectural Registration Boards and the Mexican College of Architects. Additional meetings will be required to work out details, said NCARB President Howard T. Blanchard, AIA.

The Garden City, Kan., architect noted that a similar agreement between the US group and United Kingdom professionals has reached its final stages and is expected to be signed this year.

A joint statement signed by US and Mexican architects said that "both representative groups recommend this proposition, for professional advantages for both parties are evident."

Detailed conversations would be initiated if approval is obtained by the governing committees of both organizations, it was added.

## New Town Session to Ask: Frontiers or Failures?

"New Towns: Frontiers or Failures?" will be examined in depth at the spring conference of the Building Research Advisory Board/Building Research Institute in Chicago, April 29-30 and May 1.

The sessions at the Sheraton-Chicago Motor Hotel will be based on experiences from six types of new towns: suburbia, leisure, commerce, retirement, industry and the older new towns such as the greenbelt towns covering location, planning, financing and design.

Among the speakers will be Robert E. Simon, founder and past president of Reston, Va., now run by Gulf-Reston, Inc.

## Four Crash Seminars Set For Licensee Prospects

Architectural License Seminars, a Los Angeles-based study-aid organization, next month will conduct crash sessions in four cities.

The one-day seminars will be held in Chicago, May 17; New York, 18; San Francisco, 24; and Los Angeles, 25.

The program, which has been endorsed by the Southern California Chapter AIA, offers correspondence courses covering all seven examination subjects given by the National Council of Architectural Registration Boards.

Inquiries should be directed to Box 64188, Los Angeles, Calif. 90064.

*Continued on page 18*

### **Videne paneling.**

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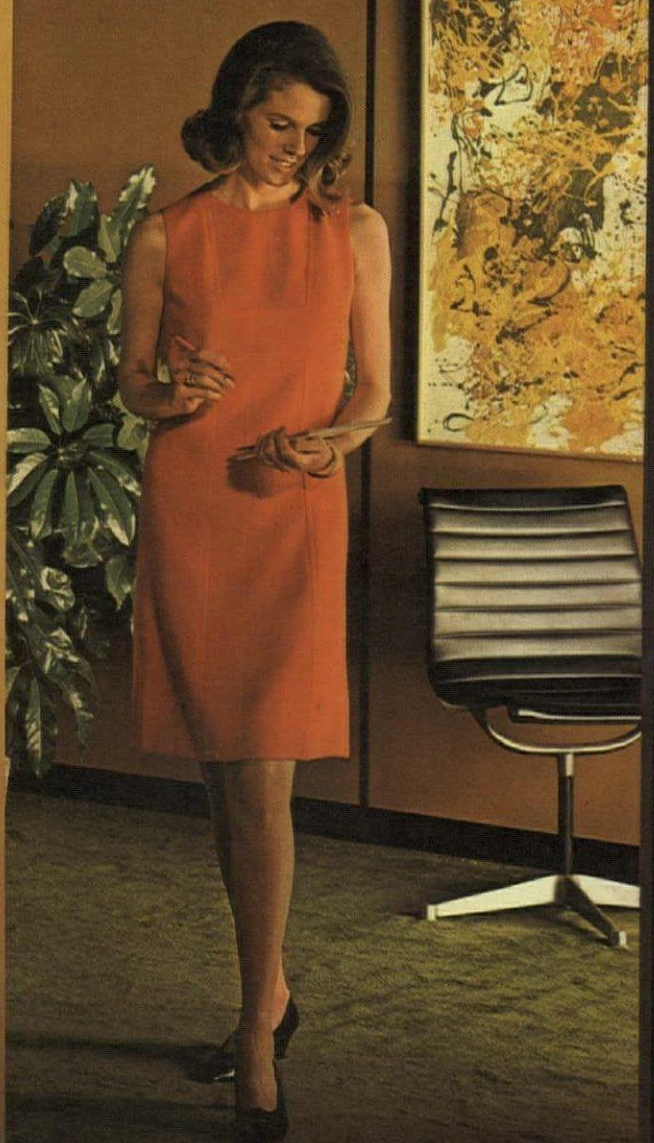
Videne is also nice to live with. Its tough, thermo-plastic finish is clear and laminated tightly to wood. So all you see is the warmth of wood. With no peeling, crackling, chipping or fading. Yet Videne wipes off with a damp cloth.

Ordinary cleanser does away with scratches.

The Videne wall paneling system comes in 15 wood-grain patterns and 32 solid colors and patterns. And you can get matching Videne-surfaced doors, movable partitions and moldings.

Write for full-color folder to Modern Laminates, Inc., 535 East 32nd Street, Holland, Michigan 49423.

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**Videne.  
Looks like wood.  
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Saves like crazy.**



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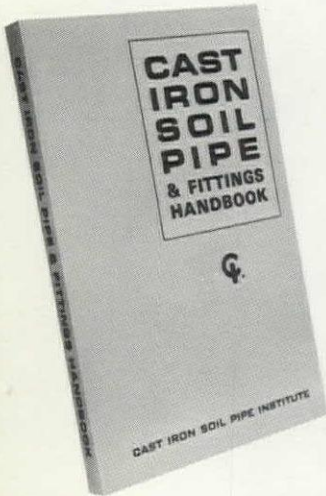
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Newslines from page 12

## Court Building Is Subject Of Competition; Task Force Continues Its Study

If the nation's judicial system leaves something to be desired, as many Americans seem to believe, its physical facilities don't fare much better.

There are specific efforts on several fronts, however, to help remedy the latter.

Oregon, for example, will get a design for a new Supreme Court Building on the Capitol Mall in Salem as the result of a two-stage competition for architects registered in the state. The winning design of the Eugene firm of Architectural Associates (Donald B. Driscoll, AIA, Richard G. Williams) was selected from four final entries from an initial field of 35 participants.

Nationally, the joint AIA/American Bar Association Task Force on Courtroom Facilities is now in the second half of its two-year study being carried out at the University of Michigan under a Ford Foundation grant. Standards developed in this study will be published for the guidance of governmental agencies, courts and architects.

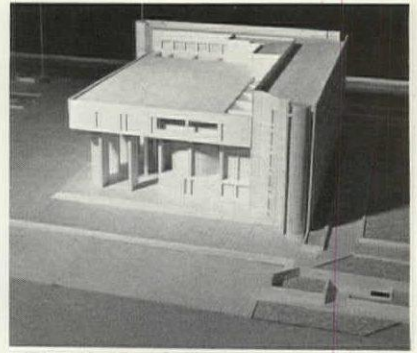
But in response to requests for interim information prior to next year's release of study findings, the task force has assembled a package of background materials available through *Judicature* magazine. It can be obtained for \$3.75 by writing Dori Dressander, managing editor, at 1155 E. 60th St., Chicago, Ill. 60637.

Other finalists in the Oregon competition were the Eugene firm of Wilmsen, Endicott, Greene & Associates and Portlanders Charles H. Colburn, AIA, and Marvin Witt, AIA.

The winning design is to occupy a two-block site just north of the State Highway Building and the Labor and Industries Building. It is to be the final building in a mall complex and in importance will be second only to the Capitol.

There is to be considerable below-grade off-street parking as well as landscaping to make the whole complex a complement to the mall.

Jurors for the competition were Fred Bassetti, FAIA, Seattle; Gerhard M. Kallman, AIA, Boston; George W. Qualls, AIA, Philadelphia; Herbert M. Schwab, former circuit judge, Portland; and George



Top design of Oregon competition.

W. Gleeson, dean, School of Engineering, Oregon State University, Corvallis. The competition's professional adviser was Charles E. Hawkes, AIA, of Salem.

## UIA Congress Sessions To Stress Housing Needs

The 10th World Congress of Architects, to be held in Buenos Aires Oct. 19-25 under the theme of "Architecture as a Social Fact," will place special emphasis on housing.

The congress will be preceded by assembly sessions of the International Union of Architects. The AIA will send a delegation to the assembly.

The congress is open to all architects, as is a three-day meeting on town planning to be held in Mar del Plata, Argentina, immediately following the congress.

An "Architect's Trek to South America," led by Robert L. Durham, FAIA, the Institute's immediate past president, will be conducted in conjunction with the congress.

The tour, departing Oct. 7 from Miami, includes stops en route to Buenos Aires with optional side trips to Cuzco, Machu Picchu and Iquitos.

Following attendance at the congress, tour members will return via Rio de Janeiro and Brasilia, arriving in Miami Oct. 28.

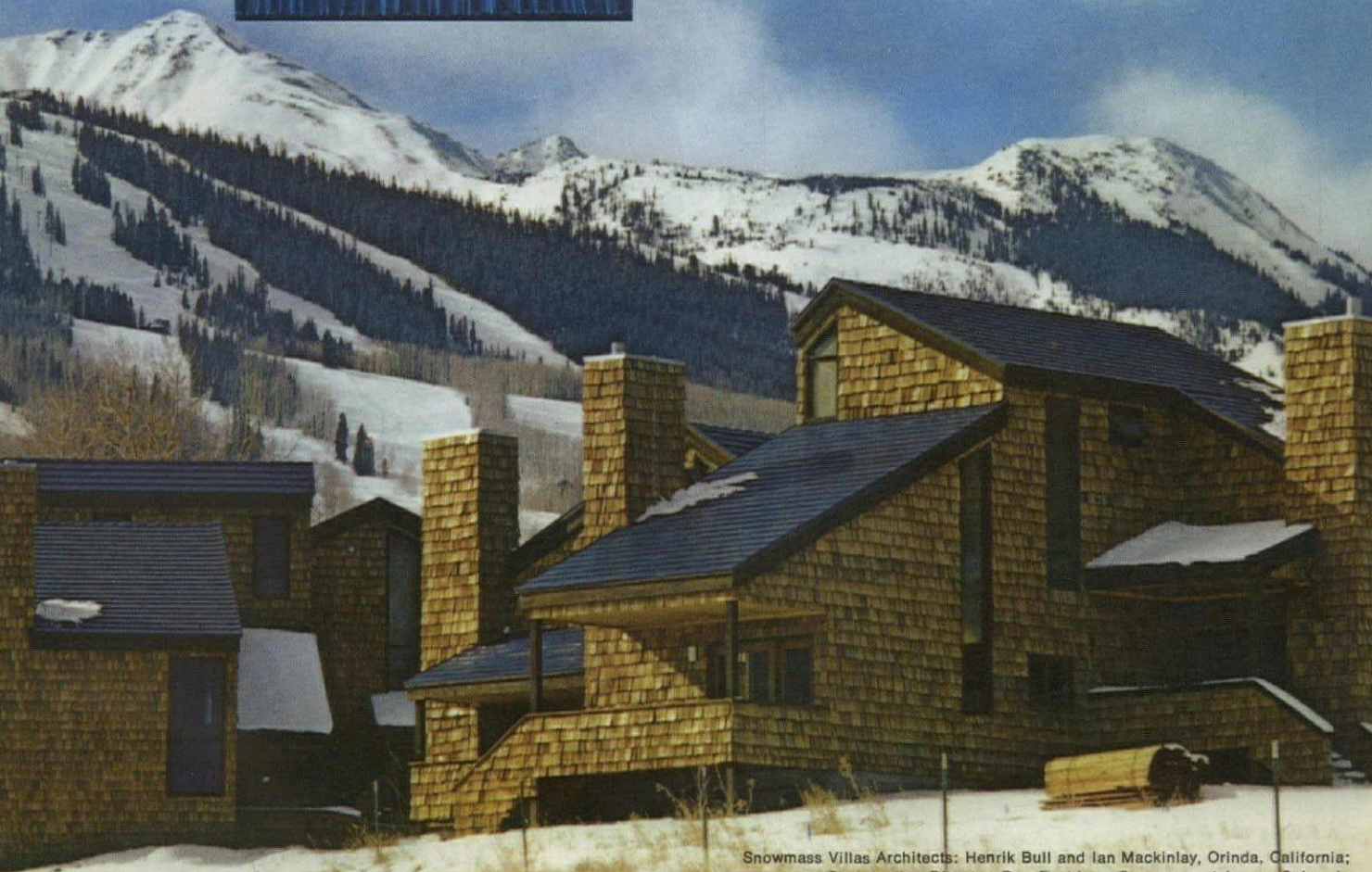
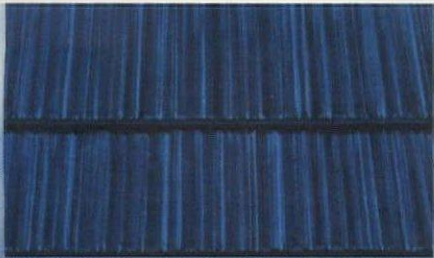
Full details on the tax-deductible trip can be obtained from the United States Travel Agency, Inc., 807 15th St., N.W., Washington, D. C. (attention John E. Smith Jr., president).

## Greene and Greene Library At Home in Gamble House

A permanent archive for the drawings, books, letters, sketches, photographs and files documenting

Continued on page 24

# The blue of Colorado skies meets its match in Reynolds Aluminum Shingle-Shakes®



Snowmass Villas Architects: Henrik Bull and Ian Mackinlay, Orinda, California;  
Construction Director, Don Davidson, Snowmass-at-Aspen, Colorado

People in the Aspen area refer to Snowmass Villas as, "that place with blue roofs," and with good reason.

This award-winning condominium project consists of 6 buildings, providing 28 residential units for year-round vacation use. Of conventional wood-frame construction, the apartment complex is sided with cedar shakes. In designing steep, shed-type roofs, the architects used Reynolds Aluminum Shingle-Shakes in Heron Blue Colorweld® as color counterpoint to the rough-hewn

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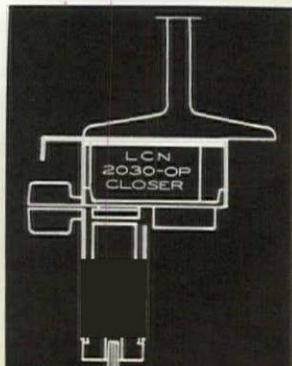


Zellerbach Hall, Univ. of California, Berkeley. Architects: Vernon DeMars, FAIA, and Donald Hardison, FAIA. A joint venture of the firms: DeMars & Wells and Hardison & Komatsu.

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## The place:



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**The designer:** Mrs. Diane Mitchell, Interior Designer



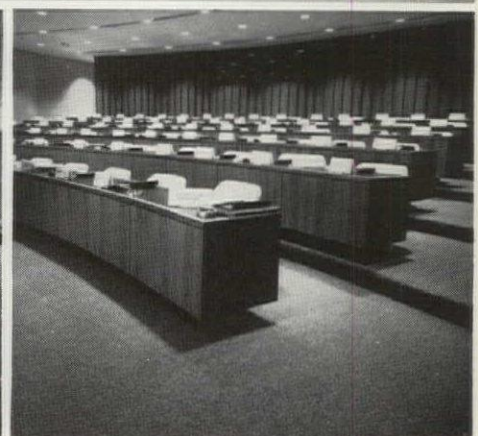
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Architect: Stone, Marraccini and Patterson, San Francisco

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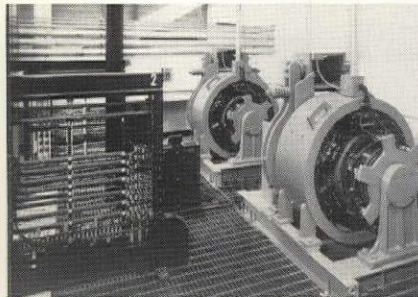
An adjacent five-floor Medical Office Building contains two Montgomery duplex passenger ele-

vators. Franklin Hospital Phase II—Long Term Care Building—is now under construction. This five-floor unit will be attached to the main building and will be served by two Montgomery elevators when it opens this year.

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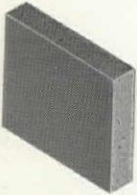
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Newslines from page 24

measured drawings from the National American Buildings Survey range in subject from American Indian sites attributed to the pre-colonial era to works of great architects and engineers. Two panels introducing the exhibit deal with the work of HABS, which the AIA assists in an advisory capacity.

Occupying approximately 125 running feet, the 50 mounts will be framed with a wood edge ready for hanging (rental fee: \$100).

## French Quarter Expressway Faces Another Roadblock; DOT Fills New Urban Post

Another obstacle has been placed in the way of the proposed ground-level expressway along the New Orleans waterfront in the Vieux Carré.

In a report to Secretary of Transportation John A. Volpe March 2, the President's Advisory Council on Historic Preservation recommended a change in route for Interstate 310 or, if that is infeasible, a depressed expressway rather than the ground-level scheme endorsed by the Federal Highway Administration.

Just how formidable that obstacle will be remains to be seen, since the recommendations of the council are, as its name implies, not binding in any way. Nevertheless, how the Secretary reacts—there was no word at presstime—will have significance in terms of 1) proposed urban expressways throughout the nation and 2) the effectiveness of the council's role in the future.

The current scheme submitted by Federal Highway Administrator F. C. Turner calls for a surface road.

But the council, after a two-day meeting in Washington, D.C., and a similar one in New Orleans, declared that of "the five proposals studied by Rader & Associates, all of which were reported to be technically feasible and have the necessary elements of safety, the depressed scheme was deemed most acceptable."

**No Solid Support:** The report further noted, "The location of the expressway and specifically the surface scheme has both support and opposition within the community. City Council approval of the surface scheme was given by a 4-3 vote, clear evidence of the di-

Continued on page 32

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vided view and the lack of unanimity in support of the location and state-approved surface scheme."

One of the key issues involving the Vieux Carré route, in the council's view, is that it would require the taking of grounds from the US Mint, impairing its use as a museum, the purpose for which it was transferred from the federal government to the State of Louisiana.

**Exit Bridwell:** The outgoing highway administrator, Lowell K. Bridwell, issued a release on Jan. 17 saying the ground-level concept had been approved. The decision was rescinded by the Transportation Department since the plan had not been submitted by the advisory council as required by law.

That release read in part: "Administrator Bridwell said the surface-level concept not only avoids interference with the esthetic quality of the area but will, in fact, bring new development possibilities—especially in the realm of joint use and air rights."

Regarding expenditures, the release explained that the surface-level version of the riverfront section (nine-tenths of a mile) will cost "\$12.4 million more to build than the originally planned elevated structure. Total cost of this phase is placed at \$31.3 million."

**New Post, New "Image":** Meanwhile, the Transportation Department was waiting for J. D. (Dorm) Braman to leave his post as mayor of Seattle to fill a newly formed position as Assistant Secretary of Urban Systems and Environment.

In a Feb. 28 editorial on the appointment, the Seattle-based *Argus* weekly journal commented: "We asked the mayor about the background of his nomination for this new section of the department, and he said that one of the reasons was that not only did the new Administration wish to move ahead in this field, but . . . John Volpe had made his mark as a highway builder, and there was fear in some quarters he would move to cover the country with concrete. A different sort of 'image' was needed."

How the Secretary responds to the Vieux Carré controversy in general and to the council's recommendations in particular will certainly affect that image.

Whatever the outcome, the freeway opponents for the moment, at least, are claiming a moral victory.

*Continued on page 34*

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# Roofs Architects and Imagination

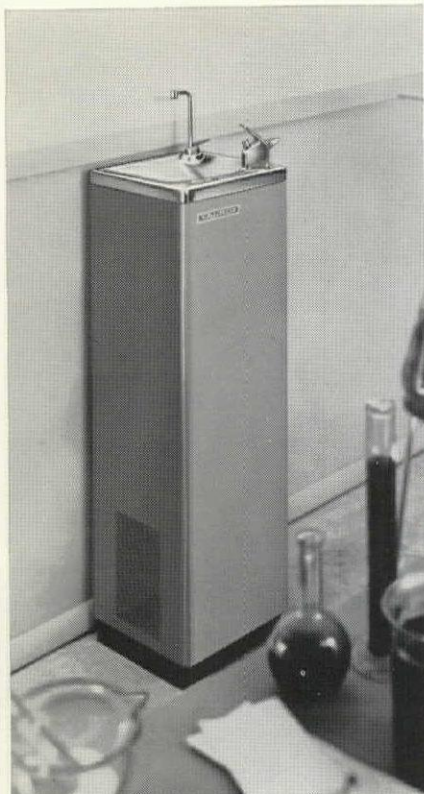
The renewed interest in visually significant roofing and fascia so evident in recent years has been paralleled by a notable increase in the specification of Follansbee Terne. We believe that both of these trends happily reflect a greater emphasis on purely imaginative elements in contemporary architecture, a welcome departure from the "antiseptic line." And both are essentially interdependent, for Terne has the important advantage of providing maximum creative latitude at relatively modest cost.



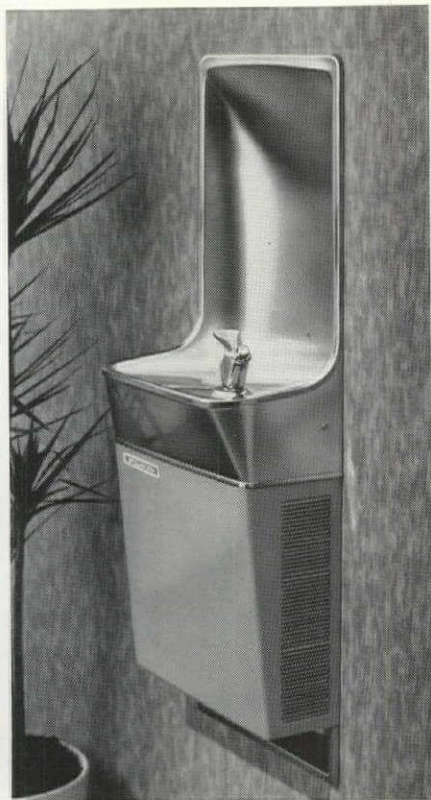
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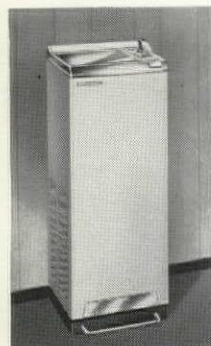


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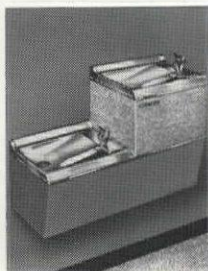
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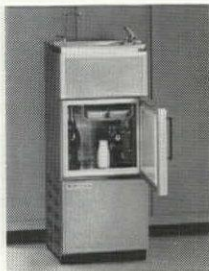
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Newslines from page 32

## William Lescaze, Pioneer Of Modern Movement, Dies

William Lescaze, FAIA, a key figure in the modern movement, died Feb. 9 in his New York City home. He was 72.

A native of Switzerland and a pupil of Karl Moser, teacher of many modern Swiss architects, he came to the United States in 1920.

In 1929 he joined with the late George Howe in the firm of Howe & Lescaze, a partnership that in 1932 produced the skeletal, continuous-spandrel, continuous-window ribbon Philadelphia Savings Fund Society Building.

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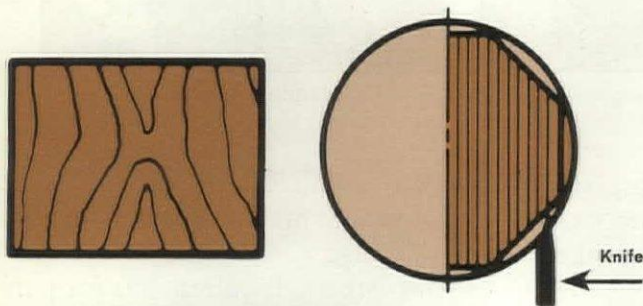
# The art and science of cutting and matching veneers.

By John Lentz

Simply defined, veneers are thin sheets of fine woods glued to core stock, such as Novoply® or lumber cores. This definition, however, leaves a lot unsaid. For cutting and matching veneers for architectural paneling and doors—as done by the skilled woodworkers of U.S. Plywood—involves many careful and complicated procedures.

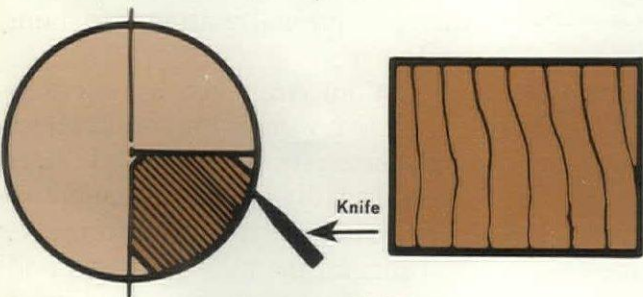
## Veneer cutting

Our veneers are cut from sections of choice logs—called flitches—by one of several methods, depending on the wood species as well as the veneer figure or growth pattern produced by a particular log. Most architectural veneers, however, are either plain, quarter or rotary sliced, as shown here.



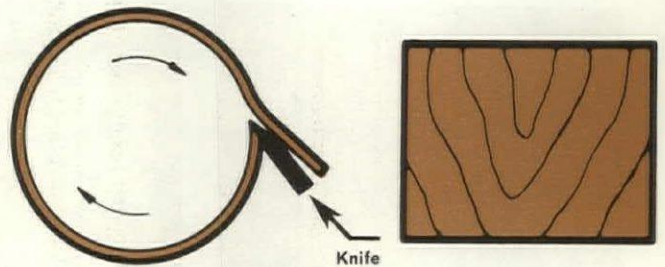
## Plain slicing

In plain or flat slicing, the half log or flitch is mounted with the heart side flat against the guide plate of the slicer. Slicing done parallel to a line through the center of the log produces a cathedral figure.



## Quarter slicing

In quarter slicing, the quarter log or flitch is mounted on the guide plate so that the log's growth rings strike the knife at approximately right angles. Result: a series of stripes which are straight in some woods and varied in others.



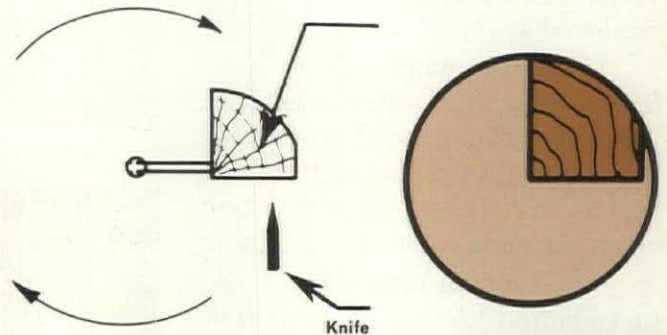
## Rotary slicing

In rotary slicing, the log is mounted centrally in the lathe and turned against a razor sharp blade, like unwinding a roll of paper. Since this cut follows the log's annular growth rings, a bold variegated grain marking results.

As the plain and quarter sliced veneers fall from the knife, they are attached in the *exact* sequence in which they were cut. (Rotary cuts, of course, cannot be sequence matched.) All logs or flitches are identified by number. After laminating, each panel is identified by both its sequence and flitch number.

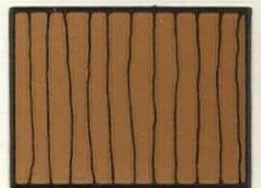
## Other cutting methods

In addition to these methods of slicing, U.S. Plywood produces veneers by other types of cutting to yield a wide range of veneer configurations. Rift cutting, for example, produces a distinctive pattern.

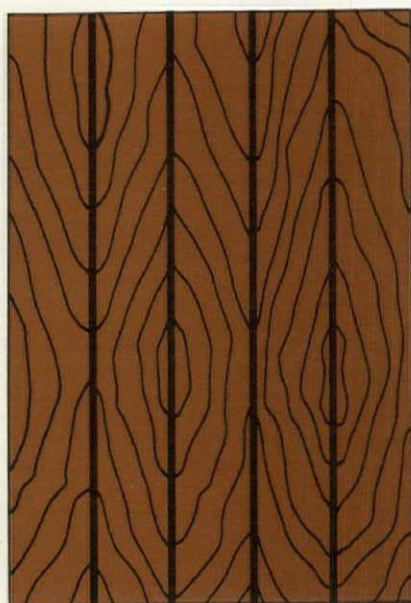


## Rift cutting

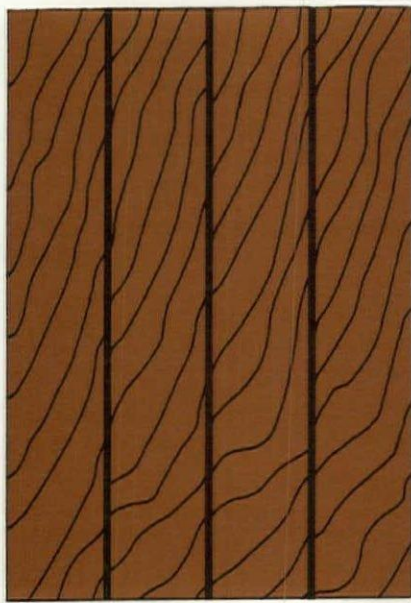
This method of cutting produces Comb Grain Oak veneers. The medullary rays of oak radiate from the center of the log like the spokes of a wheel. By cutting perpendicularly to these rays, a comb effect results.



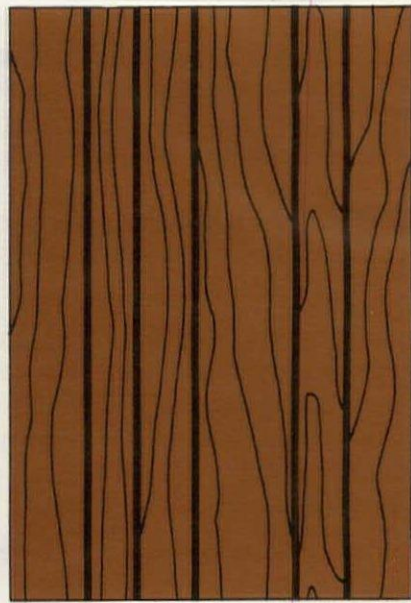
# Veneer matching by U.S. Plywood



Book matching



Slip matching



Random matching

Three matching patterns are most often used: Book, Slip and Random matching.

## Book matching

In *Book matching*, every other sheet of veneer is turned over, like the leaves of a book. Thus, balance at the veneer joint is produced as shown above.

## Slip matching

In *Slip matching*, veneer sheets are joined side by side, without turning. Consequently, the flitch pattern is repeated from sheet to sheet, resulting in a more even color after finishing.

## Random matching

In so-called "*Random mismatching*," veneer sheets are carefully and deliberately mismatched for the most effective appearance. Veneers from several different logs are often used for one set of panels.

U.S. Plywood has one of the world's largest and most varied inventories of veneers for use in creat-

ing our Weldwood® architectural paneling and doors. Samples of veneer matching are shown in the sketches on this page.

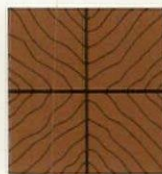
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Diamond



Reverse Diamond



"V"



Herringbone



Box



Reverse box



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## UNFINISHED BUSINESS

BY WILLIAM H. SCHEICK, FAIA  
Executive Director

# Last of the Old Style Dissenters

"We're a screwy race, son," mused the Old Reprobate, staring philosophically at his fourth martini.

"We're getting to the race issue?" I ventured.

"Oh, no you don't," he said warily. "I mean Americans are a screwy race. You take this Vietnam business . . ."

I sipped my martini. You must pace yourself with this man.

"What's our motivation in Vietnam? Our missionary instinct! Everybody has to have a democracy whether they want it or not . . . like we used to be about Christianity. Our missionaries found a pagan paradise in Hawaii and put long mumus on those beautiful women. They're getting even by selling them to every female tourist!"

"Your analogies elude me."

He waved that off. "Speaking of skirts, I wonder when this mini-skirt thing will die out?"

"I thought an old leg man like you would hope never!"

"You will never comprehend the refinements, youngster," he grumbled. "Remember when the hemline was just below the knee? Lots of pretty gams! They raised it 10 inches and the percentage nose-dived! What happens above the female knee joint shouldn't be public." We drank to that.

"Maybe the miniskirt is part of the protest movement."

"Mine or theirs?"

"The girls'."

"Maybe so. But this protest business certainly proves one thing — namely that ours is the chicken generation. After all we went through to earn our responsibility and authority . . ."

"And then run scared when two-bit activists commit crimes and go unpunished. We tremble at being called a member of an 'institution.' Hell's fire, son, boys are dying in rice paddies for our institutions!"

I sipped my martini thoughtfully. "Would you be tough with 'student demonstrators'?"

"Tough is hardly the word for the ones that would destroy the very rights that protect them. But then," he went on, "some college

kids get involved just for the hell of it. We would have done it in the '20s if we had thought of it."

"How come you didn't?"

"Too busy protesting prohibition, son. But in a different style. Didn't interfere with anybody's education. And too busy liberating the women from the constraints of the pre-World War I era. Easiest liberating job ever."

We drank to that.

"You know," said the Old Reprobate, "I sometimes wonder if we shoulda freed them, considering the way women are now." I twirled my glass, waiting.

"Predatory, man. Predatory. Just listen to those male cologne ads on radio and TV. Rub on a dab and you just ain't safe!"

"Is this bad?"

"Only sensible thing you have said all evening, boy."

We drank to that. Ring—a—ding—ding.

"Seriously," he said, "Bucky Fuller predicted that women would be running the world by year 2000."

"How did he explain that?"

"I couldn't figure it out. His vocabulary is too big."

"What about the men?"

"No reason for being, son, except procreation. Already they are drifting into a world of make-believe. Take any rush hour. This guy next to me in the sportiest car he can buy is vroom-vrooming furiously while we wait for the light. It changes. He dashes ahead, squealing his big fat tires and maneuvers one car length ahead and two lanes over before we hit the next light."

"What's his motivation?"

"Shucks, boy. He's playing race driver. Actually he's escaping a nagging wife on his way to a domineering boss."

A sobering thought. But this was no time for sobriety so I giggered him with this: "Aren't we the best informed society in history thanks to the free press and TV?" I was afraid he was having a stroke. Which martini was this?

"Free press, my foot," snorted the old boy. "Even cub reporters editorialize in their news items.

You have a newspaper in D.C. that makes old Colonel McCormick's *Tribune* look like a fact sheet. The newspapers control TV and it has just been too much of a temptation. They can cut 15 minutes of on-the-scene footage to 15 seconds on the newscast and make the public believe anything is gospel truth. Tabloid, son, strictly tabloid!"

We drank to that.

"Words, words. Trillions, squillions of words," said the Old Reprobate. "No wonder we're confused. We are asphyxiated in lion gas! — There's a phrase, son. Politier than the common reference to the male bo-vine. More status."

"How do we know what to believe?"

"I don't rightly know, youngster. Our leaders say what they think sounds right, not what is right. The PR boys led them into that. Ever hear Bob Newhart tell his story about Lincoln writing his Gettysburg address with the help of PR speech writers? Would have been forgotten!"

"One thing I like about Moshe Dayan. He acted while everybody talked and decided nothing. Imagine what the American Revolution would have been like if it had been up to a UN vote! Doesn't anybody read Toynbee on war?"

"Yes," I said, "but now we must consider everybody's views. Take this advocacy planning . . ."

"You take it," he snorted.

"The patients become doctors and the doctors become basket cases. What do you think Paris would be like if Haussmann had had to please everybody? Mediocrity! The more people, the fewer decisions."

"That reminds me," he said, "My wife has a solution for Vietnam. Bless her. Give all the hardware to the South Vietnamese and bring the boys home. The South Vietnamese will sell it to the North for graft and the situation will stabilize."

"Too simple," I opined.

"You are so right, son. Nothing simple. We are a screwy race."

The bartender had gone home. □



**3 1/4**

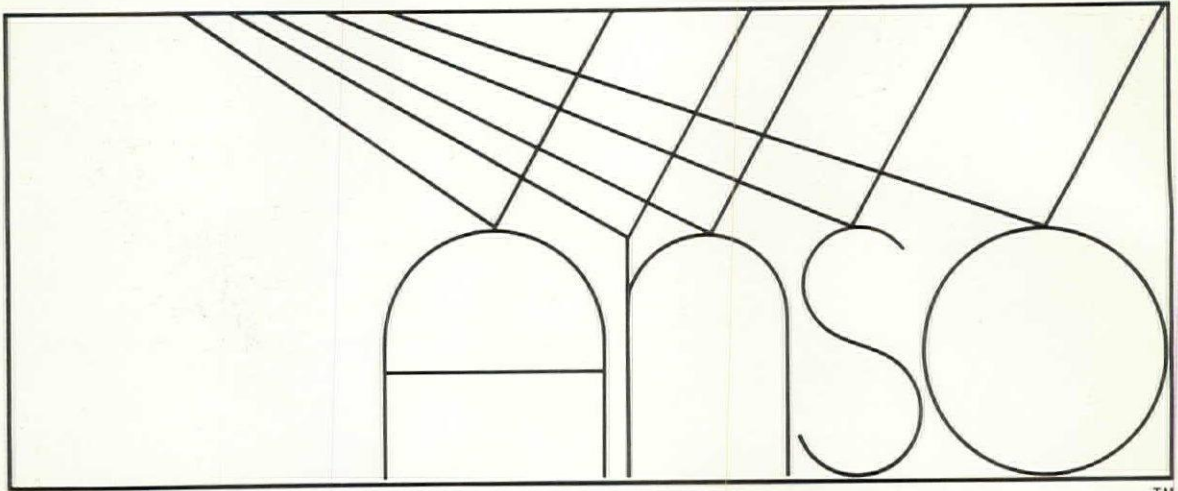
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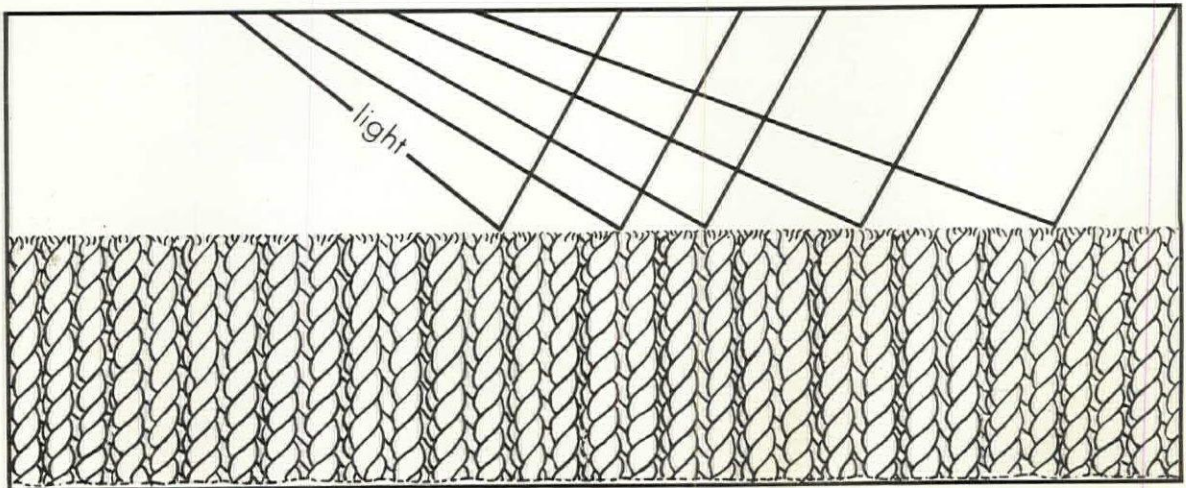
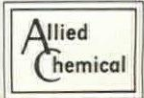
Allied Chemical announces  
the carpet fiber that makes dirt  
seem to disappear.

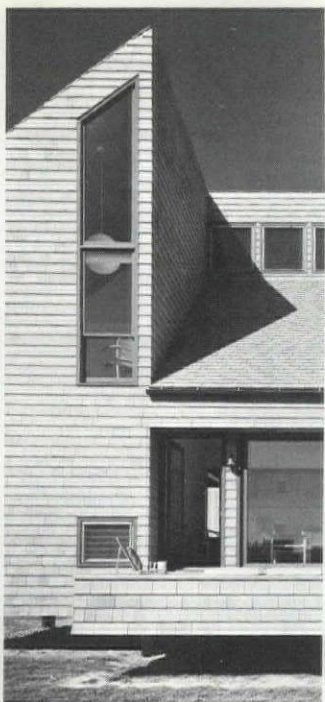




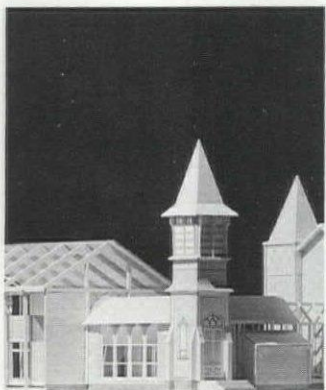
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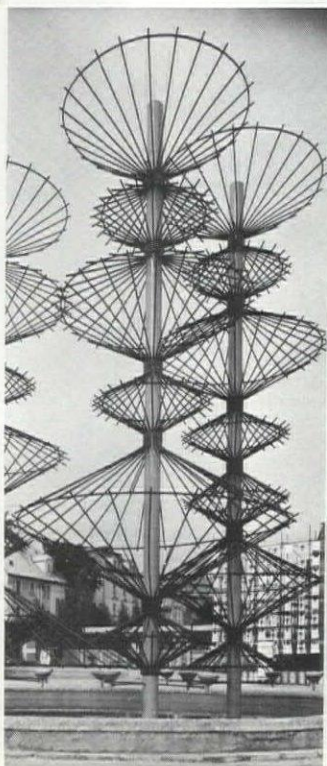




**Comment & Opinion:** Behind the headlines that emanated from the silver anniversary convention/exposition of the National Association of Home Builders, another story unfolded that got hardly a mention in any of the media, including the architectural press. It is a story made up of bits and pieces, none of which is really news in itself but which has, in terms of an overview, considerable significance for design professionals. For while they composed only a handful of the 40,000-plus who registered for NAHB's initial run in the Astrodome complex, their involvement far outweighed their relative number.



Architects and planners have participated in these design workshops and related activities in past years, to be sure, just as they did at the January convention. But it is believed 1969 marked the first time that The American Institute of Architects organized a session of its own under the direction of the national Committee on Housing — and its members did themselves proud. In a combination slide/informal lecture presentation which appeared to be spontaneous — it had two dress rehearsals — five panelists did a soft sell of architectural services before several hundred attendees who overflowed the meeting room as such speakers as Senator John J. Sparkman (D-Ala.) simultaneously held forth at podiums elsewhere in the same hall. The architects showed good and bad examples of housing designs, roughed out floor plans and even suggested that builders can have fun while doing their job. It was the kind of approach that could well be adapted to a slide show or an inexpensive but effective film.

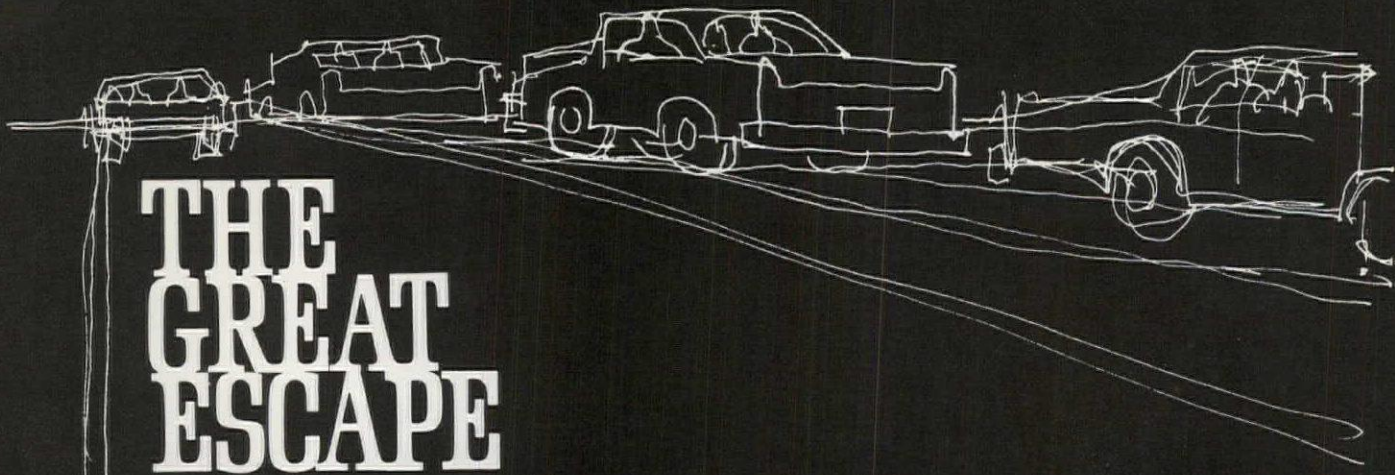


The AIA committee members, who arrived in Houston early to conduct a meeting of their own, also joined other architects in a session of the homebuilders' Institute of Environmental Design, a group which has been in existence since 1965. With little fanfare, the institute has been carrying on a program of conferences, case-study reports, etc.

But where does all of this lead? Some might quickly reply, "Nowhere, by the looks of the housing we plunk on our landscape." And yet this kind of exchange, of face-to-face confrontation, between architects and builders is bound to have its effect; indeed, there are encouraging signs on several fronts. One, in particular, is that of the second home, a market of growing proportions — and likewise of challenges and opportunities — as spelled out in the leadoff article by a member of the AIA Committee on Housing and by the accompanying portfolio assembled with an able assist by NAHB's John M. King.

ROBERT E. KOEHLER

# THE GREAT ESCAPE



to a more ideal environment of a second home, an area in which architects and builders have a fresh, exciting opportunity to work together.

BY CLOVIS HEIMSATH, AIA

Clarifying the dimensions of design in home-building and then functioning as a consultant — this is the expanding twofold role of the architect/planner that could bring the profession back into an important field of construction.

The second, or leisure, home is an illusive subject; everyone knows it is a coming market, but no one is sure just how to get at it. For example, one builder will say that second homes must be cheap to sell, yet he finds inexpensive ones unsold and expensive models going like hot cakes.

Another builder will say second homes must be close to the cities, yet he finds that people will drive 200 Texas miles to a lake they like and

**The author:** Mr. Heimsath, principal in the Houston architectural firm bearing his name, has been particularly active in the housing field. His article is adapted from an address given before a regional meeting of the National Association of Home Builders. He is the author of *Texas Pioneer Buildings: A Geometry Lesson*, reviewed in this issue.

won't look at resorts within a half-hour's driving time. Again, one builder makes a success of lakefront homes, yet his colleagues can't move their property in the same area.

Then there is the matter of design: A builder who erects half-timber English tract homes in the city wants his second homes to be exciting; still, he finds some experimental models sold before they are finished and others standing vacant years later. The architect can play a big role in helping to catch hold of this illusive market.

In our office we design by establishing what we call multilevel environments. We employ the technique whether we are planning a single building or a more complicated project, and we find it helps us analyze alternatives intelligently by providing a framework for decision making. Use of this technique requires agreement that 1) an environment is created by many factors working together rather than any single factor taken alone and 2) the total environment is what people want.

Let's develop a multilevel environment for the second home market and see if it works. It must

be casual, relaxed, secure, free, expansive; it must not be dull, ugly, chaotic, insecure, anxious, hurried. More precisely, the second home must offer the average American a fulfillment he can't attain in the city; the retired couple a fulfillment they couldn't achieve in their active years — unless they had a second home escape.

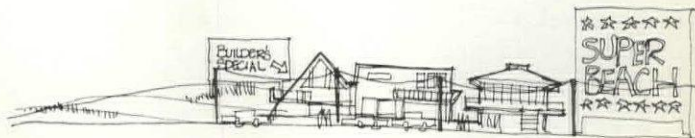
The second home environment, then, can be seen on five levels, each separate, each converging to define the whole. As I see them, they are 1) nature, 2) recreation, 3) convenience, 4) continuity and 5) symbols. A successful project, be it a single house or a large-scale development, must incorporate all five in some sort of balance.

**Level 1**—The nature any prospective second home buyer experiences in the city is extremely tame, consisting in most cases of a few trees in a fenced backyard, a lawn which needs mowing and the children's fish tank. The leisure home is not really an escape from city life; rather it is an escape to something. It is an escape to the American dream, of pioneering, of conquering nature.

Two recent books, *The Naked Ape* by Desmond Morris and *Territorial Imperative* by Robert Ardrey, say much the same thing: Man still has a basic need to come to grips with nature and express his superiority over natural phenomena.

So a first element of a leisure environment is nature itself. We could ask such questions: Is the site a good platform for viewing nature? On how many levels? If two locations are being considered, how does each compare?

It is not merely a matter of view, or trees or hills or water; it is how immediate nature becomes to the individual owner. A distant view of the mountains may be grand, but the sound of



a waterfall or the shade of a large oak tree is much more personal. My advice to the prospective buyer: Spend a day, doing nothing on the potential sites, and you will know which is more immediate from nature's point of view. Probably the one where you get stung by red ants will be the most successful.

But nature is multileveled itself: There is a foreground, a middle ground and a background. A good view must have all three: a foreground as an experience of nature; a middle ground as a



place to go; and a background to close one's view with the secure feeling of endlessness.

**Level 2**—As we move on to the second element, we begin to see how the multilevel approach works. We develop criteria for recreation independent from those for nature; then we use both sets of criteria and those for convenience, continuity and symbols in analyzing any decisions we must make.

Recreational facilities, either within the project or nearby, are essential to all leisure home environments. Ideally, we seek activities in each season for children, teenagers and adults. More than this, we want person-to-person and person-to-group recreation for each age. If possible, the community must be usable, at least to some degree, the year around. We can catalog the possible recreational facilities of an area and see how limited or general the leisure environment will be.

**Level 3**—Since the leisure home is first of all a family home, convenience is of utmost concern. Here is the escape to something more ideal than the city home for the wife and children. For the wife it is being with the family without waiting on them, driving them anywhere, entertaining for business. For the children it is being able to go anywhere without restriction, freedom to do what they want without worrying if it also messes up the house.

The services must be adequate but, more important, they must be convenient. Are there



places to store things from weekend to weekend? Is it easy to load and unload the car? Is it so distant that there is a family crisis going and coming? Distance can be judged by how long children will keep quiet in the car — the ultimate test.

**Level 4**—Continuity is, in some ways, the most important level. But another way, it is an answer to the buyer's question, "Will this community last?" Or, "Will it still be nice when there are more houses?" Or, "I wonder if I can retire here?"

So many leisure home developments that look fine with 20 houses seem shabby when they get to 100 or 200. So many leisure homes look worse as they are more successful, the visual chaos offsetting to some degree the success in numbers. Here is the reason for the master plan, the restrictions, the maintenance plan and, in the case of developments, perhaps elected officers.

To reassure the buyer about continuity, the developer and his team must have thought about it themselves. Which sites will be developed first, what design restrictions will be imposed to keep

the project from looking hodgepodge as more and more houses are built? At what stage will the public facilities (power lines, sewers, etc.) be constructed? Why not build the clubhouse first—a real act of faith in the community, a real statement for continuity. A clubhouse and a master plan are essentials on this level.

**Level 5**—The matter of symbols is a tricky one which must be faced. We live by symbols; we are all familiar with status symbols, but I dare say we have many more we go by. Geographic symbols are the most pertinent here. For instance, is the location of the leisure home symbolically okay, i.e., will I feel right about living there? Is it in the right direction from town? Do the signs to it symbolize what I expect in my leisure environment? These are questions the developer must ask himself.

One example can reinforce this idea. Suppose the developer has \$50,000 and can find investment capital 10 times that, say a maximum of

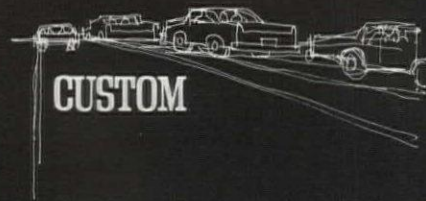


\$500,000, to get into a leisure home development. He will have to face at least three decisions: 1) Which land do I buy? 2) Do I hire an architect/planner to work with me or do I try to make decisions for myself and have a draftsman draw them up? 3) Do I build a clubhouse first, pave with shell or asphalt, bring in overhead or below-ground wires, plot large or small tracts, invest in improving the recreational facilities now or later, keep the project exclusive or broad, etc.

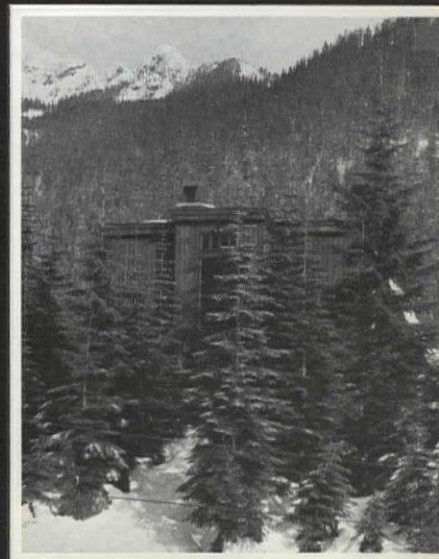
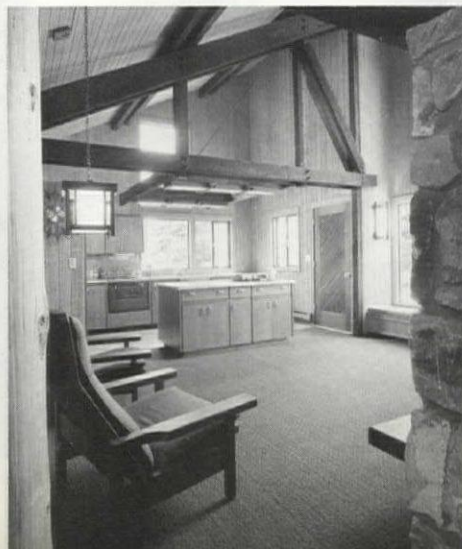
The time to hire an architect/planner, I tell my developer friends, is before they purchase the land. For we professionals can set up the basis for judgment in making this all-important first decision as well as all others that follow. Suppose a 50-acre piece is available at \$1,000 an acre, with a few thousand feet of waterfront and the remainder wooded. Another site, 150 acres, is available at \$300 an acre, and it is possible to build a golf course and sell lots around it. The temptation in evaluating these sites is to do it hit and miss—ask your golf pro whether he has any ideas about golf courses, ask your fishing friends if they ever fish on the lake, ask your banker about current interest rates. I emphasize again the establishment of a criteria standard from the start defining a multilevel environment.

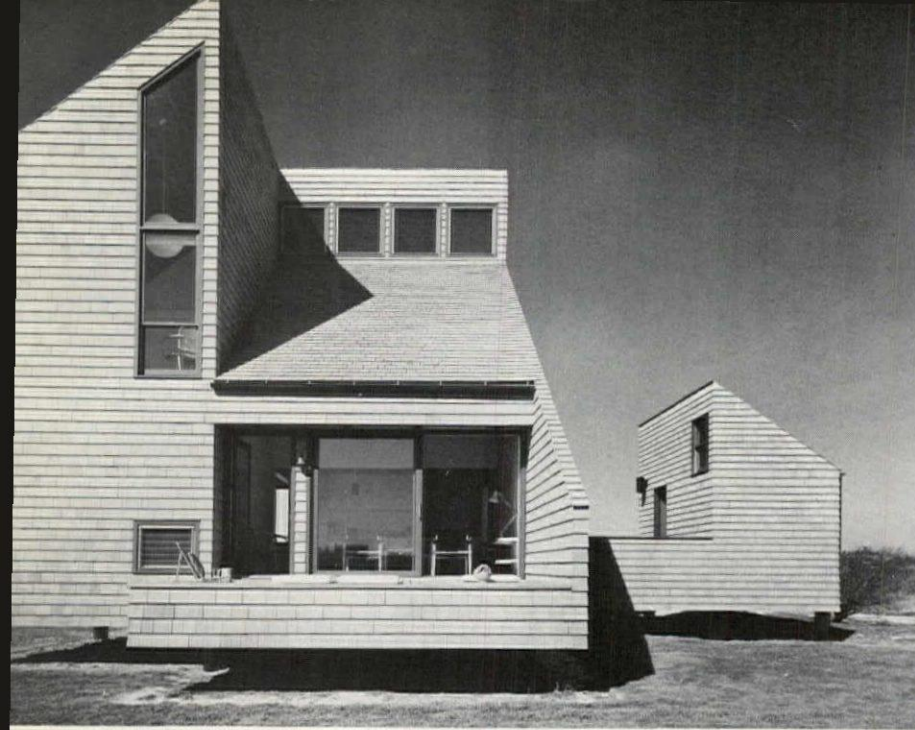
It is in executing this real role in building—the creation of environments which has to do with far more than drawing elevations—that the architect and builder can work together, providing amenities on the one hand, profits on the other.



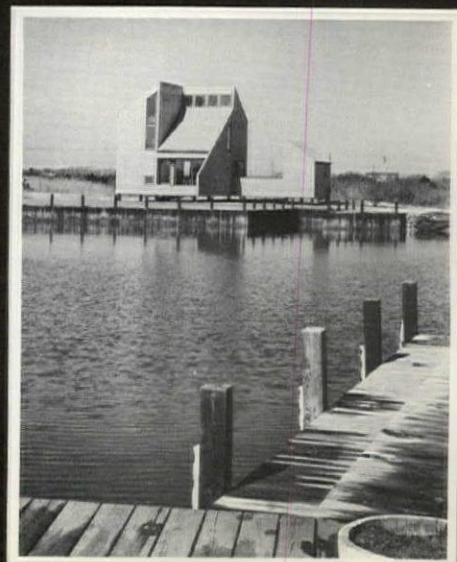


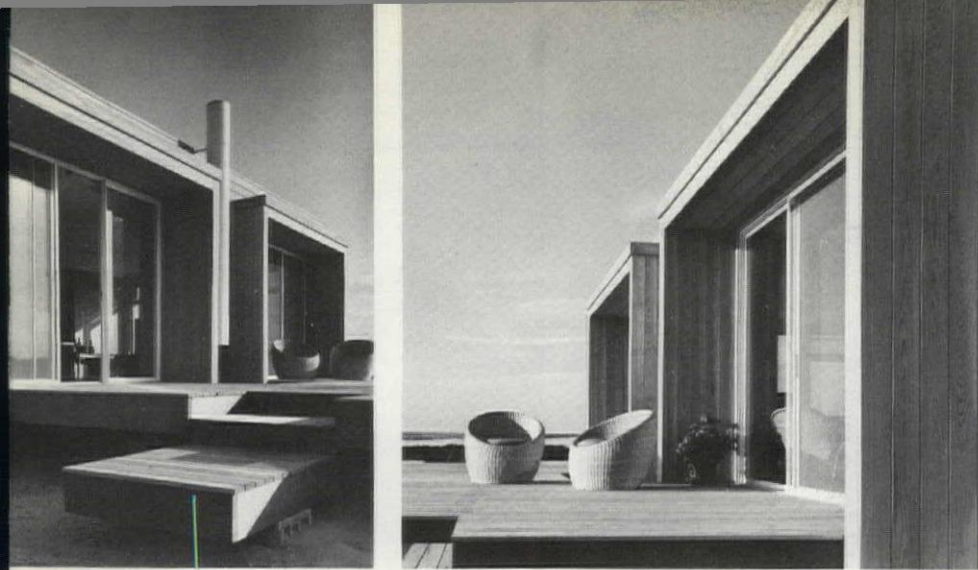
**Forty Minutes from Home:** The individual, custom-designed house presently continues to offer the greatest opportunity for architectural services in the second home market — and a brief case study suggests why. When you're a three-generation, Seattle-area skiing family, building a second home somewhere in the near Cascades becomes an almost essential activity. The Donald R. Littles found their evergreen-studded site just east of the Snoqualmie summit in a belt of private land formed as Interstate Highway 90 divides in its course down the east slope. Here, they're across-the-road neighbors of a ski area and, in a matter of minutes, can reach any of the other major ones in the Snoqualmie Pass locale. Average portal-to-portal time from their year-round residence on Lake Sammamish at Seattle's east side to their second home is 40 minutes. Thus the Little clan can be on the slopes in less time than it takes many golfers to travel to the first tee. Situated in a cluster of slim alpine firs, the house is a tall, sky-reaching structure with a steep shed roof. (The Cascades average more snowfall than anywhere else in the United States. It has 600 feet of floor space on each of two levels with an additional 700 square feet in a mudroom entrance at mid-level. The rough cedar exterior, stained Prussian blue merges with the color of the surrounding trees in summer, provides a lively contrast with the snow in winter. A. O. Bumgardner & Partners designed the house (builder: David Bloxham) with Rodney A. Knipper as project architect. Alvin Dreyer handled the custom lighting.



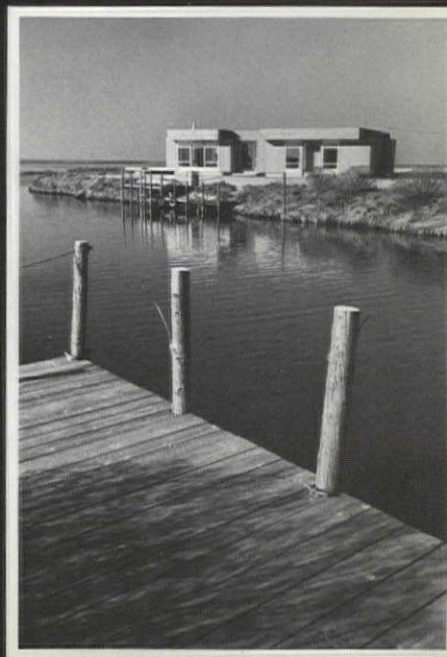


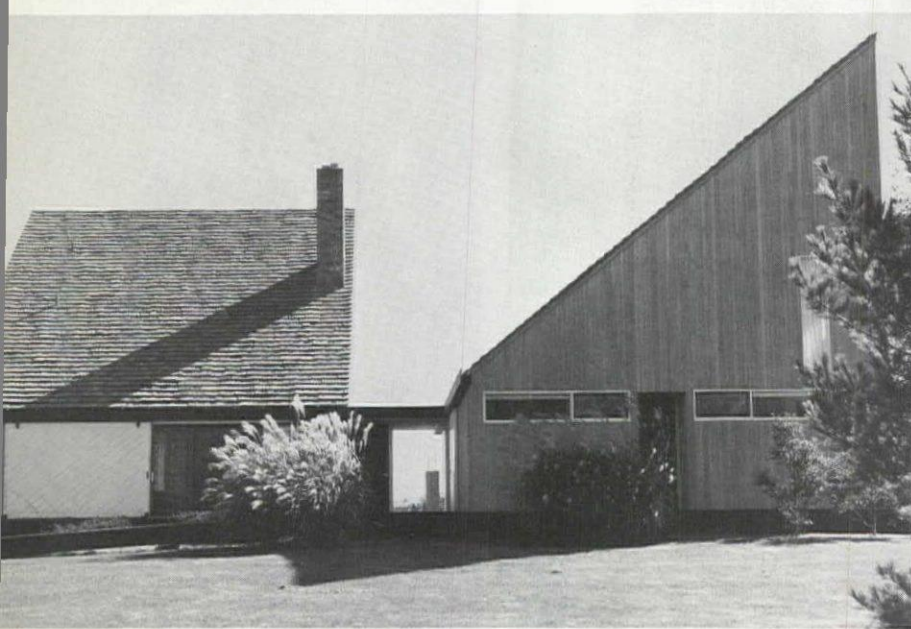
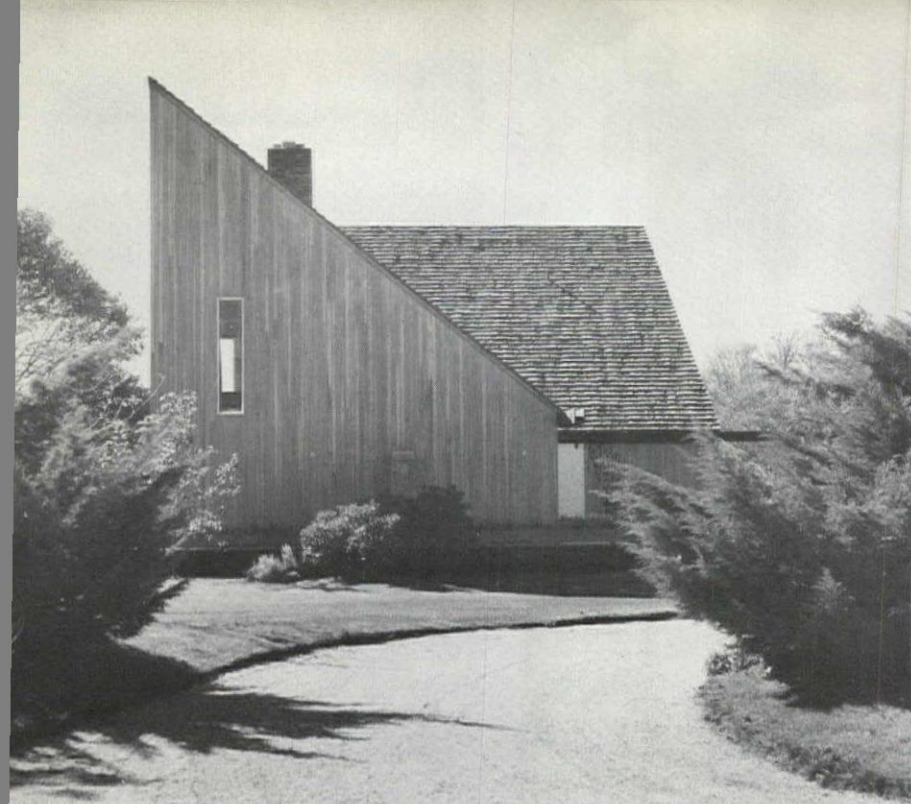
**Playful, Varied Spaces.** Whether nestling among snowcapped mountains or hugging a sandy shore, the second home tends to capture the mood of the place, as evidenced by the next three examples, all from "a photographic tour of some of America's most exciting leisure homes" selected by the New York Chapter AIA in 1968. "Tremendous growth of the leisure market has given the architect a new outlet for his imagination," according to William B. Tabler, FAIA, then chapter president. "The vacation house permits him to articulate space in more uninhibited fashion since he is freed from designing for conventional living patterns inherent in the family's first dwelling. Some of the nation's youngest architects are engaged in this form of building which allows for creative and sometimes playful use of natural textures and bright colors, resulting in exciting new design concepts." The house shown here, for example, is sited on low, flat property facing a canal which connects two major bays on Long Island at Quogue, New York. A heavily traveled elevated drawbridge is located to the east. Hobart D. Betts, AIA, designed this structure (builder: Charles L. Sauer) for his own family of five. The need for economy, a positive visual relationship with the adjacent bridge and protection from high water indicated a two-story building raised off the ground on piles. High clerestory windows provide a natural flow of air throughout. Changes of ceiling height help to separate the living and dining areas, and a skylight over the stairwell further dramatizes the variety of interior spaces.





**Prefab on the Waterfront:** In creating the Alex Herskovitz second home at Harvey Cedars, New Jersey, Myron Henry Goldfinger, AIA, feels he has offered "a reasonable alternate solution to the inevitable nonarchitect-designed builder's house to which a large part of the public turns, out of consideration of cost." For he was given such rigid client requirements as these: 1) conformity to local building methods, 2) four bedrooms with maximum privacy and two bathrooms — at low cost, 3) lots of storage space ("every square foot accountable"), 4) one level only and no "wasted" vertical space, 5) justification of each design element. Such a program usually leads to a dull solution, or the project never gets built. In this case, however, the architect developed a unit design geared to prefabrication and standardization (builder: Ullman & Silvermaster). He created a variety of experiences through the constant articulation of forms which always express functions. As a result, he incorporated, at little additional cost, such amenities as a large roof terrace (behind parapet) served by an exterior circular stair; direct access from each bedroom to the outdoors; outdoor shower entrance to the bedroom corridor; all storage units doubling as sound and insulation buffers; and overhangs that protect all glass areas, permitting the high ventilating windows to be kept open during rainstorms.





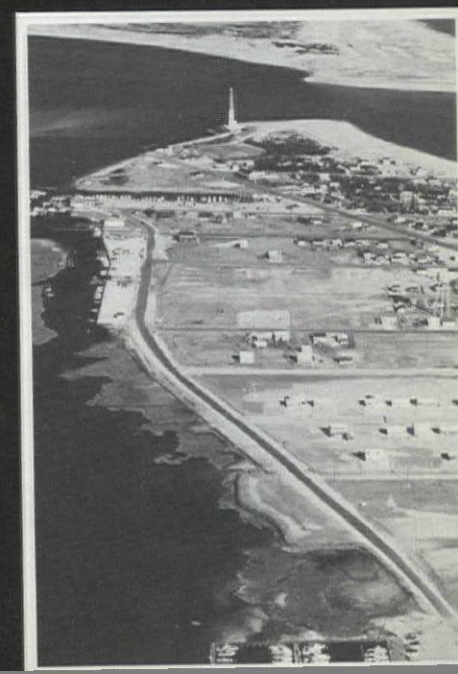
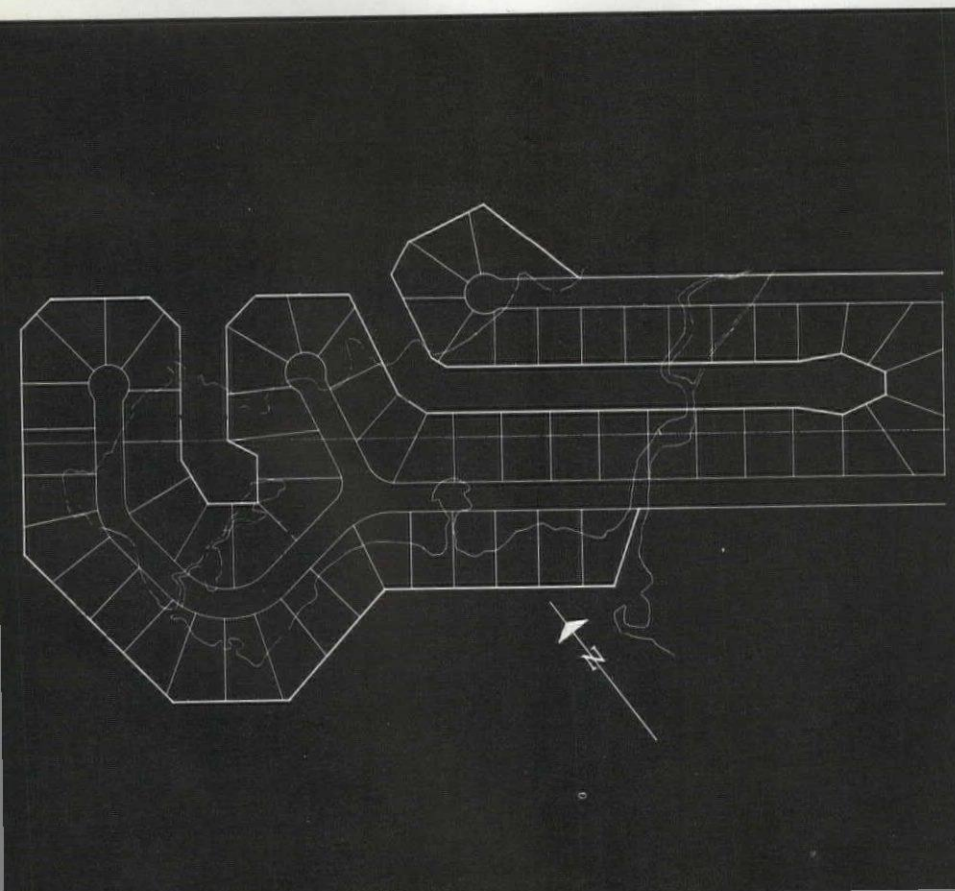
**Year-Round Country Refuge:** Situated in an estate section in East Hampton, New York, this dual-saltbox structure provides the Seymour Chalifs with a view of yet undeveloped fields and of the ocean (from the second floor) and freedom from the confinements of the big city for their young son. Julian Neski, AIA, made use of such rural simplicities as cedar shakes, barn doors and exposed beams in designing the house (builder: Harry H. Wilde Inc.). It is, however, much more sophisticated than it appears at first glance. The two units are casually connected by a breezeway and yet seem to be tied together as if under one roof. The shorter wing has been conceived as an open space, consisting of a large living-entertaining room with a study-balcony; the other is partitioned and private, housing the kitchen, dining room and bedrooms. The interiors, as developed by Barbara Neski, project associate, are understated. The black structural frame and white nonstructural cabinets and partitions form a backdrop for undatable furniture, colorful accents and pieces of art.

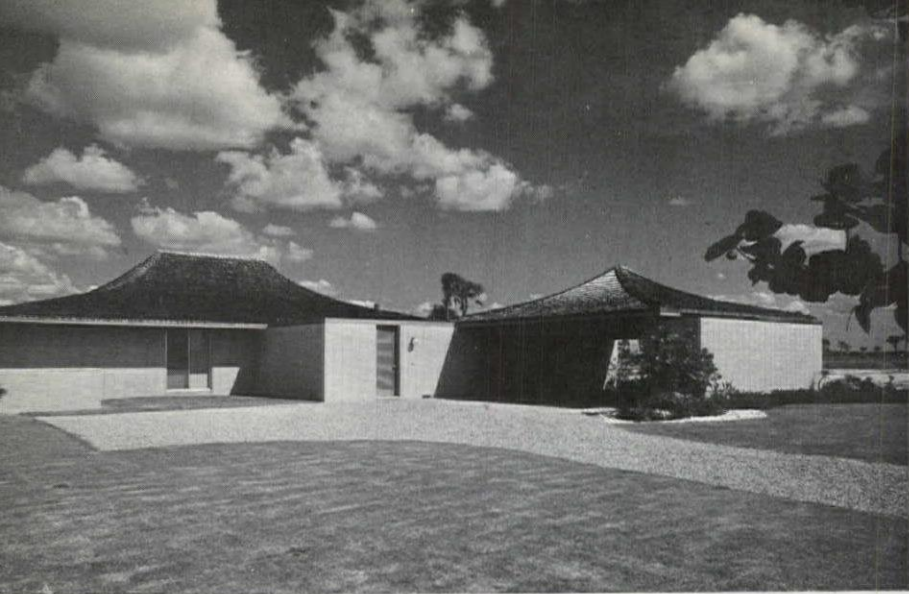




## MODEL

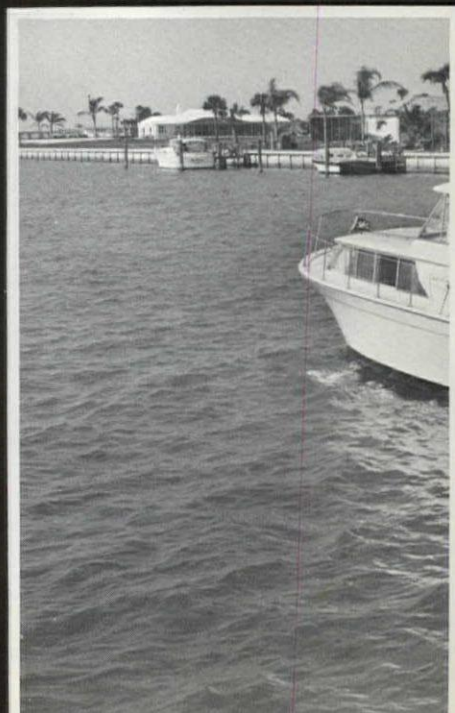
**First Step on a Right Course:** An area in which the architect has been notably absent is that of servicing the builder who is interested in erecting several or more houses in the same locality, although not necessarily as a development per se. Robert Calhoun Smith, AIA, designed this model for Mayer Construction Co. in the Town of Loveladies on Long Beach Island, New Jersey, an appropriate second home location for families from Philadelphia to New York City. Basically a three-bedroom house, it can be converted to four by adding a kitchen on the opposite side of the living room and making the existing kitchen into a bedroom. The model is planned to be used on bayside filled, bulkheaded land (note lagoons in plan) with other designs by the same architect. It can be sited on various lots with different garage locations and siding changes to avoid monotony. While this house does not pretend to vie with the custom-designed versions already shown in terms of imagination, it is a good start for genuine architect-builder cooperation; and as this relationship matures, the model's creator expects more experimentation.

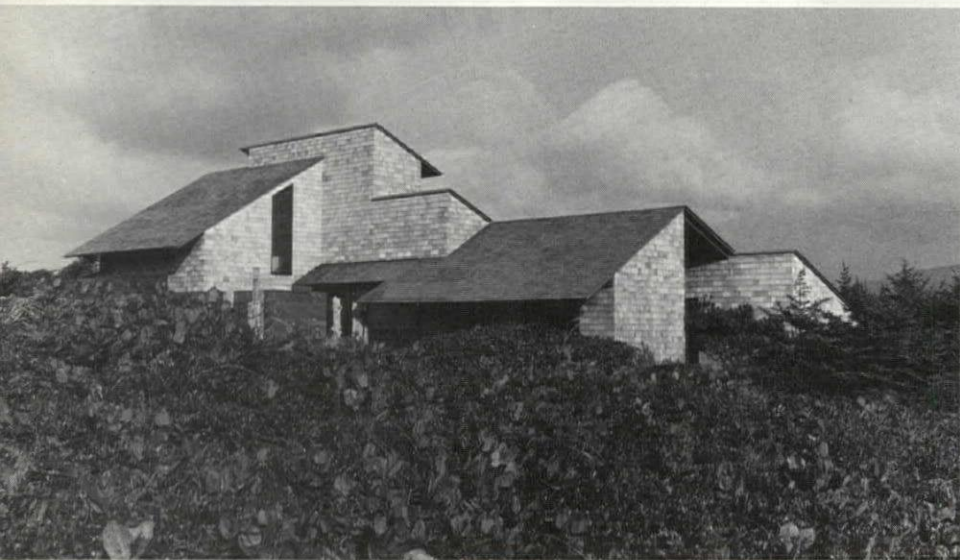




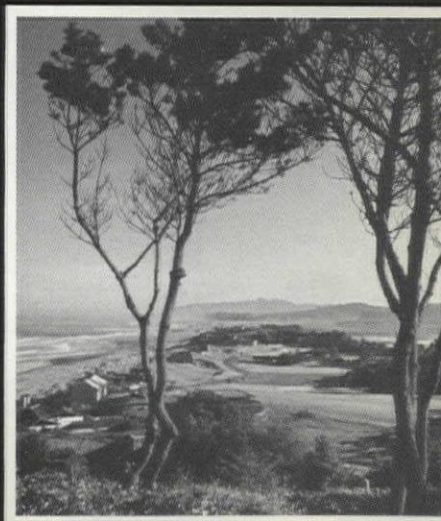
## LARGE-SCALE

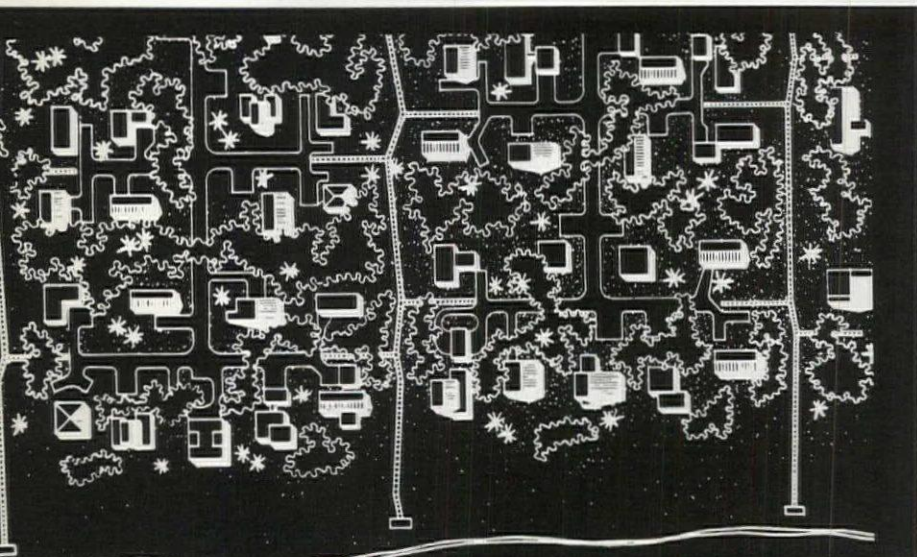
**Gracious Living in the Sun:** Resort-oriented residential communities are becoming big business, as evidenced by Florida-based Arvida Corporation's real estate sales for 1968: more than \$15 million, an increase of \$3.5 million over the previous year. Among its holdings is Bird Key, a luxury single-family development 1 mile from downtown Sarasota. And as is the case in an increasing number of projects of this kind, architectural controls have been imposed. At Bird Key, each home is the product of an architect and each must meet with the approval of the design committee. The subdivision, which has a private yacht club with marina, swimming pool and tennis facilities, contains 511 homesites, many of which border on Sarasota Bay or the free-flowing waterways that lace the community. Jack West, AIA, designed this Courtyard House (builder: Jack Lavender) with each of the major rooms soaring more than two stories high. Living and sleeping areas open to patios which have been screened to make them available for year-round use. Interiors are the work of Terry L. Rowe & Associates; landscaping, Lane Marshall.



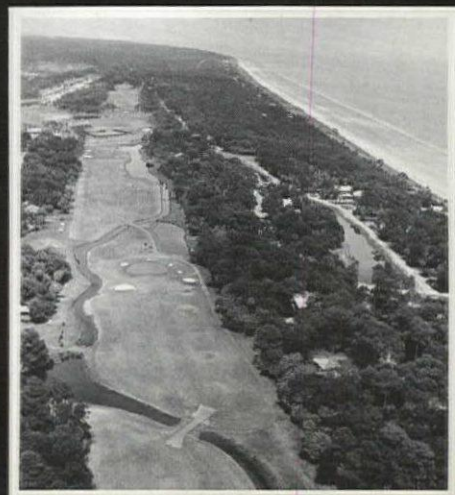


**Respect for the Site:** By any yardstick Salishan on the Oregon coast must be regarded as one of the most successful second-home communities in America today. At the head of Siletz Bay 90 miles from Portland, it is a 600-acre development master planned by Skidmore, Owings & Merrill. US Highway 101 divides the residential area from the lodge (see AIAJ, Sept '68), the work of John Storrs. Barbara V. Fealy's landscaping is keyed to preservation of the natural beauty. Homesites are leased (more than 200 thus far of the 300 surveyed) for a period of 99 years, and leases may be renewed for unending multiple 20-year periods at no additional costs. The leasehold concept insures complete privacy for the entire development including access roads. Architectural restrictions, administered by a committee of architects and developer John D. Gray, are enforced in regard to design concepts, building materials, construction methods and landscaping. Residential units include the Dunbar House, a condominium designed by Church & Shiels and more than 80 individual residences such as the one in the center by the same architects for Dr. and Mrs. Calvin Keist and the other by Robert York, AIA, for the John P. Healy's (builder for all three Ralph Neubert).





**An Orderly Environment:** Along the Atlantic Seaboard, Sea Pines Plantation on Hilton Head Island, South Carolina, has been developed as an area which would reflect the best planning, design and control skills available in the nation. As a result, The American Institute of Architects has awarded a Citation for Excellence in Private Community Planning to Sea Pines President Charles E. Fraser and "the many architects and planners who have worked toward the development of this resort community which provides for both vacation and permanent living in an architecturally unified residential area." The master plan, devised by Hideo Sasaki, provides three golf courses, a marina, hotel facilities and varying types of housing. Among the latter are single-family homes, such as the one designed by Corkern Wiggins & Associates for General and Mrs. Ted Timberlake (builder: Graves Construction Co.) and the townhouses by Collins & Krondstadt-Leahy Hogan Collins for developer Frank J. Schaefer (builder: Robert Woods Construction Co.). The walkway system provides safe and convenient access to the beach for interior forest homes. Architectural controls, along with operational restrictions of contracts and leases, will insure that future needs within the plantation can be met in proper geographic relationship both to residential units and supporting services.

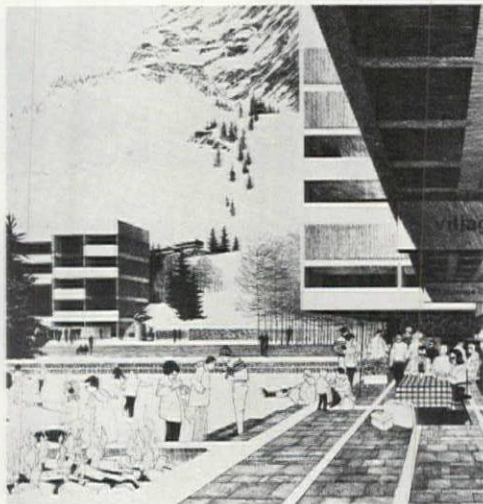






**A Firm and Esthetic Foundation:** Occupying 9,000 acres with about 4 miles of shoreline on Lake Tahoe, Nevada's Incline Village — a name of historical significance relating to logging operations conducted in the 1890s — is located 200 miles from San Francisco. Nearly 2,300 acres have been developed since 1961, including 450 single-family residences and 750 townhouses, condominiums and apartments, with a year-round population approximating 3,000 persons. As early as 1952, however, United States Plywood Corporation built condominiums on the lakeshore to sell for \$36,000; today, these units go for \$52,000 to \$56,000. The village is now managed by United States Land, Inc., a wholly owned subsidiary of Boise Cascade Corporation which bought all of the assets of the Crystal Bay Development Co. Master planned by Raymond M. Smith & Associates, with Raymond F. Murphy Associates as engineers, this community also has a design control committee, one of whose three members must be an architect. Foundations, for example, must be built into the site, naturally and tastefully, and cannot be padded or excavated. Among the firms who have contributed to Incline Village is Callister & Payne, designer of the Sierra Tahoe hotel, whose shape is reflected in the development's theme, as well as a number of private homes such as the one at the top by Donald Sandy Jr. (builder for both projects, Pacific Bridge Co.).

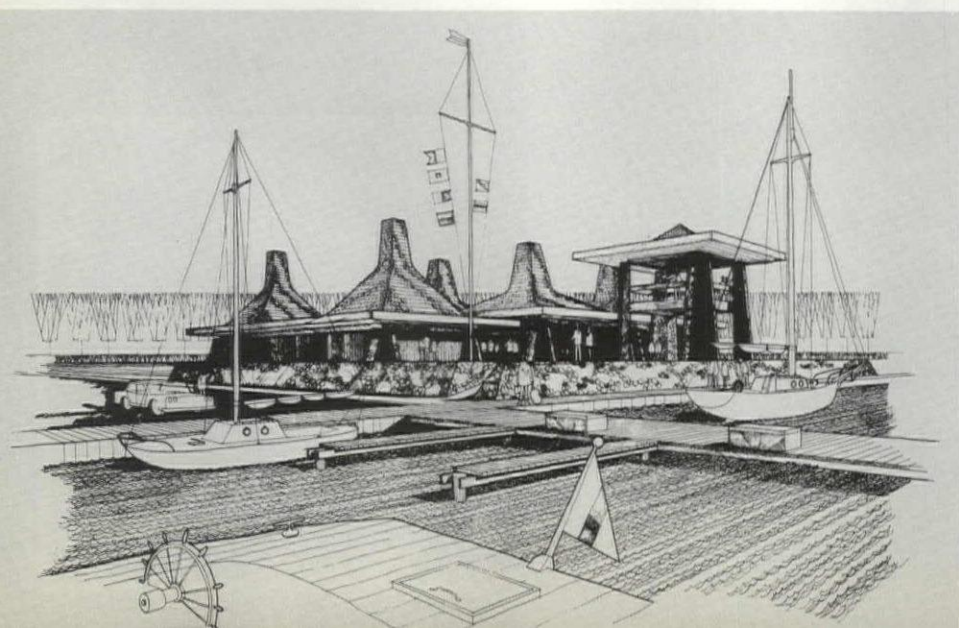
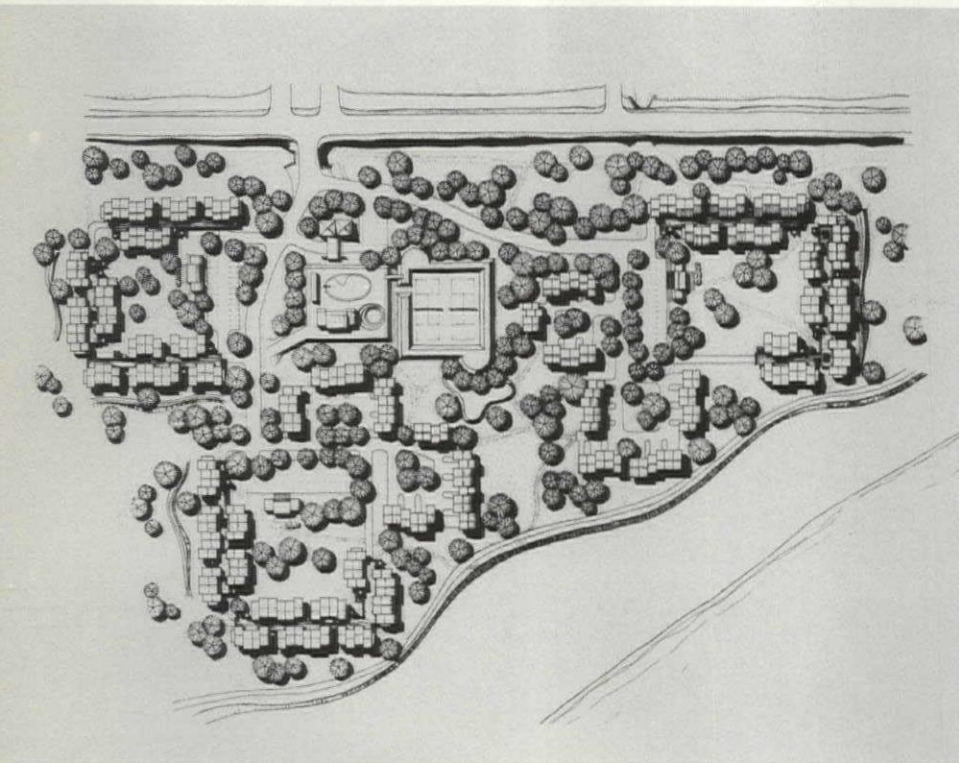
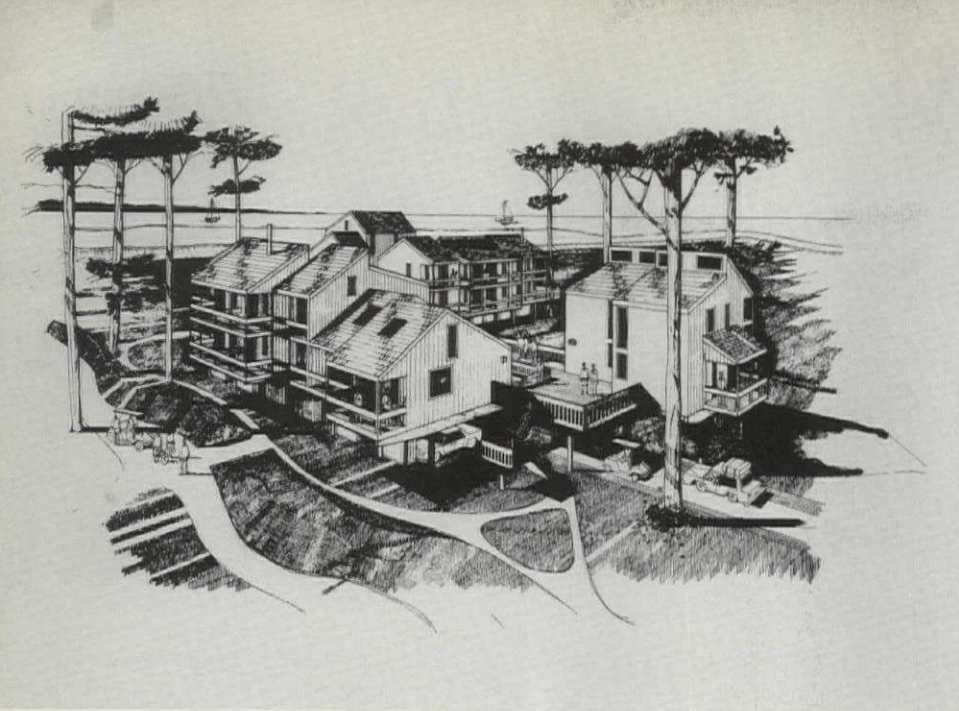




## CONDOMINIUM

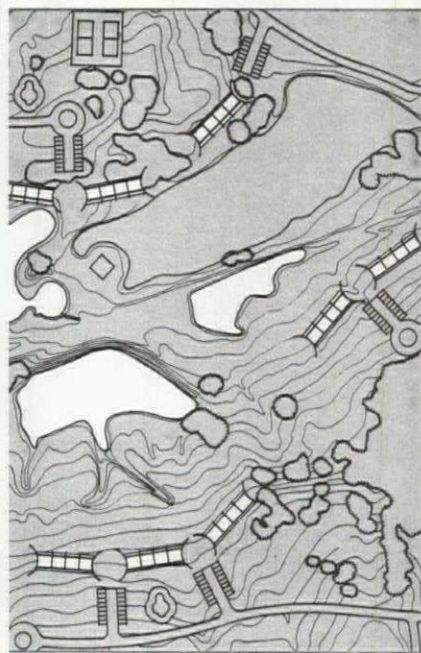
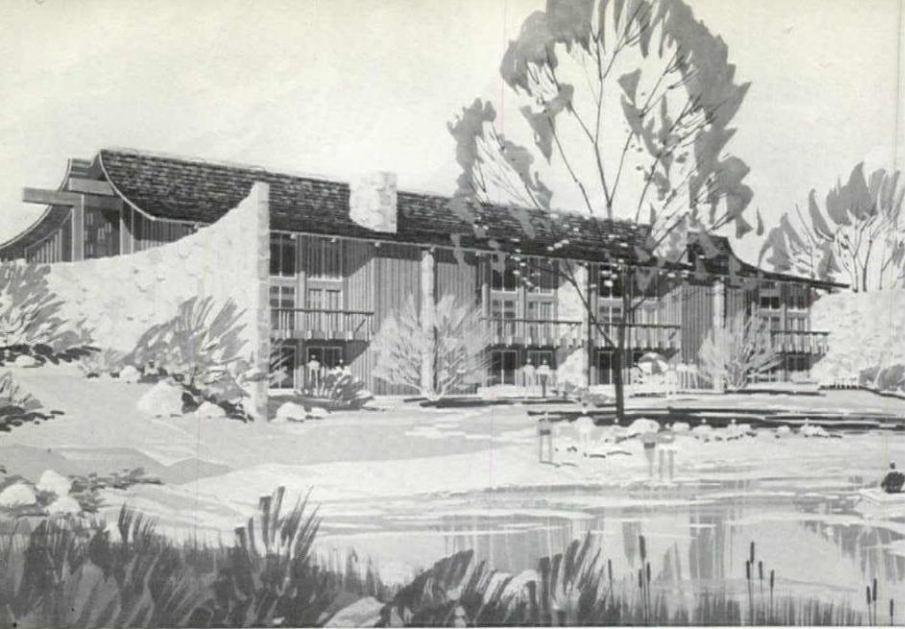
**Alpine Adventures Midst Comfort:** Latest entry in the second home market but making a fast come-on is what is known as the "resort condominium," the majority of which employ a rental pool arrangement. Says attorney Keith B. Romney, whose office of Romney & Nelson is handling legal negotiations for many of these developments across the land: "We have only scratched the surface, and all indications are that such projects will proliferate in great numbers throughout the United States during the next few years." He particularly notes that the resort condominium is unique in its need for and adaptability to sophisticated and progressive design by competent architects. Brixen & Christopher, for example, with Bliss & Campbell and John R. Smith as architectural consultants, have planned Snowbird, just 20 miles from Salt Lake City in the Wasatch Mountains, on the modular approach. Since all the modules have dressing and bathing facilities as well as direct access to the public corridor, any apartment, regardless of size, may be rented in total or as a series of one-module rooms as the demands dictate. As the first building in the project, the multi-purpose structure (builder: Cannon Construction Co.), whose principal function is to display typical condominium units to prospective buyers, has set the design idiom for future development. The lodge will open this fall in the heart of the village, a few steps from shops, stores, restaurants/lounges and services. These facilities will be found in a three-level plaza overlooking Little Cottonwood Creek and facing the slopes, knolls and bowls of Peruvian and Cad Valleys (site of Utah's proposed 1976 Winter Olympic Downhill Course).



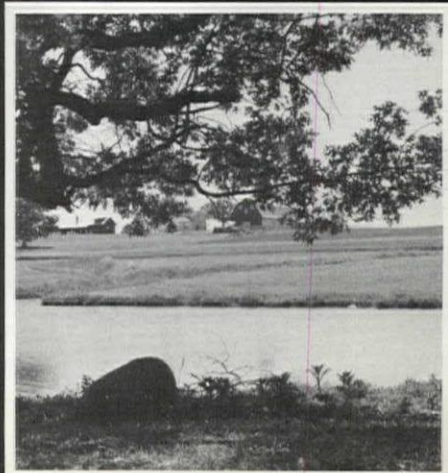


**A Dual Circulation System:** The condominium underway on Goodwin Islands at the mouth of the York River in Chesapeake Bay is separated from the Virginia mainland by a 150-yard wide channel. Its location also features proximity to such points of interest as Yorktown National Military Park and Colonial Williamsburg. A long-range development, it is currently projected to include 2,000 living units in eight villages, 500-plus motel rooms in at least two units, a 1,000-slip marina (shipstore at lower left), three restaurants, an 18-hole golf course and related resort-oriented commercial and recreational facilities. In line with the multiplicity of activities, architects Lewis A. Rightmier & Associates and planning consultant Sasaki, Dawson, Demay Associates Inc., aimed at the separation of pedestrians, bicycles and electric carts from the cars by elevating the access road (see top of plan). The first level of the living units generally are placed above the connection between the two circulation systems to afford 1) a view which is extremely good in all directions, 2) an elevation higher than any water could be anticipated and 3) effective screening of the majority of parking facilities and, at the same time, providing shelter for the vehicles and arriving guests. An attempt has been made to select a basic design form which could be used repetitively without being overbearing or monotonous; the unfinished wood material can be left to weather. Langley McDonald & Overman were consultants on engineering; Herbert-Lucy & Associates, Ltd., on soils.





**A Sportsman's Private Club:** Only a little more than an hour's drive from downtown Chicago or Milwaukee, Shagbark is being built in Hickory Valley near Alden, Illinois. The clubhouse, four fish-stocked lakes and game fields already are in existence, and an additional large lake is in the plans. Designed by Erickson & Stevens, Inc., each of the chalet condominiums contains eight units: four three-bedroom, three one-bedroom and one studio. Each apartment features an exterior patio or balcony and open, landscaped areas on every side. End units have curved walls of natural fieldstone. Every condominium cluster, reached by a gas-lighted private lane, has its own self-contained recreation area with a heated swimming pool, tennis and shuffleboard courts and putting green. The surrounding fields offer space for year-round activities that range from horseback riding and archery to tobogganing and ice skating. □



# PROFESSIONAL Training for the PRESERVATIONIST

**Loving care from volunteers and amateurs is no longer enough for this country's preservation efforts — the need is for professional preservationists. With a unique new course, Columbia University is doing something to meet this need.**

BY JAMES MARSTON FITCH

A rapidly growing interest in the preservation of national artistic and historic patrimony is seen today all over the world. It expresses a growing understanding of the importance of the past and of the jeopardy in which modern technology has placed all its material traces.

Ironically, steps to preserve this patrimony have been slowest in our country, where the rate of technological change is most rapid and uncontrolled. Because of the scope and complexity of the problem, preservation in the United States

**The author:** Professor Fitch is in charge of the graduate program of studies in the Restoration and Preservation of Historic Architecture at Columbia University's School of Architecture. A critic and historian, he is a contributor to the professional and scientific press both here and abroad and the author of several books, including the standard history text *American Building: the Historical Forces That Shaped It*.

can no longer be left to volunteers and amateurs—though it must be said that what we have left to preserve is largely due to their efforts!

Professional preservationists must be trained, quickly and in large numbers, if even the present inadequate national and local programs are to be staffed. The need for professionals in this field will be even greater as national programs come into operation.

In anticipation of this need, we decided several years ago to initiate at Columbia University a graduate course of studies in Restoration and Preservation of Historic Architecture. No such courses existed in this country so we had to go abroad to study the training of restorationists and preservationists in foreign lands. I myself have visited some 30 countries in Western and Eastern Europe, the Middle East and Africa; Professor Charles E. Peterson, FAIA, half again as many in the Caribbean, South America and the Pacific Basin. This has given us a fairly comprehensive picture of the legislation, institutions and tech-

niques in use. I might add that in advanced and underdeveloped countries alike there is a striking similarity of the problems as well as the measures taken to meet them.

Most European countries follow the French and Italian tradition of training preservationists and restorationists by the apprenticeship method. Since most of them have long established national institutions, such as for instance the Monuments Historiques and Soprintendenza dei Monumenti, they can accept young architects, art historians and archeologists for a period of internship and field work which is followed by examinations and then certification. Because of this there appears to be relatively little need for independent academic courses.

So far as we have been able to discover, only four institutions offer such a course of study—the universities of Ankara, Rome and London and the Royal Institute of Art in Copenhagen—although many European schools of architecture (e.g. Prague, Warsaw, Rome) have undergraduate classes in measurement and recording of historic architecture. We have studied all these curricula and visited all these institutions. Allowing for national differences, we found essentially the same curriculum in use everywhere. This is reflected in the course work we have planned for Columbia.

The nucleus of our program was to be a one-year graduate option for architects leading to a master of science in restoration and preservation. This is the equivalent of other specialized options currently offered by Columbia's School of Architecture at the graduate level—in urban design, health and educational facilities and architectural technology. In each option the student's course work, including his studio and thesis, is organized around his special subject.

However, it has been apparent from the start that the field of restoration and preservation requires specialists from other areas as well as from architecture. This is reflected in the fact that in most European practice, a team of architect, art and/or social historian, archeologist and even an engineer are assigned to important restoration projects. (In some cases, the teams are assembled for the length of a given project only; in Czechoslovakia they are permanent so that all castles are handled by one team, all churches by

another, etc.) The team practice has been followed by our National Park Service's new office of Archeology and Historic Preservation in the current restoration of Independence Hall.

The need for teamwork suggested the possibility of training specialists together by making the course in the School of Architecture open to graduate students in other disciplines. For purely procedural reasons in any ordinary academic situation, a joint curriculum would have to meet the minimum requirements of the various departments involved—architecture, art history and archeology and social history. At the same time, a number of new courses would have to be created for the purpose and all new students would be required to take these central courses in addition to meeting the minimum requirements for the Masters Degree in their respective faculties.

For all but architects, this would imply a three- or four-semester course of study but would yield a certificate from the School of Architecture in addition to the MA in their own discipline. Using this principle, we have worked out two parallel courses of study—one for architects and a joint one with our graduate Department of History. We are at present developing a comparable one with our Department of Art History and Archeology.

Such joint curricula are, of course, not without their problems. Students coming from different backgrounds of undergraduate work will have deficiencies of different sorts. For example, social historians would tend to be artistically illiterate; hence they are required to take a series of art history survey courses in such areas as history of the house, American architecture, European and American furniture, etc. And both they and art historians could be assumed to need training in basic graphic skills; hence both are required to take descriptive geometry and freehand drawing—which the architects would have had in their undergraduate work. Architects, on the other hand, would have little or no experience in historical research; they are required to do work in historiography with the history department.

The nucleus of our program is a seminar which aims at giving all students a general understanding of the field, of its philosophical and theoretical problems, its historical origins and its present international status. A number of typical restoration and preservation problems are analyzed, ranging from the reconstruction of wardamaged cities to the preservation of isolated monuments, establishment of architectural museums, etc.

Actually, there are many specialized areas in restoration and preservation technology—such as heating, illumination, sanitation, fabrics and furniture and so on—which must be covered. So far, we have only been offering single lectures

by outside specialists in these areas but ultimately they will be organized into new courses.

All students are required to take this seminar. We make field trips to all the different types of restoration and preservation projects. (In recent years, the seminar has visited Boston, Sturbridge, Providence and Newport, Cooperstown, Mystic Harbor, Independence Hall, Winterthur, Mount Vernon, Williamsburg, Charlottesville, Charleston and Savannah.) In addition to such field trips, each student in the seminar is required to do a complete job of research and physical documentation on some historic building. We follow the Historic American Buildings Survey standards in reports and measured drawings.

We have created several completely new courses which all students are required to take. In the "Descriptive Analysis of Historic Buildings" course the student, by means of field trips and laboratory work, is taught to make a thorough and comprehensive survey of actual buildings, analyzing and recording by measurement, photographs and verbal descriptions. Techniques for summary surveys of whole districts, as a basis for broad conservation policies, are studied. Lectures and demonstrations in photography, photogrammetry and surveying are included. Stylistic analysis of characteristic ornament and decorative devices of various periods in American architecture are made to develop the student's ability to make stylistic identifications and attributions.

The course "Technology of Early American Building to 1860" is designed to give the student a factual grasp of the various structural materials and construction methods employed in American architecture from pre-Columbian times up to the appearance of cheap, mass-produced metals and cements at the Civil War. In addition to illustrated lectures by Professor Peterson and visiting specialists, the class develops drawings and scale models of various characteristic structural systems.

Some of the other courses were found ready to hand, so to say, in various departments of the university. Standard features of the art history and archeology department are courses in the "History of the House" and the "Development of American Architecture"; the School of General Studies offers courses in European and American furniture and decorative arts; another, "The Historical Agency in America," is specially suitable for our purposes. Presumably, any large university would offer similar resources in the construction of a program in restoration and preservation.

On the basis of four years' experience, I think we can say that this curriculum, in its broad essentials, is aimed in the right direction. It is

## Projects for Professionals

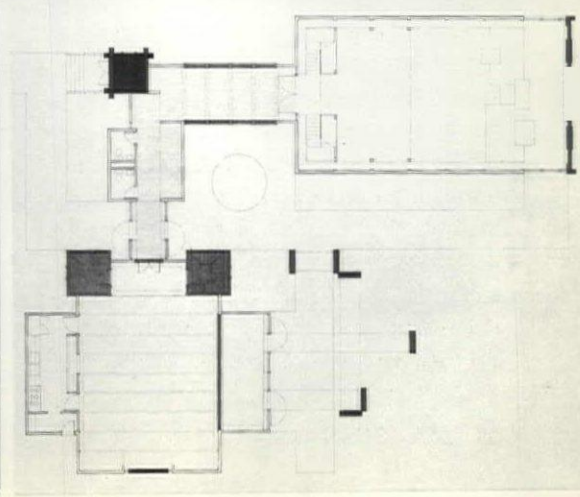
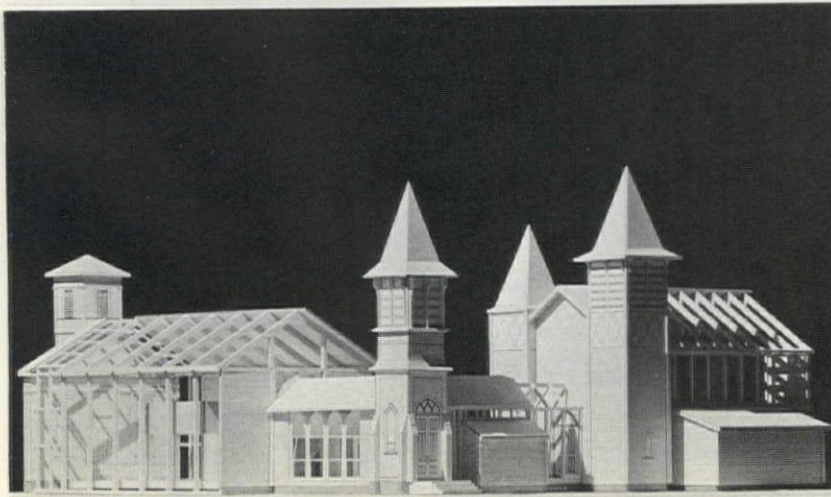
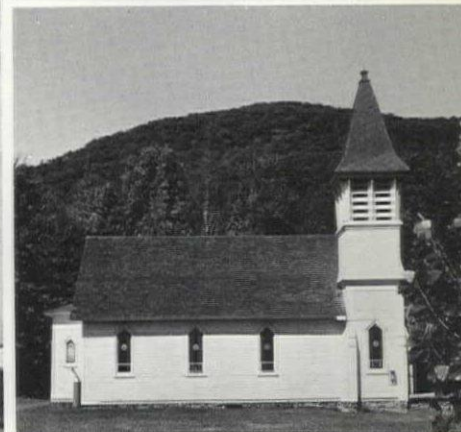
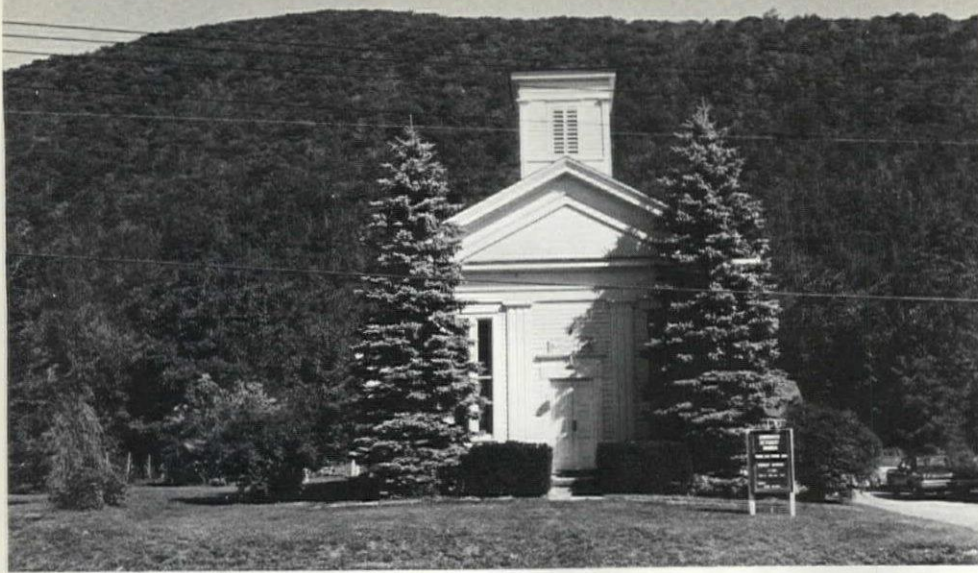
Shandaken, Big Indian and Pine Hill are three adjacent hamlets in the Catskill Mountains of New York State. In recent years the population of the area has dwindled to the point where the local Methodist charge has found it impractical to maintain a church in each village. However, none of the congregations is willing to have its church closed and attend services at the church of one of the other two communities.

As a result, it has been decided to attempt to sell the three churches and, with money from the sales and from contributions, build a consolidated one in a central location.

The unfortunate aspect of this decision is that the three existing churches — which after the sale would surely be destroyed — have architectural and historical value.

Frank Sanchis, graduate student in Columbia's Restoration and Preservation program, proposes that, rather than selling the churches, the architecturally interesting and valid features should be removed, sent to the new site and there be combined with new tissue to create a church which physically expresses the unification of the three congregations.

The bodies of the old buildings could then be patched in where parts had been removed and the shells sold.



Schermerhorn Row on New York City's Fulton Street is 18 slope-roofed houses in the Federal style. Built some 160 years ago, they have been changed by their owners over the years according to needs and fancies and appear, to the untrained eye, rather undistinguished in their run-down surroundings.

But New Yorkers are still attracted to the area and its Fulton Fish Market. It is the last historic site of their city's sailing age.

The fish market, however, has outgrown its Fulton and South Streets location and will move to the Bronx. With this announcement a few years ago it was inevitable that the land in such a coveted area — just south of the Brooklyn Bridge — would set off a tug of war between developers and preservationists. Even with the former offering a reported \$100 a square foot to owners of Schermerhorn Row, the latter, under the leadership of the South Street Seaport, Inc., a nonprofit organization of antique ship-buffs, won out.

The row has now been declared a landmark and will be made into a New York State maritime museum. Old ships will sway in the port — square riggers and schooners that sailed the seas when South Street was known as the Street of Ships. Columbia graduate student Craig Morrison proposes here a way to restore the row for museum use.





also encouraging to see the ready employment which graduates are finding with such agencies as The National Trust, National Park Service, New York State Historic Trust, New York City Landmarks Commission, Society for Preservation of New England Antiquities, Nassau County Historical Commission, etc., and with architectural firms specializing in historic preservation.

It has been especially rewarding to see the way that architects and art and social historians profit from joint work on various class projects. Many of the young architects who have taken this course have done so not because they plan to become restorationists exclusively but rather because of the relevance of the subject to any urban problem today, especially in urban renewal. Surely, a developed sensitivity to the past cannot but enrich the work of modern designers. On the other hand, we have made it a matter of policy in the studio that, in the student's design work, proposed alterations or additions to historic buildings must be clearly contemporary. Under no circumstances are historico-stylistic elements to be simulated in the new work. While the restoration of missing elements is to be archeologically accurate, the student is urged to work for congruency, not imitation, in any new elements of plan or structure.

But our experience is also sufficient to show that many problems remain to be solved. There is outstanding need for:

- several new courses, including those in historic gardens and landscapes; historical development of technology as it applies to architecture; industrial and military preservation; photography, photogrammetry and surveying; etc.
- texts, slides and study materials and teaching materials generally
- travel, field work and on-site apprenticeship in both museums and actual projects.

The last will be the most difficult to organize since it undoubtedly involves cooperative arrangements with other universities, museums and independent organizations. It raises not only questions of timing and expense but also of academic accreditation for such field work, apprenticeship or internship. It is our feeling that, ultimately, at least two summers' travel and field work ought to be prerequisite to the degree. We are also of the opinion that the course for architects should be extended to two years, with two full summers of work an integral part of the course. The degree in this case might be a new one — Master of Science in restoration and preservation. But before such requirements can be introduced, the school must make it possible for the student to meet them.

The cost of education is already so high that most students must find lucrative summer jobs to

help with their expenses. High salaries are of course nonexistent on most archeological digs. Somewhat better-paying jobs are a possibility at such institutions as Cooperstown, Shelburn and Williamsburg. HABS has need of a certain number of qualified students for its different field researches, and these will presumably increase. Generally speaking, it appears to us that the school must assume responsibility for organizing and finding the necessary subsidies for such in-field activities. Travel to various types of institutions, sites and projects during the school year is also indispensable.

Perhaps the greatest problem of all is philosophical: How can we preserve the past without prettifying it?

Obviously, any sort of preservation or curatorial activity involves selection, editing, censorship. Not all of the history of any given building can be displayed any more than all the manifold activities it housed at any given moment can be recreated. And there are both practical and esthetic reasons why all of the past cannot be put on display.

Sanitary considerations keep the wandering cattle, pigs and geese off the streets of Williamsburg. Convention prevents the hideous fact of slavery — the real substructure of Monticello and Mount Vernon — from being displayed alongside the visible apexes of upperclass life which it supported. (It is interesting in this connection to observe that preservationists and curators in the Communist countries follow the same policy. The cumbersome apparatus of serfdom which was essential to the existence of the royal palace of Wilanow near Warsaw has completely disappeared in a modern collective farm while the palace itself has been most ingratiatingly restored. The same unexpected oversight of the plight of the peasantry strikes one in the restoration of the imperial summer palaces of Catherine the Great outside Leningrad. The palaces proper have been immaculately restored and refurnished after the Nazi destruction, but the great service apparatus of kitchens, stables, out-houses, etc. has not been placed on show.)

Whatever the motivation of preservationists — patriotic or pietistic — this tendency toward isolating the monument from its historical matrix, of regarding it only as an object of beauty purged of all its mundane or unattractive aspects, seems an occupational disease. Surely the resources of modern educational methodology, of audio visual technology can be better employed to make vivid the results of modern historiography. Somehow specialists in the field must find better techniques to present a more balanced version of the facts with which modern historiography and archeology now afford them. □

BY PAUL B. FARRELL JR.

**Architecture today is being viewed more and more as a series of capital investment decisions which must be made by many individuals who are not architects. In particular, the management economist in business and government has developed a variety of sophisticated decision-making strategies to plan and control the cost, time and quality of these investments in buildings of all types. It would be well for architects to have a working knowledge of the terms and concepts that make up this new vocabulary and an understanding of the total process of capital investing as introduced here.**

As building projects become more costly and more complex with each year, there is a pressing need for improving the process of planning and constructing capital investments as these examples suggest:

- The US Post Office Department's efforts to plan and control a \$400 million annual construction budget, occupying a new building every three days
- The Rouse Company's planned development for 100,000 people in Columbia, Maryland, where land alone cost \$25 million
- The planned New Jersey jet airport development involving hundreds of interested persons, airlines, government agencies, unions, contractors, professionals, businesses and an investment of \$663 million
- General Motors' budget of \$400 million for capital expansion in 1969, much of which will be developed by their in-house team of over 300 realtors, accountants, architects and engineers.

The opportunities and problems generated by each of these examples are rapidly becoming the

**The author:** Mr. Farrell, an attorney with Smith, Hinchman & Grylls Associates, Detroit architects-engineers, is the author of a companion primer, "Financial Analysis of Real Estate," which appeared in the AIA JOURNAL for August 1968.

rule rather than the exception. Along with all this has come a working vocabulary of the new group of investors and management economists responsible for the flow of the investment decisions necessary in the creation of much of today's architecture.

Behind such terms as capital budgeting, profitability indices, cost/benefit analysis, risk simu-

lation, construction management services, etc., is a powerhouse of concepts and techniques which are revolutionizing the practice of the architect. What do these terms and concepts mean—and more important, how are they related to each other? The chart on the following pages graphically illustrates the relationship of many of the concepts defined in the text.

### **Management Science**

This is a generic term describing, in a broad sense, the study of human behavior in organizations—the process of executive decision making in particular. It includes most applications of scientific methods (statistics, economics, computer sciences, etc.) which are intended to improve organizational effectiveness.

### **Economics**

Allocating scarce resources among competing alternative uses of those resources is a science in itself. Both private and public organizations are constantly making economic decisions which involve many diverse alternatives (payroll increases, weapons systems research, recreation facilities, welfare clinics, highways, etc.). Thus the questions arise: How do we decide among alternatives and what is the best combination of expenditures given our limited resources?

### **Decision Making**

A process of rational thought, it proceeds generally in these five steps: 1) collection of relevant information about past and future trends, 2) setting objectives for performance of results, 3) development of criteria to measure the estimated performance of alternative methods of reaching the objectives, 4) generation of alternative solutions and 5) a strategy to act on the decisive alternative. In addition, the process of decision making includes various management techniques of integrating a series of decisions.

Each of these five elements recurs repeatedly in the vocabulary of the management economist. "Return on investment" is a widely accepted criteria for measuring the performance of an investment program. "Management information systems" are intended to collect and report information relevant to managers responsible for making decisions. "Project management" is a strategy or plan of action intended to assist managers in controlling a complex series of related decisions. In fact, it should become more obvi-

# Planning of Capital

ous as we proceed, that these three terms 1) return on investment, 2) management information systems and 3) project management are probably the three most central concepts to the process of planning and controlling capital investments in architecture.

### **Return on Investment**

In its most rudimentary form, return on investment (ROI) is simply the "profitability" of the investment. And regardless of the organization of the project, this ROI criteria may be used to test the many decisions made in the process of creating the actual investment, be it public housing, a power plant, hospital, office building or research center.

In recent years the return on investment criteria has been applied across the board in numerous government and business situations. The uses of this criteria have definitely not been restricted to profit-making, taxable organizations as the following three comparisons will illustrate:

*Revenues or Benefits:* An investment of \$5 million to construct a research laboratory will require the same outlay of investment cash whether invested by the federal government or a private contract research organization. However, the returns estimated by public and private organizations will be calculated differently. The private research organization will be estimating the actual dollar value of future contract revenues, while the government, which will not be receiving any direct income from its research, must estimate the value of the benefits (perhaps a reduction in change orders) to be received from this research. Either organization will have similar problems estimating capital and operating costs. The same analytical problems arise with public housing investments and other social programs.

In cases requiring the estimation of noncash benefits it is possible to begin with 1) operating costs (including estimated research payrolls), 2) the capital investment and 3) a desired return on investment rate, and then determine the cash equivalent of the annual benefits necessary to justify the investments. This method would give management decision makers a basis for comparing one alternative investment to others. For example, in public housing policy decisions where the cash rents are insufficient to return an adequate profit, a similar analysis can be used to test alternative ways of supplying the cash for

the additional amount required. These alternatives might include direct rent subsidies to tenants, reduced interest rates or land write-down subsidies.

In brief, then, it is not essential that a project must generate actual cash benefits before the ROI concept can be used as a criteria for testing the profitability of the project's investment.

*Nonprofit or Taxable:* A return on investment ratio can be calculated for the investment decisions of nontaxable organizations (including governments) in the same manner as a ROI for a taxable organization such as Litton Industries. The data necessary to calculate the inputs may vary, but the calculations are similar. In fact, the absence of the effects of taxes tends to simplify ROI calculations for nonprofit groups. However, this statistical advantage is likely to be offset (particularly in the case of nonrevenue producing government projects) by the fact that intangible benefits (the values of public housing or weapons systems research) must be estimated.

*Source of Financing:* An organization is likely to finance a capital investment in one of three basic ways, each of which will permit the calculation of a rate of return on investment:

*Project Financing*—In many cases, particularly with smaller business ventures, each new capital facility will be specifically financed by borrowed debt in which case the future return of that particular investment will be affected by the method of "servicing" or paying off that borrowed debt. For example, a debt of \$10 million borrowed for a term of 20 years at 8 percent interest would require a constant annual repayment of about \$1 million for 20 years. This payment is the "debt service." However, when this debt service is paid to the lender each year only the interest part of the debt service is deductible for tax purposes.

Thus the taxpayer must pay taxes on that part of the debt service which is a repayment of the outstanding principal debt. The taxpayer can also deduct depreciation (which in the early years of owning a project usually exceeds the principal repayment or "amortization" part of the debt service). However, depreciation is not based on the amount of borrowed debt but on the total cost of assets. In addition, the depreciation and the interest deductions are likely to be declining each year of operations, in which case if nothing else changes the taxes will increase and the return on investment will decrease each year. Even though

these tax and financing complications do affect the calculation of return on investment, this does not diminish the fact that it is possible to develop such a rate of return for a project financed by debt specifically borrowed for that particular project.

*Corporate Financing* — Large corporations borrow from the general public to cover most of their financial requirements. Thus a large corporation such as Standard Oil may never specifically finance any particular investment project with borrowed debt. As a result, the effect of varying interest payments are not accounted for in return on investment analyses made by large corporations. Rather they will be, in effect, investing 100 percent of their own equity funds in a project. They will, however, still account for depreciation and taxes in developing rates of ROI for particular investment opportunities, and will also account for the cost of corporate borrowing from the general public in their selection of a desired rate of return on all investment.

As a result of these differences, even though rates of return on investment will be developed for both individually and corporate financed project, some care should be used when comparing rates of return of one to the other.

*Government Financing* — In financing government investments out of general revenues, the effects of tax depreciation, debt services and other tax considerations are not directly relevant as they would be in either of the two prior methods of private financing. The calculation of return on investment is, therefore, simplified to the extent that these items need not be calculated. Where a government project is financed through bonds issued by an authority created for a specific purpose (public university construction, or toll roads), the repayment of the principal debt borrowed and the interest on the bonds must be deducted from future revenues to determine the net return on investment.

In summary, then, the type of organization and its source of financing a particular investment project does not eliminate the possibility or the necessity to calculate a return on investment which will then permit all investments to be evaluated by this one common economic criteria, the rate of ROI.

### **Economic Life Accounting**

The idea of analyzing a project's return on investment for the entire life of the project is an important objective of the management economist involved in planning and managing today's capital investments in architecture.

It is not uncommon for the initial capital costs of a project to be less than 5 percent of the total operating funds spent by the organization occu-

pying that facility for an extended period of time. This is true of government office buildings, colleges or airports. A \$10 million research laboratory could easily be expected to have an annual payroll expense of at least \$10 million each year for the 20 or more years it may be expected to produce economic benefits for its owner.

The decisions affecting a capital investment in architecture must be set in the broader economic context of their effect on the net revenues or benefits generated by the user organization over its period of ownership of the facility. In most cases "economic life" will be different from three other "lives" of the facility:

*Physical Life:* Many buildings may physically exist for 100 years or more. The physical life of the building is not its economic life to the owner.

*Debt Term:* The fact that money borrowed to finance a facility must be repaid in 15 (or 30) years does not affect its economic life.

*Depreciation:* A taxable corporation may deduct a portion of its investment over the "useful life" of a facility. Typically this is assumed to be about 40 or 50 years for tax purposes.

The economic life of an investment is that period of time during which an owner expects the investment to generate profits or benefits. Thus if an apartment building developer expects to sell his investment in 10 years, the economic life of this project is 10 years even though it has 1) 90 years of physical life remaining, 2) 20 years of debt payments left on a 30-year mortgage and 3) 30 years of depreciation remaining on a 40-year useful life.

Perhaps the key result of focusing on the return on investment over the economic life of a project is this: The facility design with the minimum initial cost will (in all probability) not be the best investment. Yet focusing on this broader context is not without its problems. The management economist must now struggle with the problems of developing reliable methods of predicting future operating costs and benefits (or revenues) in order to calculate the return on investment. To name a few: labor rates for maintenance personnel, comparative cleaning costs of various floor surfaces, future rent levels or interest costs on future refinancing each may be key variables depending on the project.

### **Cash Flow**

The ROI of an investment opportunity depends on both the return and the investment. Projects such as apartment buildings, contract research labs and airports will generate dollars of revenue (from concessions, rents or landing fees for airports). The return on investment of these projects is frequently considered that amount of money or "cash flow" remaining after all annual

obligations (taxes, debt service and operating expenses) are paid. Therefore, cash flow is not the same as the after-tax income computed for federal tax purposes. Ideally, the after-tax cash flow of a project will be greater than after-tax income (often because of depreciation deductions on capital assets). Cash flow is the annual amount of actual cash generated by a particular investment and available for reinvestment. The term cash flow is also used to describe investment outlays in which case a distinction should be made between cash inflows (net revenues or benefits) and cash outflows (investments).

### Benefits

The return on investment may require calculation of part or all of the return based on noncash or intangible benefits rather than cash returns. A private contract research organization may want to compare two facilities' plans with the more costly one designed to provide an office with an exterior office with a window for each researcher. The effect of such a design on the performance of researchers is essentially indeterminate. However, it is possible to estimate the annual benefits necessary to justify the additional investment in the more expensive alternative. These benefits can then be translated into a dollar amount and compared to the total payroll for research personnel, thus giving some basis, other than minimizing initial cost, or intuition, for evaluating the capital investment.

### Cost Effectiveness Analysis

This type of analysis (also called "cost/benefit" analysis) is a variation of the basic return on investment analysis, so named because benefits rather than revenues will be generated by the project. Thus, for example, for an estimated cost of weapons system research, what is the value of the results or benefits (enemy losses, strike power, kills, etc.). Given the cost effectiveness indices of several alternative weapons systems, it is then possible to decide which ones will have the highest payoff in terms of dollars invested. Cost effectiveness studies might also be used to evaluate alternative ways of:

- subsidizing public housing
- providing grade intersections on interstate freeways
- comparing alternative redevelopment plans
- providing medical services to indigents.

We find that cost effectiveness analyses are often either 1) a part of the capital investment decision process of government organizations or 2) a term used to describe any economic analysis comparing two or more alternative solutions involving intangible or indirect benefits.

In many private capital investment decisions

such as office buildings, manufacturing plants or single-family residences, the developer's objective is to make a maximum cash return on investment. This objective is directly related to his criteria for deciding among investment opportunities. However, where there is a large amount of noncash benefits, a return on investment or cost effectiveness ratio will not be a completely reliable criteria for managers responsible for the investment decision. Nevertheless, such criteria are a useful beginning point for management judgments.

### Present Value Analysis

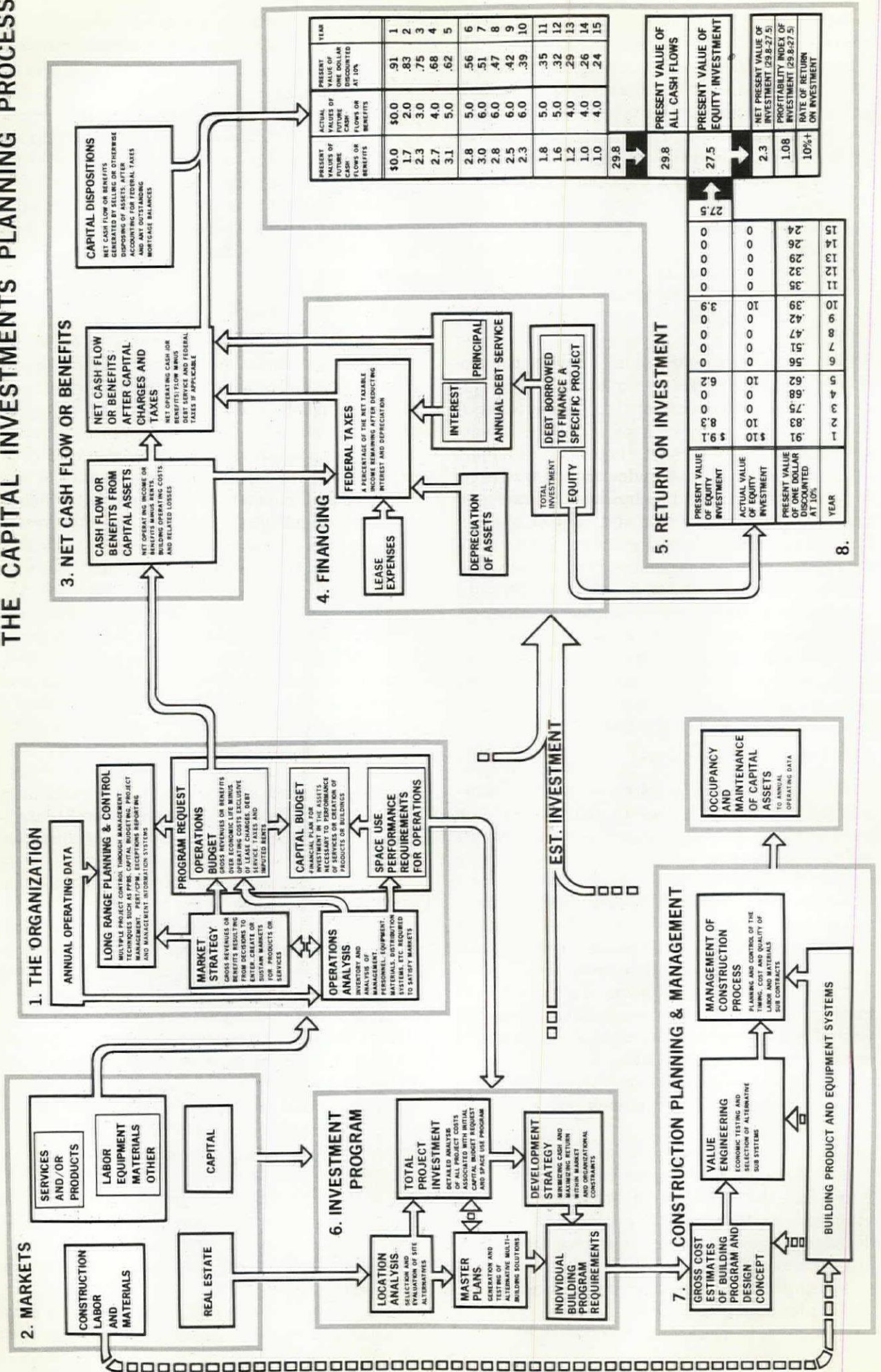
The terms cash flow or benefits refer to the actual value of something received at some future time during the economic life of an investment. However, most of us would prefer to receive \$1,000 this year rather than in 10 years, i.e., cash received in the future is not as valuable as cash on hand, and the farther off the payment the less valuable that payment. In other words, future money received has a time value. A dollar can be received in a year by investing about 94 cents at 6 percent today. And a dollar invested today at 6 percent will return \$1.13 in two years. Once we determine 1) the economic life of an investment, 2) the investment costs and 3) the cash flow benefits, it is possible to calculate the rate of return on investment for any capital project. In the example on the chart, the economic life is 15 years. The actual investment costs are estimated to be \$10,000 in each of the first, second, fifth and tenth. However, the present value of this particular series of four \$10,000 investments is only \$27,500 when discounted at 10 percent. (Parenthetically a higher discount rate would result in a lower present value and visa versa).

The actual value of the annual cash flows or benefits of this example are also shown for the 15-year economic life. The total of the present values of these 15 annual cash flows or benefits is \$29,800. In brief, then, the present value of our cash flow is greater than the present value of the investment, so the investment would be acceptable (if the rate of discount used is adequate).

Given the present values of both the cash flows or benefits and the investment it is possible to develop various indices of the return on investment. Thus 1) if the "net present value" (i.e., the difference between the present values of the cash flow and the investment) is a positive number and 2) if the "profitability index" (i.e., the ratio of these two present values) exceeds 1.00, we at least know that the investment will have a rate of return in excess of the discount rate we used to determine.

Many large organizations in business and government will frequently make capital budget de-

# THE CAPITAL INVESTMENTS PLANNING PROCESS



decisions by using "net present values" and "profitability indices" as substitute criteria for return on investment. They will set a minimum desired investment return of 10 percent (for example) and select any project with a positive net present value and a profitability index in excess of 1.00 because the occurrence of either of these conditions would mean that the project had at least a 10 percent return.

Where an investor wants the exact rate of return rather than some substitute criteria, it would be necessary to discount the actual cash flows at least twice in order to find (by interpolation) that discount rate which will make the net present value equal zero and the profitability index equal to 1.00. This, of course, requires additional calculations, which would be avoided by those familiar with using the substitute indices.

### **Capital Budgeting**

The process of capital budgeting is a method of financial planning used by business managers responsible for the analysis and control of many capital investment decisions. Capital investment decisions include various other decisions in addition to the analysis of new facilities. Also included are these:

- lease or purchase of equipment
- debt refunding
- replacement or relocation
- rehabilitation

A capital budget for an investment in architecture would include an analysis of 1) the investment required, 2) the cash flows or benefits anticipated over the economic life of the investment and 3) the rate of return on this investment based on a present value analysis. The managers of a private business corporation could then allocate its total capital resources among the various budget requests. The selection would be based on the return on investment rates of each specific proposal, and other management criteria.

### **Marginal Economic Analysis**

The process of capital budgeting always requires the comparison of the return on investment of two alternatives. For new facilities the alternatives are to build the facility or not to build it. Only one involves new investment of capital.

Often the management economist will want to compare the relative advantage of two investments or other alternatives by developing a net return on investment rate for the alternatives. For example, new weapons systems research capacity can be provided in various ways:

- let another organization do the research under a contract
- rehabilitate existing facilities

- lease new space from others
- relocate other subunits of the organization and occupy their space
- construct an addition
- build a new facility.

Any two of these alternative decisions could be compared. When doing so the key is to compare only the differences between them. For example, if a new building costs \$10 million and the present facilities 1) would cost \$5 million to rehabilitate and 2) if they are vacated to other uses by constructing new facilities, a benefit of \$3 million would accrue to the organization; then the marginal investment of the two alternatives (build new or rehabilitate) is only \$2 million, i.e., the investment cost of building a facility is only \$2 million more than rehabilitating the existing one.

In addition, it would be necessary to look at the cash flow or benefit side of the return on investment calculations for these alternatives. Perhaps, for example, the only differences would occur in the fact that the new facility would require 5 percent less personnel than the present rehabilitated in which case an annual dollar savings or benefits (over the economic life of the project) would be calculated and compared to the marginal investment of the two alternatives.

Other potential operating costs or benefits might be: reduced walking time for personnel, maintenance costs, annual remodeling costs, or additional security requirements, fire risks or payroll recruiting costs.

### **Value Engineering**

This type of analysis is another form of marginal economic analysis. The term is typically used where, for example, the performance specifications and design concept of a new facility or computer have been developed and component hardware equipment and materials must be tested and selected to build the facility or computer. Architects and engineers are constantly performing value engineering analyses during the working drawing and specification stages of a project. The key is to develop this method of analysis using reliable data on the total capital and operating costs of the item over its economic life.

### **Management Information Systems**

One of the newer terms in the management science vocabulary is management information system (MIS). Generally an MIS is any system of collecting and storing information relevant to the decisions of an organization's managers. There may, therefore, be several such information systems within an organization; for marketing, payroll, inventory control, project status, quality control, etc. In a broad sense, a capital budgeting system is a management information

system for planning and controlling investment decisions in business organizations.

Ideally, a management information system for architectural investments would integrate all the elements noted on the chart. Information from one or more investment projects at various stages of development would be stored and reported to the proper managers in sufficient time to permit them to make decisions or review prior decisions by other managers involved in the process. In other words, some of the inputs of the marketing, finance, property management, engineering, construction supervision and other organizational divisions involved in executing the decision to create and occupy a facility or facilities would all be integrated into the capital investment planning MIS. Moreover, the system should be designed to permit a series of progress reports which periodically update initial capital budget requests as various decisions are made (site acquisition, lease or buy, master planning, design budget, etc.) with the reports being checked and reviewed by all divisions involved.

### **Exceptions Reporting**

An MIS involves 1) a data bank for storing information and 2) a reporting system. Reporting systems frequently are designed to report only the unique or problem situations to higher levels of management. The assumption is that if the managers directly responsible for a project are doing an adequate job, then their superiors would be wasting their time to interfere with projects which are running smoothly. The definition of an "exception" depends upon the types of decisions which should be made by senior managers and should be tailored to suit their needs. For example, a top manager in charge of the construction of several dozen facilities may only want information on those projects which have been behind schedule more than one month for two consecutive reporting periods.

### **Simulation**

Another broadly defined term is simulation. An architectural designer's styrofoam model is one form of simulation. However, in most business applications the term typically refers to a mathematical representation of some organizational function; the objective of simulation being to test an alternative before a decision is made. Any time prior to actual occupancy of a new facility the return on investment could be calculated based on information then available. This would be a simple form of simulating the actual future return of the project. Among the more sophisticated forms of simulation:

- Risk simulation techniques could be used to show the effect of changes in operating costs,

interest rates, etc., on the projected return on investment.

- Random number techniques are used to test the effect of airline schedule delays on parking and other terminal requirements.

- Business gaming permits managers to simulate the monthly status of an organization based on a series of future decisions in which the output of one month is the input of the next month.

Perhaps the most important aspect of simulation in the planning and control of capital investments in architecture is that simulation models can be created to test the economic feasibility of a proposed architectural facility at any stage of design from initial programming and budgeting to later master planning and conceptual studies.

The key is to design the simulation model so that reasonable planning assumptions are automatically made by the computer, unless others are inputted by the person simulating a project. These assumptions could range from interest rates to building code requirements, elevator designs to net gross ratios, construction escalation rates to parking requirements and lighting requirements to rental rates. Thus at any step of the planning, programming, budgeting and design process, it would be possible to simulate a return on investment from data about the cash flow or benefits and the investment.

### **Planning/Programming/Budgeting System**

Basically, PPBS is a form of capital budgeting applied to government budgeting. The government, however, has developed this system to compare all operating programs (including those which require capital investments) in the process of monitoring a PPB system. Once a program, such as a weapons system development program, progresses to a point where new facilities and equipment are essential to support additional inhouse research personnel, then the PPB system would include one or more particular capital budget analyses or cost effectiveness studies of the investment. In another sense a PPB system is a management information system designed to monitor a multitude of programs and projects by looking at their long range operating and capital investment costs in order to create maximum return on the total government investment.

### **Project Management**

The concept of project management is equally applicable to single large projects (such as a half-billion-dollar airport) and the process of controlling a continuous series of projects such as those programmed and constructed by the postal service. In either case, it is essential that the information and decisions of many organizations and their divisional units be coordinated to as-



sure adequate planning and control of the time, cost and quality of each project and its component parts.

The development of the project management concept is integrally related to the development of CPM (critical path method) and PERT (program review and evaluation technique), both of which are sophisticated techniques used in planning and controlling complex projects. PERT, for example, was developed in 1958 to assist in planning and control of the Polaris missile program. Project management requires both 1) a system of information as a basis for integrating a large amount of information and many decisions and 2) a team of managers responsible for the execution of the total project.

### Construction Management Services

When project management techniques are applied to the planning and control of construction projects, we have the basis of a construction management service. At a minimum such a service would require an information system which could project such things as:

- the timing of various material deliveries, architect's decisions and cash requirements for the owner,
- manpower needs and overtime requirements,
- lead and lag in schedules,
- cost estimates and budget overages or underages.

Construction management may also include other services in addition to the planning and controlling of time and cost. The construction manager may also 1) control the quality of construction by supervising the performance of labor and materials subcontractors or 2) purchase materials for the owner or 3) work as a part of the design team estimating initial costs and performing value engineering during the working drawing phases.

However, the basic service of the construction manager is the planning and controlling of the timing schedules of the various construction contractors.

### Systems Management

Like much of the "systems" jargon, this relatively new term is vague (if not already hackneyed). The objective of systems management is to create a totally integrated process of planning, scheduling and controlling the operations of an organization. This immediately includes capital budgeting, PERT, PPBS and management information systems to mention a few other concepts. The systems manager is specifically interested in improving the procedures used by an organization such as a mass volume home builder or the Veterans Administration's hospital programmers.

To return to the original statement, architecture is a capital investment. Given unlimited cash and time, it is highly probable that most architects and engineers could produce a facility which would either directly satisfy the user organization or indirectly permit the user to adjust itself to a more efficient operation. Unfortunately, neither time nor money is unlimited.

As a result of these economic restraints and organizational necessities, many individuals — the management economist in particular — are responding to develop systematic techniques to plan and control capital investments in architecture. While the probabilities are not great that the architect will be the lead manager in this process, that possibility nevertheless exists. In either case, he needs to have a basic understanding of capital investments planning and its vocabulary. □

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# BEHIND THE IRON CURTAIN

## The Good and Bad of Planning and Design

BY MORRIS KETCHUM JR., FAIA

Last fall a group of Institute members made a tour of Russia and one of its satellites, Hungary. "We came back," says Ketchum, co-chairman of the trip with Archibald C. Rogers, FAIA, "with qualified respect for Soviet architecture and admiration for their urban design, but with a definite dislike for the barren monotony everywhere in this one-class society."

It all began when Professional Seminar Consultants, a travel agency which conducts tours for American professional groups around the world, asked me to help them organize an architectural trip to the Soviet Union scheduled for the first two weeks in September. We accepted because we felt that this unique opportunity to analyze current developments within the profession at first hand, both in Russia and one of its satellites, Hungary, was not to be missed.

Since American architects have had little or no familiarity with their Soviet counterparts or their work, we would have literally the first face-to-face contact on a group basis. We hoped that a friendly and objective interchange between professionals of two such radically different and competitive societies might help both to more clearly understand each other's strengths and weaknesses.

The itinerary — Moscow, Leningrad, Budapest, Vienna, including seminars with the architectural societies, attendance at operas, ballets and circuses, visits to museums and general sightseeing — was arranged and approval of The American Institute of Architects obtained. More than 80 AIA members plus wives and college-age children — a total of 132 — had signed up for the trip by August.

Then the blow fell. Four days before our scheduled departure, Russia occupied Czechoslovakia. Cancellation of the trip was seriously considered but the State Department told us that it was more important to American interests to preserve the cultural bridges between the two countries than to register disapproval of Russia's action by cancellation of the tour. The Russian Intourist guide agency assured us of an official welcome. We therefore went ahead in spite of our profound sympathy for the Czechs, resolved not to discuss international issues at professional meetings because we would be, in a sense, the guests of Russian architects who might then be penalized by their own government.

From the time our KLM plane arrived in Moscow to the day we left Budapest by Danube hydrofoil boat for Vienna, our reception was cordial and everything efficiently organized. Our accommodations, including the huge Hotel Rossia in Moscow — nicknamed Comrade Hilton by the Russians — the ancient but palatial Hotel Europe in Leningrad and the art moderne Hotel Gellert in Budapest, were above average. The food was good, as were the arrangements for tours, transportation and entertainment.

We were permitted to move about the Soviet cities by ourselves and freely photograph the urban scene, which resulted in the illustrations for this article by Harris Armstrong, FAIA.

At the Soviet-American architectural seminars, Archibald Rogers led off with a sparkling slide talk on the historical development of the urban design of American cities. I then presented my own selection of recent American projects, chosen to illustrate outstanding achievements in architecture. The Soviet architects responded

**The author:** Mr. Ketchum, Institute past president, is head of the New York architectural firm bearing his name. He is the author of *Shops and Stores*.

with slide talks and color films showing their own work in historical preservation and restoration, in current building and in urban development.

In spite of the language barrier, bridged by interpreters, both groups were gratified by the presentations.

Since architecture has always been a prime interpreter of the social, economic and political forces shaping civilization, I was vitally interested in what Soviet architecture might tell us about Soviet society. Rogers made this comment:

"While the architecture seemed somewhat heavy-handed, due perhaps to its over reliance on industrialized building, the newer architecture executed during the past five years is very evidently concerned with design quality to a degree not evident in the immediate postwar 'catch-up' period.

"Ironically, this last point surprised me unpleasantly. Because this higher quality of design is one of many symptoms which we noted of a changing order of social and economic values in the Communist countries, and it is these changes which constitute not only the greatest hope for a future rapprochement between East and West, but also an immediate threat to the shaky peace we now have.

"It seems unfortunately clear that the present managers of the Russian society have opted to put down the forces of change and to maintain the Communist system unaltered. If this is so, and the Czechoslovakian invasion supports this read-

ing, we may be headed into the most dangerous period of East-West confrontation since the end of the war."

Francis Gassner, AIA, a member of the tour, had this view on the basic aspects of the Russian social structure: "My most fundamental impression of Russian life was its seeming lack of diversity. All activity — economic, cultural, educational and professional — is under the control and influence of the government. There is no private ownership and everyone works for the state. Clothing stores all sell the same styles. Appliance stores feature the same models. There are no rich, there are no eccentricities, there is none of the high style that characterizes London, Paris or San Francisco. There is a constancy, a sameness, that is alien to the American spirit. In balance, however, there is no poverty and there are no slums. Russia is a stable society and the people look to the future with hope." I would add that everyone, native or foreign, guards what they





*Moscow's Hotel Rossia behind a church under restoration and right, top to bottom, the monotony of the new; Palace of the Congresses, the only modern building in the Kremlin; the Red Square with Lenin's Tomb in the foreground, a Stalinist wedding cake skyscraper in the background; and the canal at the Palace of Peter the Great, Leningrad.*

say — a reflection of the fact that they are either living in or visiting a police state.

It is 50 years ago now since the Communist regime took over Russia, not only the government but also the art, literature, music, theater, opera, ballet and architecture of Czarist days. It has carefully preserved, restored and developed all the cultural elements thus gained, including every aspect of native architecture from medieval to modern times. All this is clearly reflected in their buildings and their cities.

Russian architecture, which went through its own period of eclectic expression — the Stalinist “wedding cake” style skyscraper — has emerged in the last two decades as international, contemporary and adequate, but not outstanding. It is now striving to achieve a native flavor of its own but still lacks boldness, variety, color and technical accomplishment even though it has gained immensely in sophistication.

Urban design impresses greatly by the scope and competency of Russian planners. Moscow is the outstanding example of this. Situated on a rolling plain at the junction of the Moscow River and the Moscow Canal leading to the Volga, the city is built in large concentric rings around the colorful centerpiece of the Kremlin and Red Square. The ring boulevards correspond to former lines of fortifications. A circular highway almost 70 miles long bounds the city core about 10 miles from the Kremlin.

Beyond is a wide greenbelt of open fields and forests similar to those of London and Stockholm. This greenbelt penetrates the city along every highway radiating from the Kremlin in a Russian version of the finger plan. These green streets and

Moscow's innumerable large and small parks have been called the “lungs of the city” by a Russian architect.

Russia is now entering the automobile age with about 300,000 cars in Moscow alone. There is no traffic congestion or serious parking problems as yet, but there is a need for large scale highways, similar to our interstate routes, to connect the capital with other major cities.

Unlike our highways, these will not carve the city into fragments. Instead, they will go underground as they enter the metropolis and emerge as they leave. En route, they will feed numerous underground parking areas situated at strategic points and doubling as bomb shelters. In company with the famous Moscow subway, this new motor traffic network will serve both transportation and defense.

At the outer edge of the great Moscow greenbelt is a continuous circle of small factory towns connected to the central city by interurban surface railroads. This planned dispersal of industry almost entirely eliminates smog around Moscow.

Since there are no outdoor billboards or advertising except for murals celebrating Soviet philosophy and Soviet feats, no eyesores mar the streetscape. Moscow lacks the visual excitement of Times Square but has an indisputable serenity.

This serenity is overemphasized by the bland, almost colorless facades of the new construction. Although we saw Russia during an early fall heat wave, snow must further emphasize this colorless mediocrity, so different from the Kremlin's ancient monuments with strong reds, yellows and blues set off by white trim and golden domes.

This also holds true in Leningrad, except that there the entire central city — of canals and waterways, parks and palaces — is a well-preserved and restored historical monument of the 18th and 19th centuries. Here, these same vivid colors prevail throughout the heart of the city, but the new, drab suburbs and industrial centers are set far out along the urban perimeter.

Budapest, heavily bombed during World War II, has followed the same pattern of rebuilding and restoration. Well-planned new communities are located on its perimeter. The natural charm of its setting along the Danube, which divides Buda from Pest, adds flavor to the entire city.

In all these cities, the following stand out:

- There is no new construction of private homes except for government-owned vacation cottages. Only apartment dwellings, usually with a living/



dining room, one bedroom, kitchen and bath, go up by the mile. With the abatement of the most crucial housing shortage, the number of apartment bedrooms has been expanded.

- Vast resort hotels serve workers on vacation.
- Plumbing is a definite technical failure.
- Shopping centers bear no relationship to those in the US but are really just huge, covered markets, accessible to pedestrians but with no provision for parking.
- There is an abundance of tree-lined streets, enormously wide boulevards with pedestrian underpasses and parks, both large and vest-pocket.
- The cleanliness of streets, boulevards and parks is remarkable.
- There is an absence of air pollution owing both to fewer motor vehicles than in America and to the deliberate dispersal of industrial plants outside the cities.
- The almost complete absence of advertising signs and billboards rids both the urban scene and the highways of visual blight.
- These river banked cities have summer time commuter boat and hydrofoil service.
- Almost all old churches, no longer used for religion, are preserved as museums.
- There are excellent industrial plants, fine hospitals, good educational facilities, huge stadiums and many outdoor swimming pools, some heated in winter.

Achievements in city planning and facilities are not balanced by the quality of architectural design and construction. Soviet builders have chosen to sacrifice everything to speed in order to house the millions left homeless after the last World War. Installation of mechanical equipment is shoddy and careless, building craftsmanship has deteriorated. Repetitive and uniform housing slabs become monotonous, choice of materials and colors are unimaginative.

Soviet technology is at its best in the use of pre-cast concrete wall units. These 12-inch panels have interior insulation and finished exterior and interior surfaces. They are used as bearing walls for multistory buildings, often as high as 10 stories. Soviet architects have used these construction methods with great courage, energy and imagination in rebuilding the devastation of war.

When it comes to urban planning, the essential difference between ours and theirs is that theirs does not have to respect the conflicting demands of private enterprise. With absolute and centralized governmental control they have made more rapid progress in achieving most of the universal objectives of intelligent urban design.

On the other hand, with our firm belief in our own economic system, we must create organized urban growth in another way, slowly and painfully. It is worth the price. □

# BEHIND THE IRON CURTAIN

## The Good and Bad of the Building Boom

BY ERIC DLUHOSCH

**The Russians are building on a superscale, using technology as a tool in a single-minded effort to solve a serious social problem: housing. In the process they don't consider man's needs beyond having a roof over his head, and disregard almost completely the psychological and sociological factors. Nevertheless, we can learn a lesson from them in this field.**

Any comparison between building technologies in the USSR and the West must take into account that throughout its history, Russia has been plagued by famines, insurrections, rebellions, wars and exploitation from within and abroad.

When the Communists came into power, not only was theirs an economically backward country but one where most of the population lived in hovels, cellars and other substandard dwellings. Serfdom was officially abolished only in 1861; even then, general conditions for the freed serfs did not improve much.

After the revolution, the government confiscated and reallocated existing housing and subdivided large mansions into smaller units. This improved the situation somewhat, still two or three families often had to share a single apartment, and no one was allowed to move without official permission.

Emphasis at this time was on heavy industry and agriculture; not until the 1930s and again following World War II, which left millions homeless, was the housing problem vigorously attacked and plans prepared for a nationwide solution of it.

The Communist regime has decreed that in the long run, all communities in the USSR will be of urban style, including *kolkhozes*. Besides rebuild-

ing and modernizing most existing towns and cities, more than 800 new towns (with populations from 25,000 to 500,000) have been built between 1926 and 1965. The standard in 1937 was 9m<sup>2</sup> (97 sq. feet) per adult person (official Soviet figures); the ultimate aim is 15m<sup>2</sup> (161 sq. feet) for everybody, adult or child.

With a still extreme housing shortage, the Soviet Union is still in the midst of a massive program of expansion, reconstruction and the planning of hundreds of new cities from European Russia to the Bering Strait, from the Crimea to the Arctic Ocean. Industrialized building has become the principal method for the solution of this gigantic task. While this method of building has been potentially feasible for decades, only the pressing social demands and needs have given this trend a definite direction, determining its rapid development and integrating building methods with technology and mass production in other fields.

In the Soviet Union, then, technology is used as a tool for the realization of a definite social task, while architecture provides dialectic unity of economy, technology, function and esthetics. Technology, in this sense, can be expected to solve new problems only when society has reached the stage of demanding more in its lifestyle, which in turn reflects the programmatic implementation of its general social and cultural goals.

Thus, in conscious opposition to Western trends, bizarre technical solutions are rejected on ideological grounds if they are considered to be in contradiction to the actual conditions or the true potentialities of society. At best, such solu-

**The author:** Mr. Dluhosch, a lecturer at the School of Architecture at California State Polytechnic College, studied city planning and architecture in the USSR and several of its satellite countries on a research grant from Ohio University. An author of books on architecture and planning, he is a member of the Royal Architectural Institute of Canada.

tions are regarded as curiosities or exceptions. This does not mean that architecture accepts passively the results of technological development, or that new inventions are discouraged. It does mean that experiments must be directed toward the solution of the society's real problems. This, in turn, leads to the conclusion that architects must understand the nature and potential of the technical productive forces within the society

and pay heed to the organization of these forces — still with society's lifestyle in mind.

Apart from its social impetus, industrialized building depends to a large extent on the general economic laws governing a particular society. In the case of the USSR, the economy is state controlled and centrally planned. Design and construction are carried out on the basis of a single technical policy. The agency responsible for its implementation and direction is the State Committee on Construction of the USSR Council of Ministers (GOSSTROI). Attached to the GOSS-TROI are regional research and design institutes, responsible for working out the suggested standards and recommendations which in turn serve as the basis for specific project design.

Under such conditions, architecture can hardly be expected to operate outside of this realm. On the other hand, architects are being exhorted to aid development through work in building research institutes and the schools, searching for new methods to solve social and environmental problems. In order to become active elements in the interplay of all the productive forces dominating our era, architects must become informed and involved participants in this process. In fact, this seems to be the only path open to architects if they want to be instrumental in the solution of the world's many social problems.

Of course, it would be naive and foolish to pretend that the introduction of industrialized building will solve all the problems of housing in particular and urbanization in general. While mastering the techniques and methods of mass production, the architect must look beyond the limits of cost, statistics and quantitative proliferation. Only by regarding all society as their client can architects retain their position as a leading creative force among other professionals.

Industrialized building asks for a new approach to design. Ideally, it should open to the designer new areas of creative freedom on a new scale. However, past achievements throughout the Soviet orbit show that this challenge has not been met by Russian architects. Most of the existing environments created with industrialized building in the USSR — and in Eastern Europe as well — are unimaginative and sterile.

One reason is that developments have been built mostly on open, flat land for less costly assembly and for ease of crane movement. Difficult and complex variants of the standard layout represent a new challenge to be met in terms of new assembly methods, new types of hoisting machinery which can move both laterally and longitudinally, and a new degree of sophistication in the design of standard building components for greater flexibility and variety.

*These dormitory walls are typical of the ever-present monotony of industrialized building behind the Iron Curtain.*

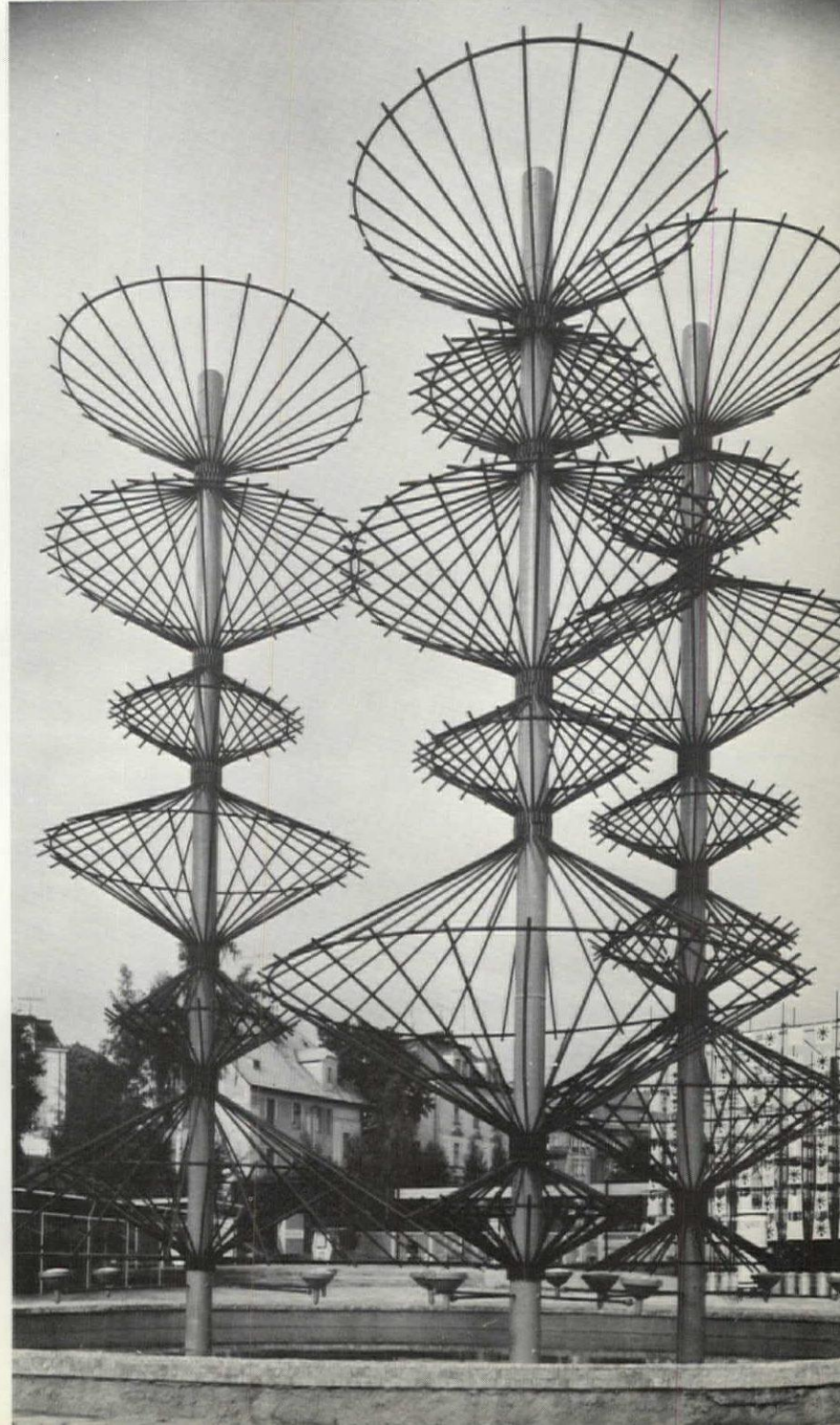


In many ways designing with standardized units is more demanding than creating interesting forms, for it requires adherence to a complex order which must respond to and unify demands of a functional, esthetic, economic, social and technological nature. Many more studies are needed and controlled experiments should be conducted (by the schools) to examine the new esthetic relationships created by this new scale. Essentially, this means that standardization has allowed us to elevate qualitative norms to the level of universal application, thus satisfying the demands of our age by providing the best for all.

At one time or another, all the prefabrication techniques used in the USSR and Eastern Europe

have been used and tested in the West. To a considerable degree, Soviet methods may be regarded as part and parcel of a worldwide trend. The difference, however, is the extent to which the countries behind the Iron Curtain have used the techniques of industrialized building.

*Tall trees, where retained, help relieve the harsh lines of industrialized housing. Strong efforts are now underway to improve the poor workmanship and liven up the usually dreary surroundings of new projects. Directly below is the Liberec Trade Exhibition Sculpture; statue of soldier at right is outside apartment building in Kladno. All photographs are from Czechoslovakia, where communications are easier and the buildings much more concentrated than in the USSR. However, Czech developments follow those of the Soviet Union.*





Over the years, the Soviets have tested and improved these methods and it is now possible to make evaluations of them. Indeed, this has been done in the USSR as well as in its satellite countries. For instance, Czechoslovakia has initiated an extensive press campaign in the form of a nationwide survey of people's reaction to industrialized housing. Most complaints are over the monotony, bad workmanship and the lack of transportation between city and suburb. New concepts are now being tested in pilot projects and experimental housing developments. The quality of assembly, once very poor, is now improving.

It would be foolish on the part of the West to

criticize these developments out of hand on the basis of partial failures, or just because they do not seem to be exciting or different. Most of the projects in Eastern Europe could easily be transformed into viable and pleasant environments by good landscaping, the addition of service structures ("fun" buildings) and civil architecture to fill the presently dull voids.

Modifications in terms of projections, balconies and different color and treatment of surfaces may help correct the overwhelming monotony, though as introduced on one system balconies look clumsy and, with brackets, supports and braces, seem foreign to the panels. Attempts to introduce panel screens with circular holes be-





*Complete industrialization of the whole building process is the Soviet regime's answer to the housing crisis, which is still severe. Although their techniques and methods are part and parcel of a worldwide trend, the extent to which industrialized building is used in the USSR and its satellites is hardly matched anywhere.*

hind the stairwells have led to formalistic solutions. The holes are neither very effective for the admission of light, nor do they make any sense structurally. Solutions incorporating a shallow loggia have been more successful due to the deep modulation of the facade and the resulting play of light and shade in the depth of the loggias.

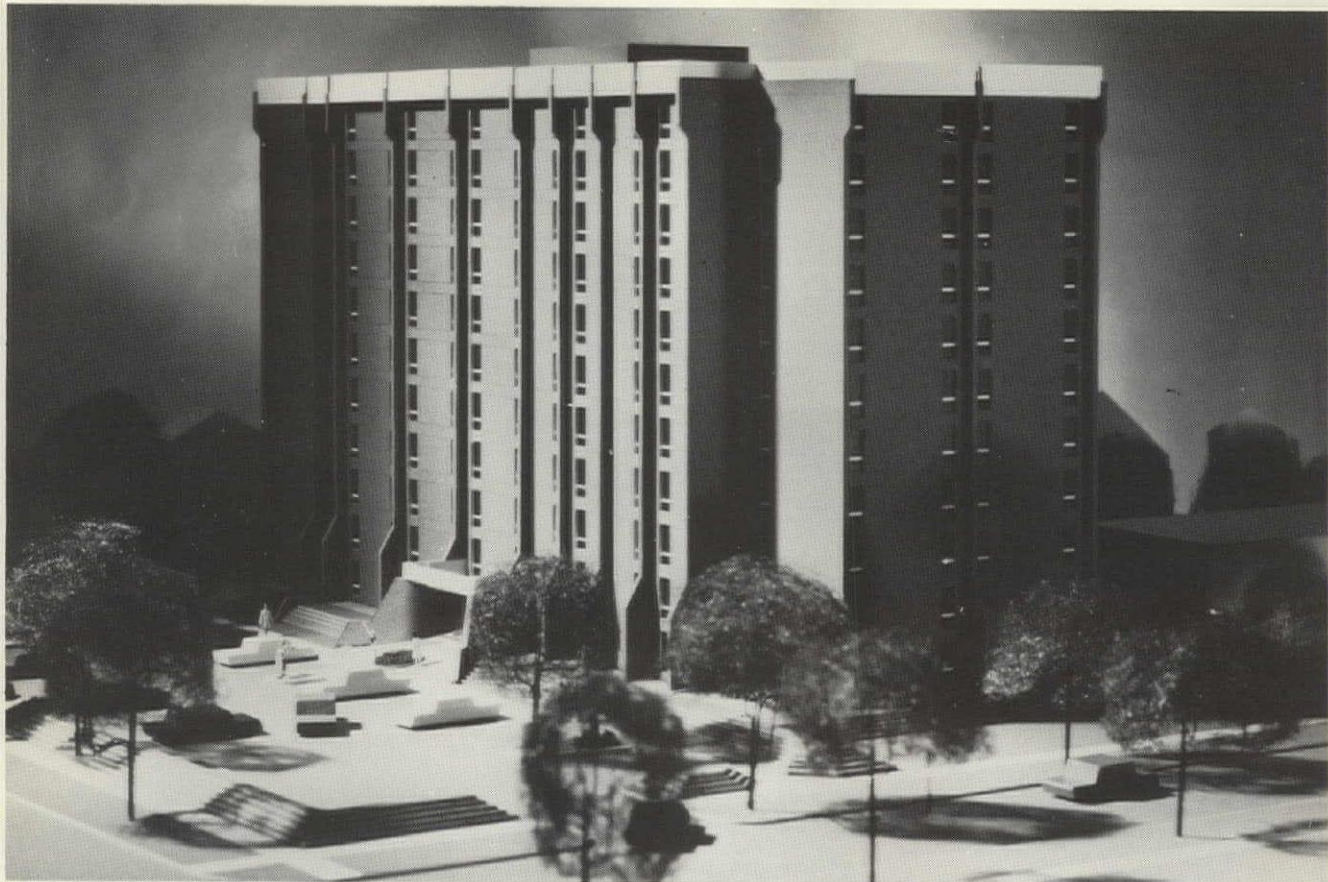
However, the framework and its organization are basically sound and techniques are being developed to deal with these problems in a comprehensive manner. The Russians, too, are now using computers for cost and efficiency studies of industrialized housing.

The contention that in a free enterprise economy such thorough standardization and comprehensive unification of process and method as practiced in the USSR are impossible, is certainly without foundation. The automobile industry represents the best example of industrialization as a demand-fulfilling process at its best. Industrialization depends by its very nature on mass demand and relatively long production runs.

One need not be a prophet to see the handwriting on the wall. All the indicators point in the direction of a rapid growth of industrialized building all over the world in the nearest future. One may criticize the appearance, the character and the monotony of existing mass housing behind the Iron Curtain, but compared to the horror of some of our "best" slums, such criticism begins to sound hollow. The poor and the underprivileged exist now, demanding deeds and not words or promises.

Professionally, legally and politically, the architect cannot prevent anyone to move into the field of industrialized building, doing what has to be done — possibly badly, but done just the same. American architects should not fear loss of commissions demanding the traditional skills of the individual. However, mass housing is also architecture, demanding equal sensitivity and possibly even greater skills — technical, administrative, organizational, political etc. etc.

Both the Communist and capitalist systems are potentially capable of solving these problems within their own institutional frameworks. Beyond the facades of ideology, the reality of our age is clearly manifested by our overwhelming and continuing dependence on technology. A recognition of this fact and the ability to learn from each other may yet be the best way to achieve true progress and use the awesome powers of science and technology for the benefit of all. □



This apartment building came in \$100,000 under the estimate. 8" Brick-Bearing Walls provided the structure, exterior and interior finish, fireproofing, and sound control.

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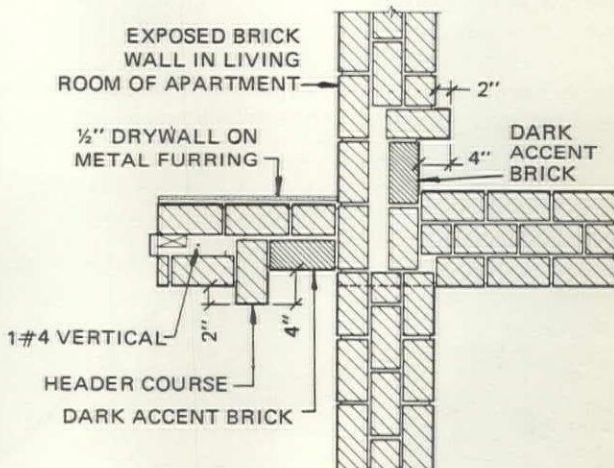
8" brick bearing walls are used through the entire 11 floors of Muskegon Retirement Apartments, in Muskegon, Michigan.

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3  
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# On-Site Second Home Practice

Vernon Sears and his younger son, Jay, have \$1 million of work on the boards, and no job is farther than 15 minutes from home.

Home is a Sears & Sears-designed combination house/office located in the Quogue-Westhampton area on Long Island, New York, which bustles with summer activity from May to September. But since most residents spend winter weekends there, the office designs year-round second homes.

"Besides," says the senior Sears, "the cost of land and labor is rising too high for homes that can be used only half the year. Most of our jobs average between \$27 and \$30 per square foot."

Referring to the firm's design approach, Jay Sears explains: "We try to express living areas by shooting them upward in some way."

This "shooting upward" is evident in such projects as the Mayer house and the Corwin "castle," which feature high towers glazed on one or more sides to afford a view of the stars from the living room at night and to admit soft, natural light by day.

"Each space must express itself regardless of the shape of the perimeter walls," the younger Sears continues. "This means that it will be expressed on the exterior as well as the interior of the house: A stairwell, a breakfast nook or a study built for north light may protrude beyond the basic perimeter walls in



Year-round houses for Edwin S. Lowe (top) and Dr. Thomas Rees.

order to develop the best possible arrangement."

Vernon Sears studied at Pratt Institute for three years, then spent three more at Yale University where he earned a Bachelor of Fine Arts degree. One of his classmates was Eero Saarinen. In 1936, at age 26, Sears with the late William Lescaze designed a pioneering modern high school in his hometown of Ansonia, Connecticut.

Two years later Sears formed a partnership with another classmate at Yale, Edward M. Foote Jr. Sharp cutbacks in building at the beginning of World War II caused Sears

& Foote to dissolve their general-practice office.

Sears moved to join United States Plywood Corporation in 1942 as staff architect, his duties including new-product research and development and supervision of a warehouse expansion program. During his 18 years with US Plywood, Sears and his family wintered in Pelham Manor, New York, and spent their summers in Quogue.

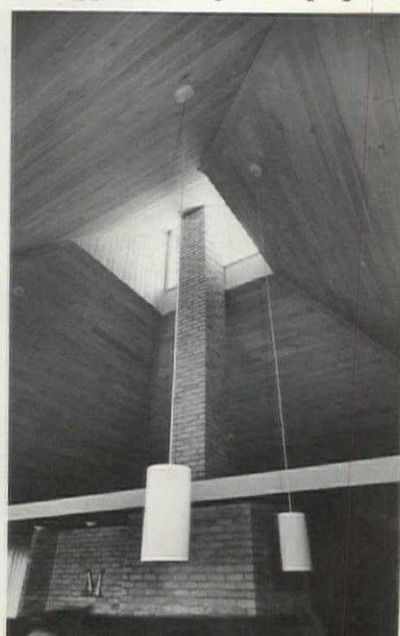
Weary of the rat race, Sears struck out on his own, developing new products in the building line, and now holds several patents in his name. It was at this point that son Jay was graduated from Pratt and teamed with his father in Quogue.

"You always hope for a bit of luck in whatever you do," says Vernon Sears, "and fortune smiled on our new venture. We had hardly hung out the shingle when our first client drove up in a Rolls Royce."

The client, an advertising agency executive, wanted a teahouse built next to his swimming pool. Sears visited the site and suggested a Japanese bridge over a small lagoon that paralleled the pool. This stimulated the client into having the entire pool site and guesthouse done in the Oriental theme.

From that modest beginning, the Sears team has gone on to new residences, remodeling work and an occasional motel or beach club. □

Marvin Corwin house invites exploration; fireplace chimney of Irwin Mayer house disappears through its sloping roof.





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# The Profession and Union Relations

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**William R. Jarratt, president of the Detroit Chapter AIA, has suggestions how architects can face up to the unions clamoring at their doors.**

All over the nation architectural firms have been subject to pressure from the labor unions.

In the Detroit area employees of the profession received letters at home from the United Auto Workers-Technical Office, Professional Department. It listed deficiencies in employment policies and suggested union organization and collective bargaining in order to overcome the alleged shortcomings. The usual card was enclosed. If signed and returned in sufficient numbers, an election would be held for the purpose of certifying UAW-TOP as bargaining agent for the technical and professional employees.

The union based its efforts on past success, notably for one very large group of technical, office and professional personnel in an automobile company. But it overlooked one important fact: Most employees of architectural firms are professionally oriented, working toward private practice, management or supervisory roles in the profession, thereby aiming for positions outside union involvement.

Detroit architects quickly discovered that they had no real policy on employment practices with which they could defend their position on unionization. Few could list the personnel in their employ, who were supervisory and who were not. Having never been confronted with a union problem of any magnitude and being hampered by the traditional policy of secrecy on wage scales and benefits, they found themselves alone with seemingly nowhere to turn.

There are, however, obvious things the architect can do to prepare against possible unionization.

One is to improve relations with his employees. This will reduce the possibility of unionization in the first place.

Architects should compare job classifications, ranges of income, benefits and working conditions with their colleagues. Competition among architects for personnel should be based on opportunity and advancement, not two bits an hour.

As the union probe progressed in Detroit, a comment was heard on several occasions: "We are paying architectural graduates too much for what they can do."

We are not very interested in the progress of the profession with that kind of attitude. The college graduate must be secured for the profession. The critical years are from graduation to registration. If practitioners would consider the welfare of these young men and develop a program of internship and evaluation in their offices all would benefit—the practitioner, the intern and the profession. As his course becomes clear through an encouraging internship, he is less susceptible to unionization.

On the other hand, the architect should know his own rights as an employer and the steps to follow when confronted with a claim of representation. Harry H. Rains, a prominent labor attorney of Mineola, New York, offers the following:

"It is possible that in the future you will be visited by a union representative claiming to represent your employees and demanding that you sign or negotiate a contract or recognize him. This meeting has important legal consequences. It could conceivably lay the foundation for unfair labor practice charges against you. In order to preserve your rights, it is important that you be guided by the suggestions set out below:

**1.** Never speak to a union representative without having someone

with you to witness the conversation. Do not speak to him alone.

**2.** If the union representative claims that he represents your employees and wants recognition, or a contract, or to bargain, limit yourself to the statement, "I will be glad to recognize or bargain with any union that is certified by the National Labor Relations Board after a board election."

**3.** If the union representative offers to show you cards he claims were signed by your employees, do not accept them or look at them. Do not touch them. Just repeat that you 'will recognize anyone who is certified by an NLRB election.'

**4.** As soon as the union representative leaves, write down everything you can remember about what happened. Quote wherever possible. Note what time it occurred, where it occurred and who was present.

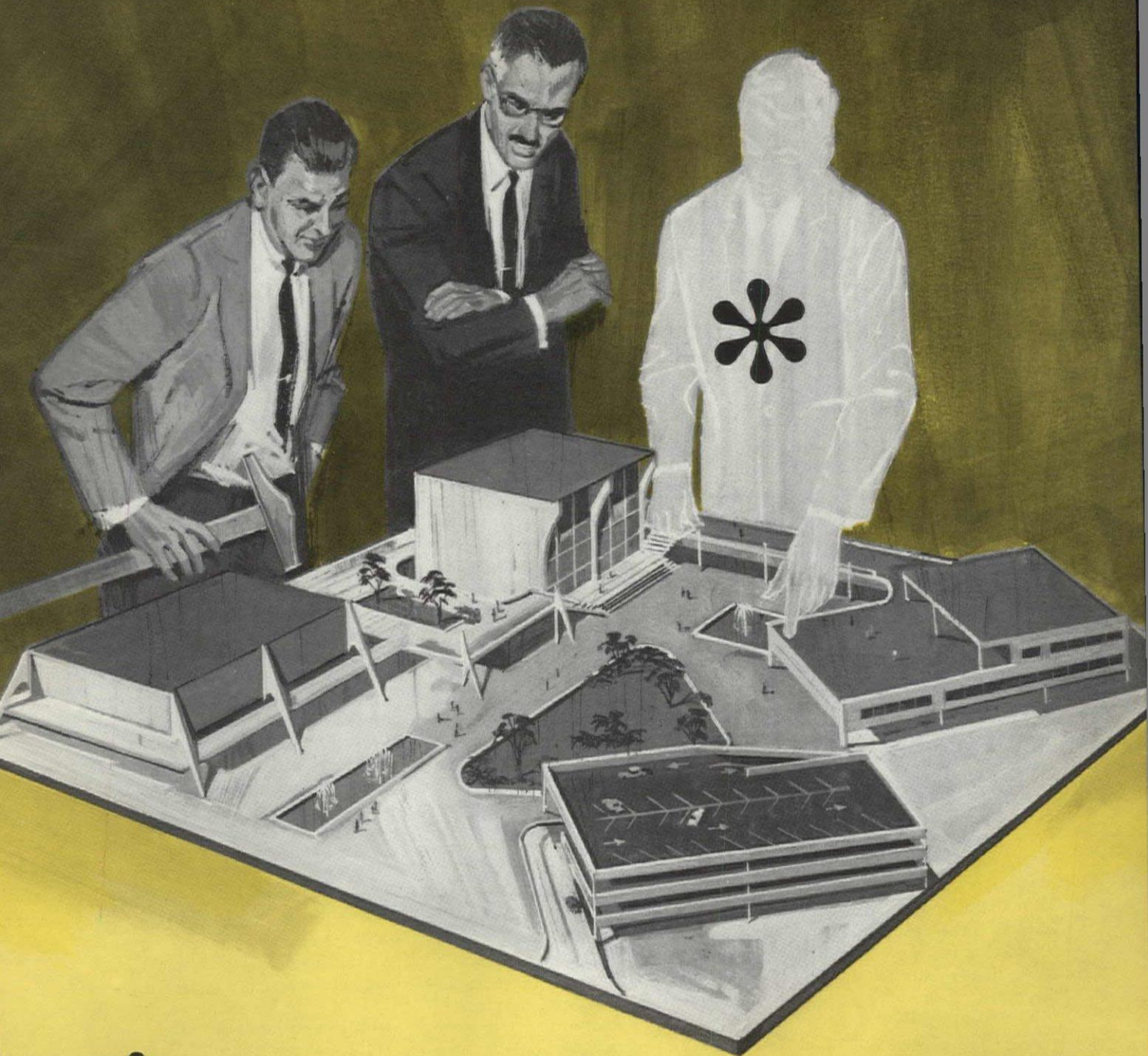
**5.** Be as brief as you can. Do not engage in long or general conversation. Be polite but firm.

**6.** Make sure he goes. If he engages any employees in conversation, show him out. Tell him that he can do his 'politicking' on their time, if they want to talk to him.

**7.** Do not arrange any other meeting dates. Say, 'There is nothing to talk to me about until after an election is held.'

"The above should take you through this meeting with your rights under the labor laws secured. Naturally, as soon as possible, call your labor attorney."

Finally, let us be advised of one significant fact: The small practice with few employees is perhaps even more susceptible to unionization than a large firm. Land surveyors have been involved in Teamster Union elections with as few as four employees. You are urged to explore your employment policies with this in mind, and when certain that we are prepared, let's get on with the profession. □



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# The Profession and Personnel Relations

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Personnel manuals can range from simple sheets briefly outlining essential operating procedures to elaborate booklets providing complete details of personnel policies, operating procedures, firm organization and other pertinent information.

But the basic purpose remains the same: to clarify procedures and policies and eliminate as many misunderstandings as possible. They are, simply, good internal public relations.

The Consulting Engineers Council has developed two sample personnel manuals: a short form for smaller firms and a comprehensive one more suitable for larger companies.

Because of the similarity in practices, the guidelines in CEC's sample manuals should provide valuable assistance for architectural firms in preparing or revising theirs.

It should be pointed out that the manuals developed by CEC are not intended to imply personnel recommendations or minimum standards. They are a compendium of present practices of CEC member firms, drawn from some 200 manuals for the purpose.

Certain general guidelines for personnel manuals are appropriate regardless of their type and form or size of the firm, the CEC suggests. These include:

- Any statement of company policies and procedures should have an attractive appearance. This does not require elaborate effort but does involve careful preparation.
- Loose-leaf format should be used to facilitate adding or changing material and inclusion of items that the personnel may wish to retain with the document.
- Detailed explanations of various types of insurance, retirement and profit-sharing plans, educational assistance programs and the like should be handled in separate pamphlets and other documentation.

• Terms such as associates, personnel or staff members should be used in preference to the term employees.

Most manuals reviewed by the CEC were designed strictly for internal distribution and were therefore mimeographed. The CEC notes, however, that some manuals were so well designed and executed that they are excellent advertising for their firms and can be used to attract prospective associates or staff members.

The larger sample manual includes eight sections: foreword; information about the company; personnel and administration; operations; staff benefits and insurance; travel on company business; professional development; and a reprint of the engineering profession's code of ethics.

Included in the foreword is an introduction or letter of transmittal, friendly and informal in tone to make each staff member feel like part of the professional team.

A brief history of the firm, description of divisions, services offered and type of projects are given under information about the company, along with a list of branch offices and overseas operations (if any), names and titles of principals and division heads.

The lengthiest and most detailed section is, necessarily, the one on personnel and administration. It offers descriptions of staff positions, general guidelines for good relations with clients and the public, policies concerning salary increases, promotions, retirement and the like.

This section also spotlights possible conflict of interest and discourages outside employment. In addition, it states regular office hours, overtime pay procedures, payroll periods, time sheet and work record requirements, vacation and holiday provisions, etc.

It is pointed out that an eight-

hour working day is the prevailing practice, except in some large metropolitan areas where shorter hours are in effect.

The operations section deals with the handling of mail and correspondence, scheduling use of the conference room, coffee breaks, procedures for purchasing supplies and logging long distance calls.

Brief details on provisions for medical, insurance and retirement plans and other such items available through the company are given in the employee benefits and insurance section.

CEC notes that the majority of firms that submitted manuals for review pay 100 percent of the employees' premiums for medical/hospital insurance plans. Most of the larger firms have specific retirement policies; most of the smaller firms do not.

Under travel on company business are included regulations regarding expense accounts, automobile mileage allowances and use of company vehicles. The importance of keeping the office informed about itineraries is stressed.

Policies on professional registration and examinations are explained under professional development. A majority of the manuals studied encourage registration. When these are out-of-state and taken at the request of the firm, all expenses are reimbursed.

More than half the policy manuals reviewed encourage technical and professional society membership. A few firms pay dues for a limited number of their staff for representation purposes.

Most firms encourage continuing education; more than half provide support at least to the extent of time off to attend meetings, lectures, etc.

CEC's sample manuals, both the short and the comprehensive form (CEC Project 212) may be obtained from the Consulting Engineers Council. □



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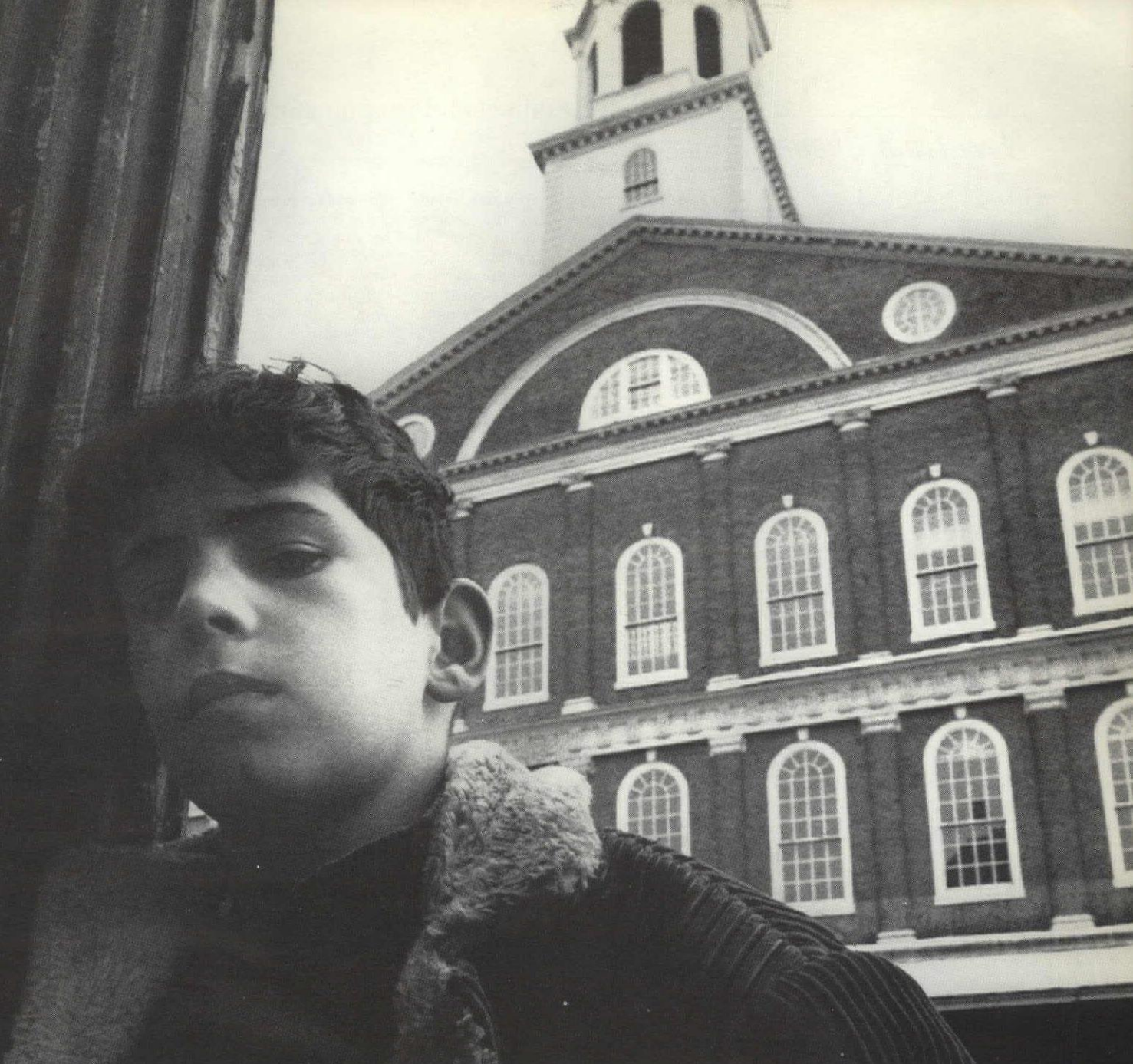
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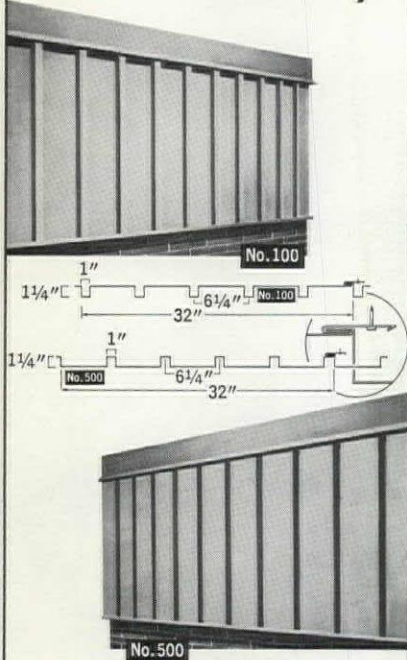
That's why we'd like to stimulate more thinking among more people like you about problems like Glen's. So we've established

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- 35 AIA JOURNAL Annual Index, 1967 and 1968, single copy free
- 36 Reprints in quantity, information and prices
- 40 Clearinghouse for Federal Scientific and Technical Information, subscription price
- 41 Uniform Plans for Stock Schools, annotated bibliography
- 43 1966 Design Award Program (HEW-AIA-EFL), brochure of higher education facilities
- 44 Your Building and Your Architect, 18-page booklet for clients
- 45 Checklist for Cities, a working guide for urban analysis
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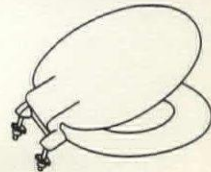
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## Books

**The Architecture of Colen Campbell.** Howard E. Stutchbury. Cambridge: Harvard University Press, 1967. 186 pp. \$12.50.

Very little is known of the life of Colen Campbell, an extremely influential British architect of the 1700s. The scope of his work is well known, however, for he published his own designs in his work *Vitruvius Britannicus*.

This collection of engraved designs of both projected and exe-

cuted buildings of contemporary British architects increased in popularity from the time the first volume was published in 1715 until the third and final one appeared in 1725. Stutchbury says that Campbell was singularly successful in advertising himself and that his books in all likelihood will outlast his buildings.

Campbell was the first of the Georgian Palladians. He developed the Palladian house, that highly successful architectural style so peculiarly agreeable for the age in which it flourished. Stutchbury's admirable study covers Campbell's

ambition, inspiration and achievement. Without Campbell, Stutchbury writes, Georgian Palladianism would have developed later and would have been entirely different, and the legacy we have inherited would have been less rich.

The book contains 60 plates which make a decided contribution to its success. They include Campbell's designs, the author's photographs of Campbell's buildings which have survived and of buildings which represent Campbell's Italian sources, some previously unpublished drawings by Campbell and other 18th century personalities, and reproductions of manuscript documents and drawings related to some of his buildings.

**A History of Architecture in Scotland.** T. W. West. New York: David McKay Co., 1967. 208 pp. \$6.95.

This is a concise survey of architecture in Scotland from prehistoric times to today. As West states, "The genius of the Scots combines in equal measure the imaginative and idealistic, practicality and realism. As in their literary arts, so in their architecture."

**Japanese Houses: Patterns for Living.** Kiyoyuki Nishihara. Tokyo: Japan Publications, 1968 (available in the US in major bookstores). 276 pp. \$15.

This study of the Japanese house as a cultural unit is fascinating and one that architect or layman will find of interest. The book is divided into five sections.

In the first part the author devotes his attention to the psychology of the Japanese people and the way the house reflects Japanese culture. A discussion follows which reveals how the attitude of the Japanese toward his house is reflected in visual forms. In the third section Nishihara explains the various parts of a Japanese house showing that it is intimately connected both with the Japanese way of life and with the physiology of the Japanese body. An analysis of the elements of the house is given in part four: posts, floors, walls, partitions, ceilings, roofs and furniture. Finally, the last part is about composition: principles, levels, distinctive Japanese spaces, and a consideration of the contemporary Japanese house.

Nishihara is a member of the design staff in the office of Kenzo Tange, Architects & Associates. The book is filled with a wealth of

*Continued on page 94*

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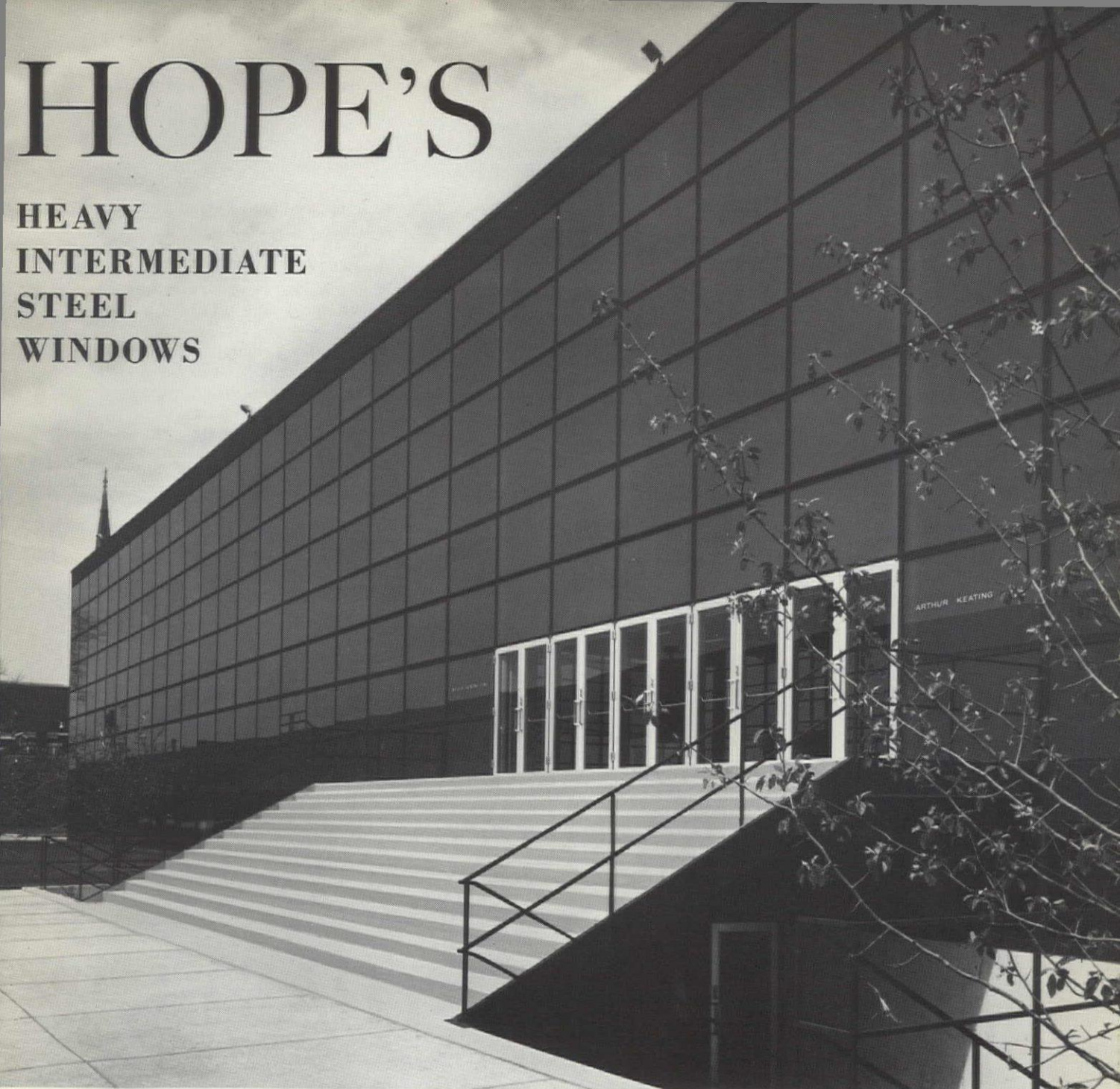


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illustrative material and is truly handsome. In the foreword Nishihara states: "I will have achieved my goal if in this book I am able to prove that we should not look at a form through that form alone, and I will be pleased if in discussing Japanese houses as a way of life I can promote a further understanding of even one facet of Japanese culture." It would seem that his aim has been accomplished beautifully.

**Pioneer Texas Buildings: A Geometry Lesson.** Clovis Heimsath. Austin: University of Texas Press, 1968. 159 pp. \$12.50.

"Texas ho! Remember the Alamo — Prairie schooner ahoy!" The echoes of Texas history seem to reverberate from Heimsath's book in a tintinnabulating, melancholy revisit of early Texas buildings and prairielands. For us Texas boys, it's pure nostalgia, with visions of bare feet, skinned toes, et al.

The relating of early Texas buildings, particularly houses, to geometric slopes provides a framework for some enjoyable looking at the relics of past years in the German

settled prairies of Central Texas. The photography by wife Maryann is excellent, the buildings are a delight, and the prose is mercifully scant except for the postscript



where the author, an AIA member, tries to mix his cause for the day with whichever other wandering thoughts seem to come his way.

The book is fun and will make a great gift for some Texas-interested friend. But whatever message there is, beyond that portrayed visually, seems to get lost. Too bad Heimsath didn't omit the postscript.

BENJAMIN H. EVANS, AIA

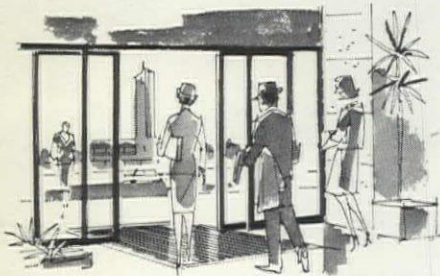
**Design and Construction of Concrete Shell Roofs.** G. S. Ramaswamy. New York: McGraw-Hill, 1968. 641 pp. \$24.50.

There are four parts to this book on design principles and construction techniques of shell roofs of single and double curvature.

The first part presents the techniques of advanced mathematics required for comprehension of the remainder of the text; the second considers cylindrical shells and folded plates; the third, shells of double curvature; and the fourth gives attention to the design principles of traverses, discusses the practical aspects of shell construction, giving techniques applicable to both poured-in-place and pre-cast shells, and summarizes some of the recent research in the analysis and design of shell roofs.

This informative volume is by an author with both theoretical knowledge and practical experience. He is currently director of the Structural Engineering Research Center in Rookee, India, and a director of the National Building Construction Corporation in New Delhi. He is author of several technical publications. □

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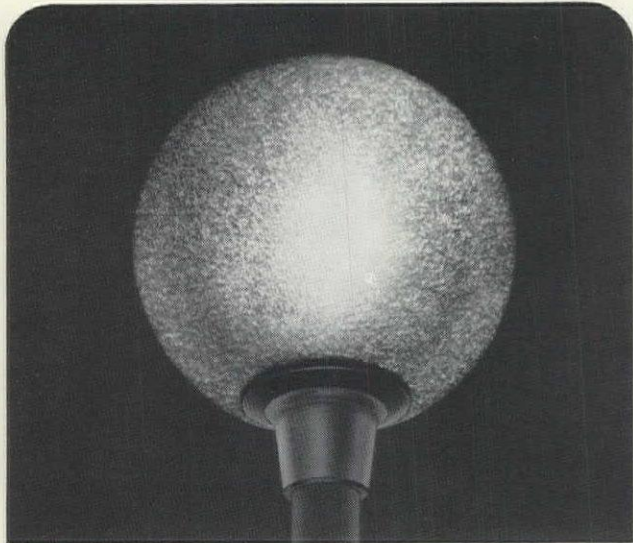
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# Calendar

## National

- April 20-24:** American Society of Planning Officials Annual Conference, Convention Center, Cincinnati  
**April 20-24:** North American Conference on Campus planning and College Building Design, University of Illinois, Urbana.  
**April 29-May 1:** Building Research Institute Spring Conference, Sheraton-Chicago Hotel, Chicago  
**April 29-May 1:** National Conference on Religious Architecture, Chase-Park Plaza Hotel, St. Louis  
**May 7-8:** Construction Industry Advertising and Product Literature Conference, Marriott Hotel, Chicago  
**May 22-25:** National Conference on Historic and Architectural Control Districts, Statler Hilton Hotel, Boston  
**June 2-4:** Construction Specifications Institute Annual Convention, Convention and Civic Center, Houston  
**June 20-22:** Association of Collegiate Schools of Architecture Annual Meeting, Blackstone Hotel, Chicago  
**June 22-26:** AIA/RAIC Joint Annual Convention, Palmer House, Chicago

## AIA Regional and State Conventions

- April 24-26:** Gulf States Region, Jefferson Davis Hotel, Montgomery, Ala.  
**May 7-9:** North Central States Region, Lake Lawn Lodge, Delavan, Wis.

## International

- May 18-22:** First International Conference on Single Family Houses, Copenhagen  
**May 18-24:** International Federation for Housing and Planning International Congress, Dublin  
**May 26-30:** United Nations Session of the Committee on Housing, Building and Planning of the Economic Commission for Europe, Geneva  
**June 15-20:** International Design Conference in Aspen, Colo.

## Continuing Education

- May 15:** Registration due, Architectural History course at University of Salamanca, Spain. Contact: School of Architecture, University of Virginia, Charlottesville, Va.  
**May 16:** Registration due, Fundamentals of Illumination Engineering course at University of Colorado, Boulder. Contact: Bureau of Continuation Education, 328 University Memorial Center, University of Colorado, Boulder, Colo. 80302.

## Awards Programs

- May 15:** Submissions due, Prestressed Concrete Institute Awards program. Contact: Prestressed Concrete Institute, 205 W. Wacker Drive, Chicago, Ill. 60606.  
**May 16:** Applications due, Western Home Awards program. Contact: AIA-Sunset Magazine Western Home Awards Committee, Box 2345, Menlo Park, Calif. 94025.  
**July 1:** Submissions due, commercial/industrial interiors in seven categories. Contact: Contract '69, National Expositions Co., 14 W. 40th St., New York, N.W. 10018.

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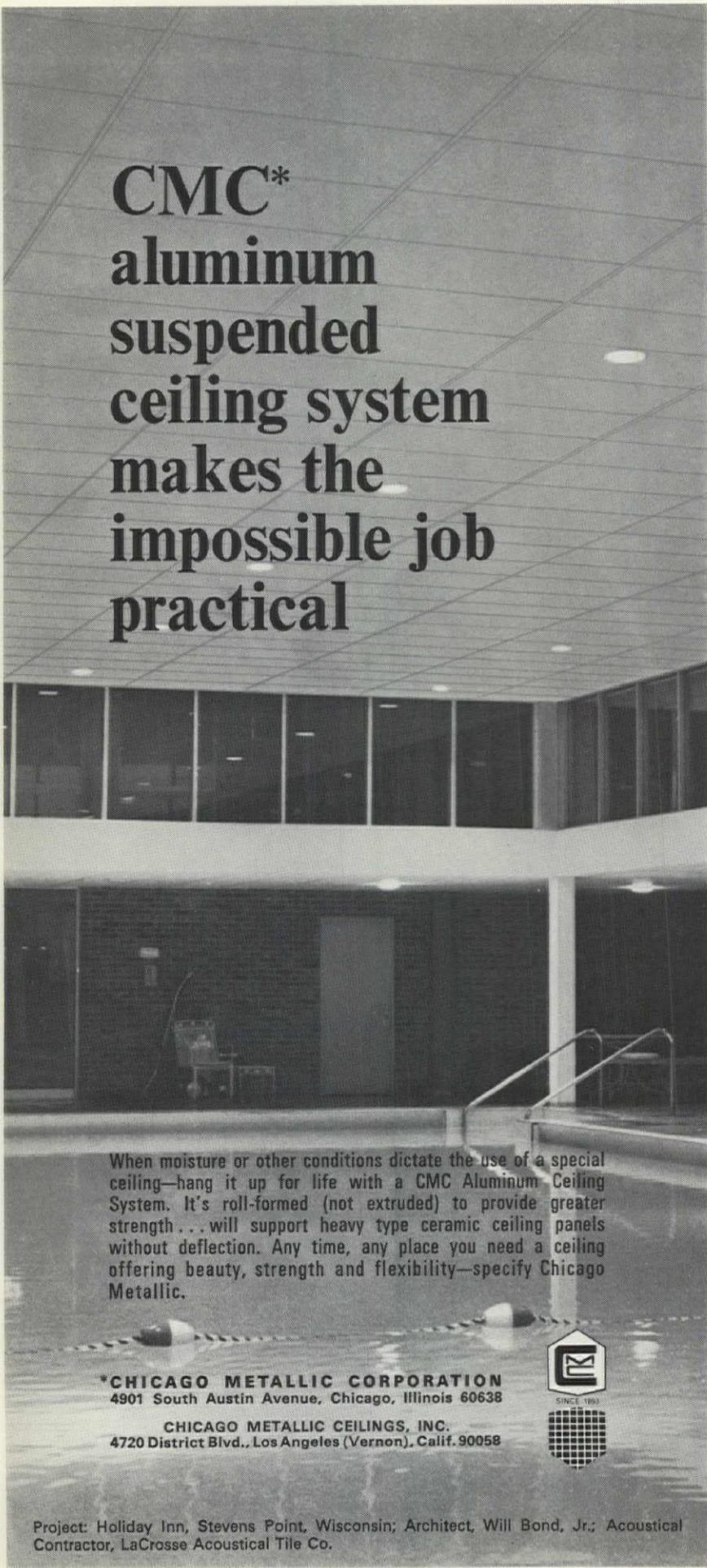
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## Letters

### The Subject Was Codes

EDITOR:

The "Report from a Douglas Commissioner" by Jeh V. Johnson [Jan.] devoted half a page to codes that reflected testimony given by representatives of the Institute's defunct Committee on Building Regulations. Indeed, he credited the AIA's committee for stating "very convincingly the case for the national respected standards" and further reflected the committee's testimony when he stated that "it is possible to develop nationally respected criteria for the development and updating of existing codes."

In the same issue, David M. Pellish, AIA, outlined the recommendations of the National Commission on Urban Problems in his article "A New Approach to the Code Problems." This is the best statement to date on the code problem and reflects the previously mentioned Committee on Building Regulations's proposal for a Building Code Service Institute. This committee's program was endorsed by resolution of the 1967 convention in New York City.

These two articles and the recommendations of the National Commission on Urban Problems confirm the policies and program of the defunct AIA committee. One wonders why the Institute's Board of Directors, in their infinite wisdom, chose to eliminate this committee.

The Committee on Building Regulations was merged or submerged into the Committee on Building Industry Coordination and should be reactivated, perhaps as part of the Urban Affairs section of the Institute. The reactivated committee should be structured and substructured to parallel the suggested Council for the Development Standards as outlined by Mr. Pellish's article and as included in the recommendations of the National Commission on Urban Problems.

The increased supplementary dues should permit a full-time staff assistant for assignment to this important work.

Think what the AIA could accomplish with Mr. Pellish in this staff position. It fairly boggles the mind. We might even become the leaders we sometimes think we are.

RAYMOND ZIEGLER, FAIA  
Los Angeles, Calif.

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## We Get the Message

EDITOR:

The format and style of the AIA JOURNAL are crisp, clean and professional.

Feature subjects are varied and represent a good blending of information.

Unfortunately, the message is becoming as unreadable as McLuhan or Marcuse. Your erudition is showing.

A. CALVIN HOILAND, AIA  
Great Falls, Mont.

## Plaudits for Panam Congresses

EDITOR:

Having been a participant in a Panamerican student congress and the 1965 congress in Washington, D.C., I read the article on Bogota [Jan.] with great interest. I think Maurice Payne's interpretation of the proceedings and their significance was very perceptive and concise. I attempted to evaluate the importance of our participation twice, and I came up with two lengthy documents which didn't say much more.

If you haven't been to a student congress, you are missing a treat. They are less uptight and more passionate. Students are more idealistic and put more into their meetings. Congresses usually degenerate into political debates.

I would, however, take exception that in the article Mr. Payne did not somehow imply or state that it is incumbent upon us to attend these congresses, if for no other reason than to help those colleagues who so much look to us as leaders. Perhaps this is a bit of moralizing that really has no place in an expository piece.

I agree that the formal resolutions of congresses do not have much substance and are a compromise of expediency to end the meetings at the appointed hour. The opinions expressed are too divergent and too valuable to be hammered into these patchwork resolutions and forgotten.

JAMES R. DIAZ  
Architect  
San Francisco, Calif.

EDITOR:

It is a matter of pride and honor for me to see my photos in the AIA JOURNAL. They were splendidly laid out with excellent taste.

GERMAN TELLEZ  
Professor of Architecture  
University of the Andes  
Bogota, Colombia

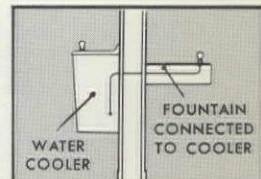


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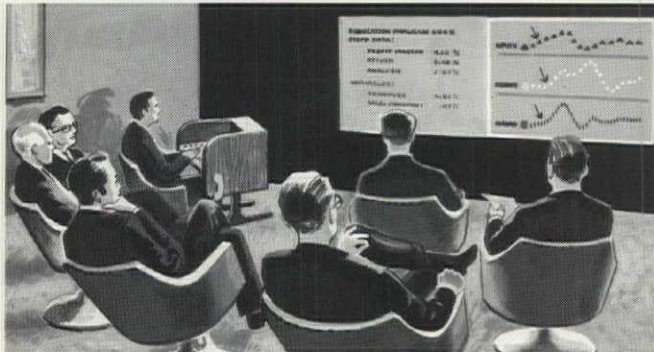
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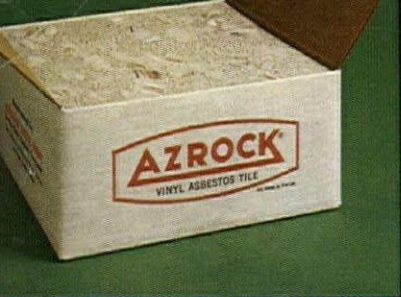
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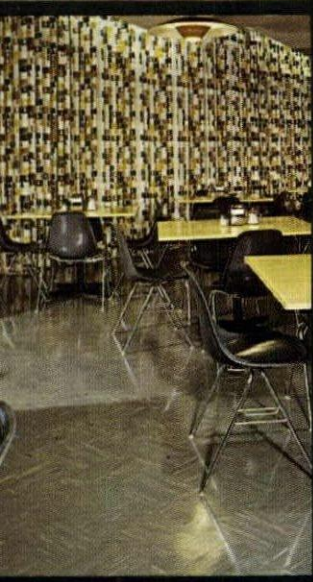
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