

BYTE COUNTER



1  
CHAN  
END



T/O INH 1



2  
DEV  
END

PARITY  
DATA



3  
EOR/EOF



WRITE  
BIT P



4  
SERV  
REQ



PARITY  
CHECK



BIT IN



5  
BLOCK  
SERV REQ



SELECTED



REQUEST



T/O INH 2



COMMAND REGISTER



EOF

CMND  
ACCEPT

DEMAND

DATA  
DPLY

STA  
DPLY

SENSE  
DPLY

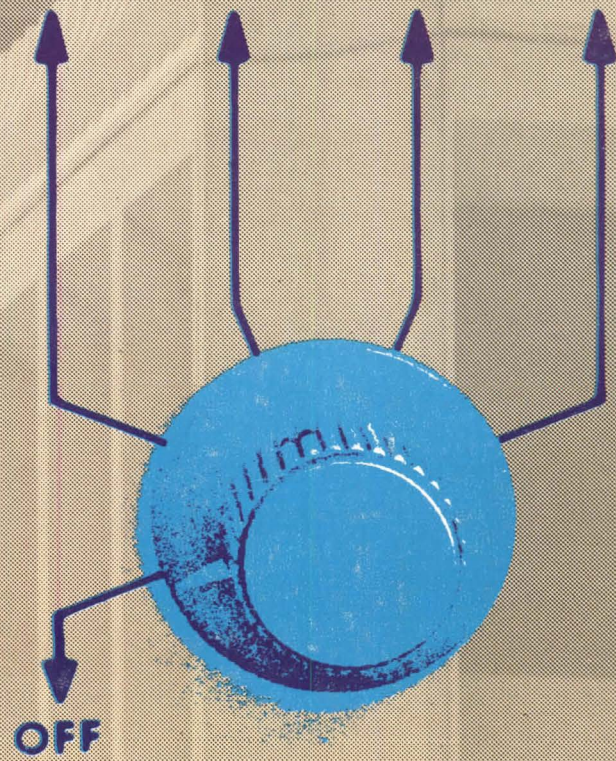


LAMP  
TEST



STOP

RESET



DATA  
ENTE



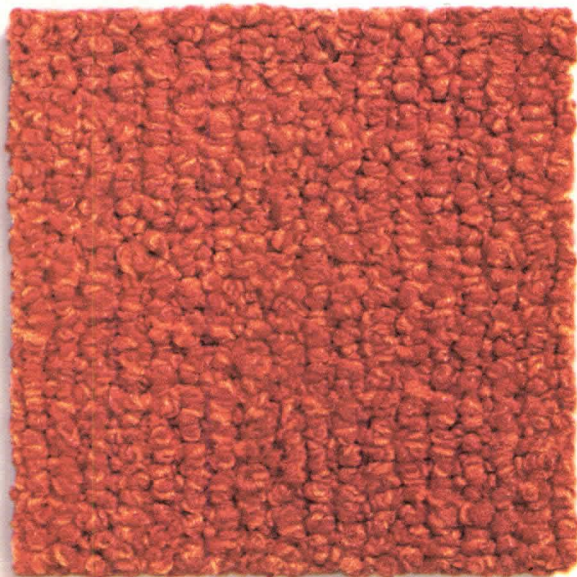


Expect quality carpets  
And expect their





# to be Antron<sup>®</sup> nylon. look to last.



**What you see is what you'll get for a long time.** "Antron" is a soil-hiding carpet fiber. It is the leading commercial carpet fiber brand with more than twice the available styles in "Antron" than those made of the next brand. Its ability to diffuse light helps blend soil concentrations into the overall look of the carpet (normally they would show up as spots). Also, being nylon, "Antron" gives carpet exceptional durability and crush resistance.

**The University of South Carolina** wanted their new College of Business Administration to provide an inspirational atmosphere for students. Style and quality weren't the only guidelines, however. Long-term appearance retention and low maintenance costs were also prime concerns. Their final selection was carpet with pile of Antron\* nylon. The wide style variety available made the rest of the job easy. Final choice: this ripple texture loop pile of "Antron" nylon continuous filament across 13,000 sq. yds. of classrooms, offices, conference areas, lounges and stairways.



**How "Antron" keeps carpet looking fresh.** Its continuous filament structure is unique, as simulated in this greatly enlarged model. The four microscopic holes scatter light to minimize rather than magnify the dulling effects of soil, while maintaining an attractive, subdued luster. This property of the fiber, together with its remarkable wearability, helps the look of the carpet to last.

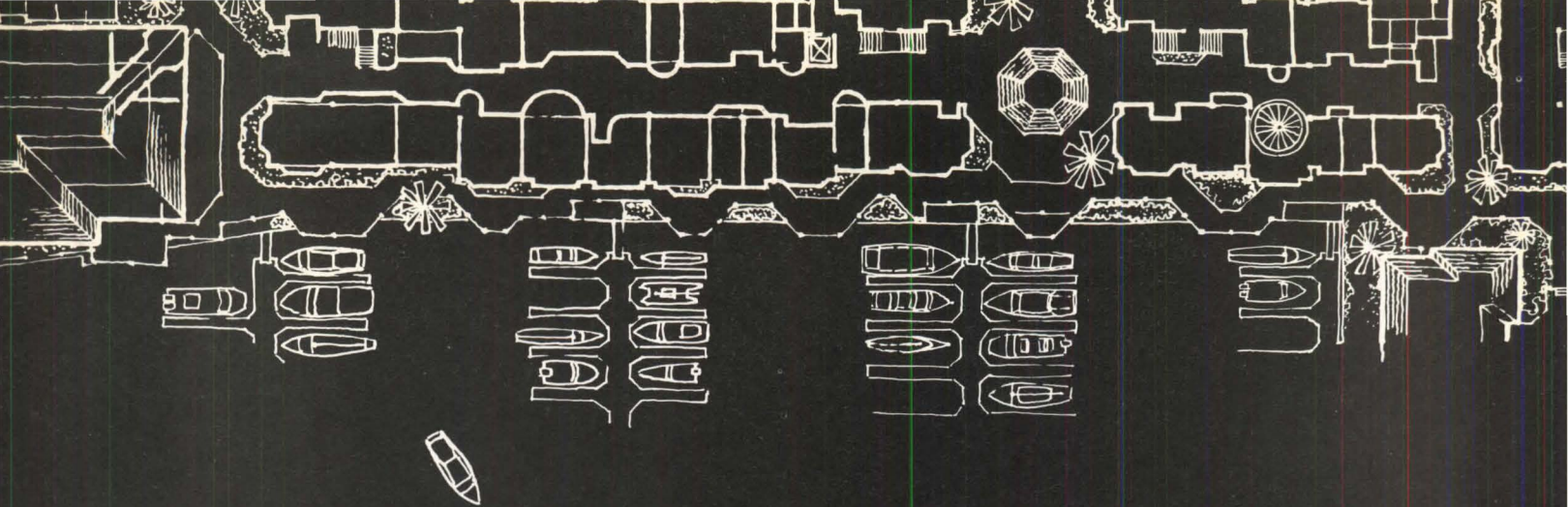


**NEW!** "Antron" III nylon for static control is now available in selected styles.

\*Du Pont registered trademark. Du Pont makes fibers, not carpets.

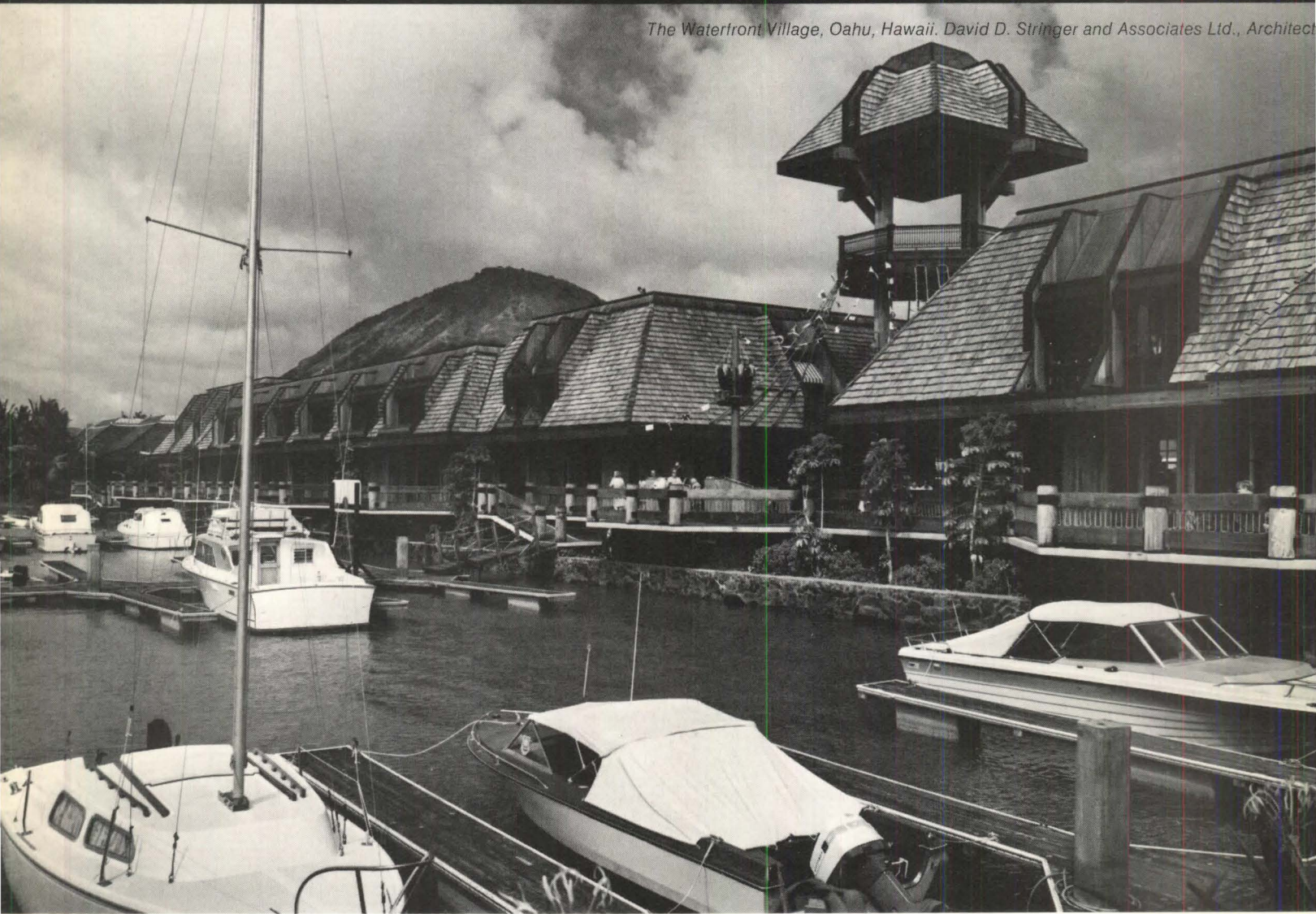
Circle 1 on information card





## Red cedar helps make a shopping center seaworthy.

*The Waterfront Village, Oahu, Hawaii. David D. Stringer and Associates Ltd., Architect*



At Kaiser-Aetna's \$5 million dollar Waterfront Village near Diamond Head, two decks of shops and offices have been infused with the warmth and texture of red cedar. (2,600 squares of red cedar handsplit shakes.)

The architect's unique nautical themes are stated in crow's nests, rigging, lifeboats and a smooth, informal transition from marina to shore. What other material could offer red cedar's range of design applications? From the "thatched" mansards to intimate interior mall spaces,

red cedar has combined distinction with quiet, island informality.

And red cedar shakes will weather anything the tropical skies can bring. From heat waves to hurricanes. Red cedar's unique insulative properties make it an efficient as well as beautiful building covering.

Next time you're launching a project, consider the building material with warmth, durability and almost infinite design possibilities: Red Cedar Certi-Split Shakes and Certigrade Shingles.

For more details, write Red Cedar Shingle Handsplit Shake Bureau, 5510 White Building, Seattle, Washington 98101. (In Canada: 1055 West Hastings St., Vancouver 1, B.C.)



*These labels on bundles of red cedar shingles or handsplit shakes are your guarantee of Bureau-graded quality. Insist on them.*

### Red Cedar Shingle & Handsplit Shake Bureau

One of a series presented by members of the American Wood Council.

Circle 2 on information card



## Board of Directors

### Officers

Archibald C. Rogers, FAIA, *President*  
William Marshall Jr., FAIA,  
*First Vice President*  
Van B. Bruner Jr., AIA, *Vice President*  
Louis R. Lundgren, FAIA, *Vice President*  
John M. McGinty, AIA, *Vice President*  
Hilliard T. Smith Jr., FAIA, *Secretary*  
Joseph Tuchman, FAIA, *Treasurer*  
William L. Slayton, Hon. AIA,  
*Executive Vice President*

### Directors (Year indicates expiration of term)

Whitson W. Cox, FAIA ('74), *California*  
Eugene Crawford, FAIA ('75), *California*  
Rex Lotery, AIA ('76), *California*  
Herbert E. Duncan Jr., AIA ('75),  
*Central States*  
Robert M. Lawrence, AIA ('76), *Central States*  
Harley B. Fisk, AIA ('76), *East Central States*  
H. Leslie Walker Jr., AIA ('75), *Florida*  
Matt L. Virden III, FAIA ('74), *Gulf States*  
John F. Hartray Jr., AIA ('75), *Illinois*  
Clarence H. Rosa, FAIA ('74), *Michigan*  
Alexander S. Cochran, FAIA ('74),  
*Middle Atlantic*  
William L. Ensign, FAIA ('75), *Middle Atlantic*  
Robert A. Burley, AIA ('74), *New England*  
Sarah P. Harkness, AIA ('76), *New England*  
Arthur E. Rigolo, FAIA ('74), *New Jersey*  
Frederick G. Frost Jr., FAIA ('74), *New York*  
Herbert Epstein, AIA ('75), *New York*  
Donald J. Stephens, AIA ('76), *New York*  
George A. D. Schuett, AIA ('76),  
*North Central States*  
Robert E. Fehlberg, FAIA ('74), *Northwest*  
Vladimir Ossipoff, FAIA ('75), *Northwest*  
Willard C. Pistler Jr., AIA ('76), *Ohio*  
Ehrman B. Mitchell Jr., FAIA ('75),  
*Pennsylvania*  
William A. Carlisle, FAIA ('74), *South Atlantic*  
Leslie N. Boney Jr., FAIA ('76), *South Atlantic*  
Thomas A. Bullock, FAIA ('75), *Texas*  
Howard R. Barr, FAIA ('76), *Texas*  
Robert A. Fielden, AIA ('76),  
*Western Mountain*  
Patrick B. Davis Jr., ex officio, *President,*  
*ASC/AIA*

### Observer

Fotis N. Karousatos, *Chairman,*  
*Council of Architectural Component Executives*

### Headquarters

William L. Slayton, Hon. AIA,  
*Executive Vice President*  
James A. Scheeler, FAIA,  
*Deputy Executive Vice President*  
Robert Traynham Coles, AIA,  
*Deputy Vice President, Minority Affairs*  
William G. Wolverton, Hon. AIA  
*Administrator, Business Management*  
James E. Ellison, AIA, *Administrator,*  
*Education & Research*  
Michael B. Barker, *Administrator,*  
*Environment & Design*  
Arnold J. Prima Jr., AIA, *Administrator,*  
*Government Affairs*  
J. Winfield Rankin, Hon. AIA, *Administrator,*  
*Institute Affairs*  
Edward G. Petrazio, AIA, *Administrator,*  
*Professional Practice*  
Muriel Campaglia, *Administrator,*  
*Public Relations*  
John P. Eberhard, AIA, *President,*  
*AIA Research Corporation*  
John H. Schruben, FAIA, *Executive Vice*  
*President, Production Systems for Architects*  
*and Engineers, Inc.*

# AIA JOURNAL

## Windows As Places for Occasions and Childhood Eyes to the World—Jorg-Dietram Ostrowski

30

Beyond providing views and ventilation, they also serve more basic human needs

## Protest Against the Primacy of Technology Over Humanity—Nancy Wolf

34

An artist's view of an un-humane architecture

## First Steps in Computer Use for Smaller Firms—David Lorenzini

38

Computer Basics: Hardware—Jerald L. Ripley and Jarrell C. Grout  
Computer Basics: Software—Jarrell C. Grout

## Question: Value Engineering Is a Method of . . .—Clint Page

41

Getting the most, just cutting costs, undercutting the architect and/or . . .

## AIA Minority/Disadvantaged Scholarships: A Commitment Yet to Be Fulfilled—Peter H. Share

44

A brief history, its current status and an introduction to some people

## An AIA Design Team Studies a Neglected Sector of Honolulu—Mary E. Osman

47

And makes planning proposals for the city, the island and the state

## Henry Klumb in Puerto Rico: Architecture at the Service of Society—JoAnn Crisp-Ellert

50

An architect's 40-year commitment to improving the Caribbean island's quality of life

## The Writings and Sketches of Matthew Nowicki—Bruce H. Schafer

54

The legacy of a humanist, a functionalist and a technician

## A Survey Aimed at Building Bridges Between Education and Professional Practice—C. Herbert Wheeler Jr., AIA

58

A professor asks what should be taught to A/E students and practitioners

### Departments

Going On	4	Events	72
Books	61	Advertisers	76
Letters	70		

### Cover: Ron Rozzelle and Jeff Howard

Donald Canty, Editor; Mary E. Osman and Peter H. Share, Associate Editors; James E. Ellison, AIA; Dave Clarke, Institute Department of Education and Research, Consulting Editors; Suzy Thomas, Art Director; Michael J. Hanley, Publisher; Michael M. Wood, Sales Manager; George L. Dant, Manager, Production and Business; Michael A. Benoit, Circulation Manager.

AIA JOURNAL, official magazine of The American Institute of Architects, published monthly at 1735 New York Ave. N.W., Washington, D.C. 20006. Telephone: (202) 785-7300. Subscriptions: for those who are, by title, architects, architectural employees, and to those in architectural education (faculty and schools), and to libraries, building construction trade associations and building product manufacturers: basic rate \$7 a year, \$12 two years, \$6 to architectural students in the U.S., its possessions and Canada. For all others: \$12 a year in the U.S., its possessions and Canada; other countries to those who are, by title, architects: \$12 a year. All others outside the U.S., its possessions and Canada: \$22 a year. Single copy: \$2, payable in advance. Publisher reserves the right to refuse unqualified subscriptions. Change of address: give Circulation Department both old and new addresses; allow six weeks, second class postage paid at Washington, D.C. Microfilm copies available from University Microfilm, 300 N. Zeeb Road, Ann Arbor, Mich. 48106. Referenced in *The Architectural Index*, *Architectural Periodicals Index* and *Art Index*. © 1974 by The American Institute of Architects. Opinions expressed by contributors are not necessarily those of the AIA.® VOL. 62 NO. 1



## GSA Study Committee Recommends Changes In A/E Selection Rules

The General Services Administration's special study committee on selection of architects and engineers issued its report in mid-June and GSA Administrator Arthur F. Sampson said that he would "immediately implement" a majority of its recommendations.

The committee was appointed by Sampson late last year and included representatives of the architectural, engineering and legal professions, private industry, government, academe and the press. Chairman was Houston real estate developer Gerald D. Hines.

The committee found the "basic concept of GSA's architect/engineer selection process" to be a "good one." At present, GSA uses regional and national advisory panels of private architects and engineers to review qualifications of prospective A/E contractors and develop pre-selection "slates" of five to eight candidates. Regional evaluation boards of in-house professionals then interview the firms and send their findings to Sampson without indicating an order of preference. He makes a ranking of first, second and third preferences and authorizes negotiations with the top-ranked firm.

Modifications in this process recommended by the committee included:

- Membership of public advisory panels for selection of A/E firms should be from state or regional professional societies or other sources familiar with the professional careers and abilities of candidates.
- Members of advisory panels should be ineligible for GSA work during their terms on the panel. Panel members should be authorized to serve as observers on the procedures of evaluation boards for both continuity of process and better communications within the elements of the system.
- Panel meetings should continue to be closed for candid discussion of the qualifications of A/Es competing for GSA work.
- Evaluation boards are "essential to the A/E selection process" and should be

continued in assessing professional qualifications of competing firms. These boards, made up of in-house professionals, should rank firms in order of preference, which has been done previously by the GSA administrator, to help "insulate the process from improper influence."

- The administrator, who has final authority, should document his reasons for any departure from the recommendations of the evaluation board. He should be "vigilant to assure that: innovation is encouraged; small, new and minority firms have a fair opportunity to compete; a high standard of architecture is maintained; improper influence does not materialize."
- A national evaluation board should be established to make recommendations on projects for which the estimated construction costs exceed \$5 million or those which have "significant community impact" because of their special nature.

The committee concluded that the "public image of the GSA process is flawed at several points." This should be improved by an "expanded public information program," with details of awards and the basis for them "released promptly to firms in competition for the work, the evaluation boards and public advisory panels." And GSA should publish an annual report that summarizes the "nature, scope and results of the previous year's awards."

The report states that the study committee "does not believe that 'competitive bidding,' 'competitive negotiations' or any other direct form of price competition in the selection process would reduce the potential for impropriety, provide a practical or effective tool for selecting the most qualified A/Es or give young firms a better chance at federal work." The study committee declared that no evidence was presented that "competitive pricing would improve the GSA process or services to the public" and it would be "impractical and unwise for the government to select design professionals on this basis."

Sampson said that there will be several changes in the A/E selection methods in addition to those recommended by the committee. "Instead of depending exclu-

sively on an evaluation of professional competence and reputation, GSA will begin a process of awarding architectural and engineering design contracts on the basis of project proposals," he said. Starting in January 1975, firms will be asked to submit a "standard form which responds in detail to published project criteria." This means, Sampson explained, that "ultimately, GSA will award A/E contracts on the basis of fully developed project proposals: proposals that will include evidence of technical and professional distinction; estimated fees, construction and life-cycle cost estimates; and planning and design concepts." He pointed out that this is a "revolutionary step for GSA, and, in the long run, may have a significant impact on the construction industry."

AIA, one of the professional organizations that had been invited to nominate members of the study committee, has endorsed its recommendations and commended Sampson for his action in accepting them.

The committee focused its attention on GSA procedures rather than specific contract awards, conducting comprehensive research, public hearings and interviews. Members also attended GSA advisory panel meetings to observe the A/E selection process in operation.

A copy of the committee's report may be obtained for \$3 from any of GSA's regional business service centers.

## Senate Holds Hearing On Design of a Building

"Unique" is how George M. White, FAIA, Architect of the Capitol, characterized an early June hearing called by Senators to discuss their proposed new office building with a group of design professionals. It is, indeed, virtually unprecedented for Congress to solicit the views of outsiders on what to build on Capitol Hill. White said that in the recent past buildings constructed on the Hill "were found wanting after it was too late to do anything."

To avoid this prospect, the Senate Public Works Committee (Jennings Ran-



# LAST YEAR WE PROVED TO THE WORLD THAT NO NYLON HIDES SOIL BETTER THAN ENKALURE II.

*Now Slone's Pharmacy is proving it every day.*



When Slone's Pharmacy in New Milford, Conn. decided to remodel, they were sure of one thing. They'd have to get rid of the asphalt tile and replace it with carpet.

Carpet would have better

acoustical absorption.

And since it's more resilient, it would not only prevent breakage, it would be much more comfortable to walk on.

Besides, carpet *looks* better.

Now, which one?

Since Slone's is a heavy-traffic store, one

of the requirements was that the carpet had to have good soil-hiding properties in order to keep maintenance costs to a minimum.

Also, it had to be durable. To be able to keep its fresh appearance, no matter what.

The choice was clear.

Slone's decided on a carpet made with Enkalure® II soil-hiding nylon.

And from the wide range of patterns and colors available, they easily found the one that was perfect for their new color scheme.

They chose "Sampson" by Criterion.

The special multilobal construction of Enkalure II causes light to actually bounce off the fiber, keeping the colors looking bright and clear, even when the carpet is dirty.

Furthermore, Enkalure II has no deep grooves to trap dirt. Conventional nylon fibers do.

A grueling test by Nationwide Consumer Testing Institute proves that no nylon hides soil better than Enkalure II.

But the real proof is at Slone's.

For specific carpet information and a 14-page report of the test results, contact American Enka (Dept. AIA), 530 Fifth Avenue, N.Y., N.Y. 10036. (212) 661-6600.



*Enkalure II soil-hiding nylon by ENKA*



I'M SOIL.  
NO NYLON HIDES  
ME BETTER THAN  
ENKALURE II.



dolph, D-W. Va., chairman) and the Senate Office Buildings Commission (John Sparkman, D-Ala., chairman) asked for advice about the proposed design of John Carl Warnecke & Associates for an extension of the Dirksen Office Building, completed in 1958. The advisers were united in two recommendations: They highly commended the action of the Senators in calling for a public hearing before approval and construction, expressing the hope that more such public discussions will be held on matters of design for Capitol Hill; and they were in accord on the necessity of a master plan for the entire area.

Witnesses at the June hearing were White, who had worked with Warnecke on the building's program and design; Bill N. Lacy, AIA, director of architectural and environmental arts, National

drawings of the structure's interior. The office space is flexible and is maximized by mezzanine levels that yield a variety of interior scales. As John Carl Warnecke, FAIA, had explained to the design professionals in a briefing prior to the hearing, according to a report by Von Eckardt in the *Post*, "Senators are entitled to large offices with views and high ceilings. So he designed them duplex offices, as it were, two stories high," which "look out on huge, eight-stories-high, glass-domed 'galleries,' and a vast glass-covered inner court, or 'atrium.'"

The siting of the building was praised as well. The new structure, to be aligned with the other two Senate office buildings on Constitution Avenue, "takes into account the larger context of the surrounding area, respects the historic Belmont House (on Second Street) and success-

ful and adds a marble brise-soleil with measurements comparable to the modules of columns and columns-to-wall interstices of the Capitol dome. . . . One look at the flaccid, overblown phoniness of the Rayburn Building's pompous facade with its intellectual and esthetic insult to the classical tradition, and it is easy to love the new Senate Office Buildings. . . . Gentlemen, you are getting about the best possible example of Washington's curious Prafall School of Architecture and you might as well go ahead and build it."

Von Eckardt wrote that "marble is massive" and to enclose 1 million square feet of working space so that it doesn't look "as clumsy as it might" was a "considerable achievement" on Warnecke's part. "His trouble," stated the critic, "is not only that his building is, of necessity, larger and higher than its parent. It is also that the parent—let's face it—is not as good a building as Warnecke's is."

Lacy told the Senators that "bulk and blandness have been, in the past, notable characteristics of federal architecture. At one time, large and imposing buildings were considered essential to express the stability of a young government. It is no longer necessary to flex our architectural muscles for public relations purposes. It is more important to express the concept of a government accessible to the people."

The public hearing about the building, which will cost an estimated \$60 million—that may be pushed upward by inflation—is another means of assuring the government accessibility of which Lacy spoke. Meanwhile, Warnecke is back at the drawing boards, making some refinements in his design. As those who testified said, without a master plan for Capitol Hill it's difficult to determine just what the new structure should fit in with and relate to.

## AGC Opposes Escalation Clauses

This country cannot "combat inflation effectively if each of us is content to pass on to the user proposals containing escalation clauses without any effort to establish a firm price. Someone has to draw the line some place. We are." So said Saul Horowitz Jr., president of the Associated General Contractors of America, when he announced that AGC's executive committee voted against escalation clauses and will continue its policy of opposition to such clauses which allow a general contractor to pass on increased costs to owners.

Horowitz said that the general contractor has "traditionally assumed the risk of price fluctuations, weather variables and labor difficulties" and that there was no

*continued on page 10*



*New Senate Office Building (left), Dirksen Building (center)*

Endowment for the Arts; Jean Paul Carlhian, FAIA, vice president of the Boston firm of Shepley Bulfinch Richardson & Abbott; Thomas Burke Simmons, AIA, a Washington architect and a representative of the Capitol Hill Restoration Society; Wolf Von Eckardt, Hon. AIA, architecture critic for the *Washington Post*; and William L. Slayton, Hon., AIA, executive vice president of the Institute.

White said that inviting the "considered advice of design professionals with national stature is a major step in improving informational methods as well as a means of assisting the committee in evaluating the project and the overall development of the Capitol complex."

Slayton expanded upon the theme of "overall development," calling for Capitol Hill to be "an outstanding example of architectural . . . and urban design excellence." He said, "Now is the time for the Congress to concern itself with its future functions, the structures to house these functions and the overall design of Capitol Hill." This admonition was also in Carlhian's remarks, who said that the need for a comprehensive master plan was "desperate and timely."

Evidently, the Senators and those who testified alike admired the models and

fully provides pedestrian and vehicular links with the older Senate offices and the Capitol," Lacy testified. He remarked that the architects "have correctly chosen not to emulate the architecture of another period—nor have they designed in total contrast with it." He did call, however, for "further refinement of the proportion and scale of the external grid," saying that the present solution "belies the horizontal divisions within the building."

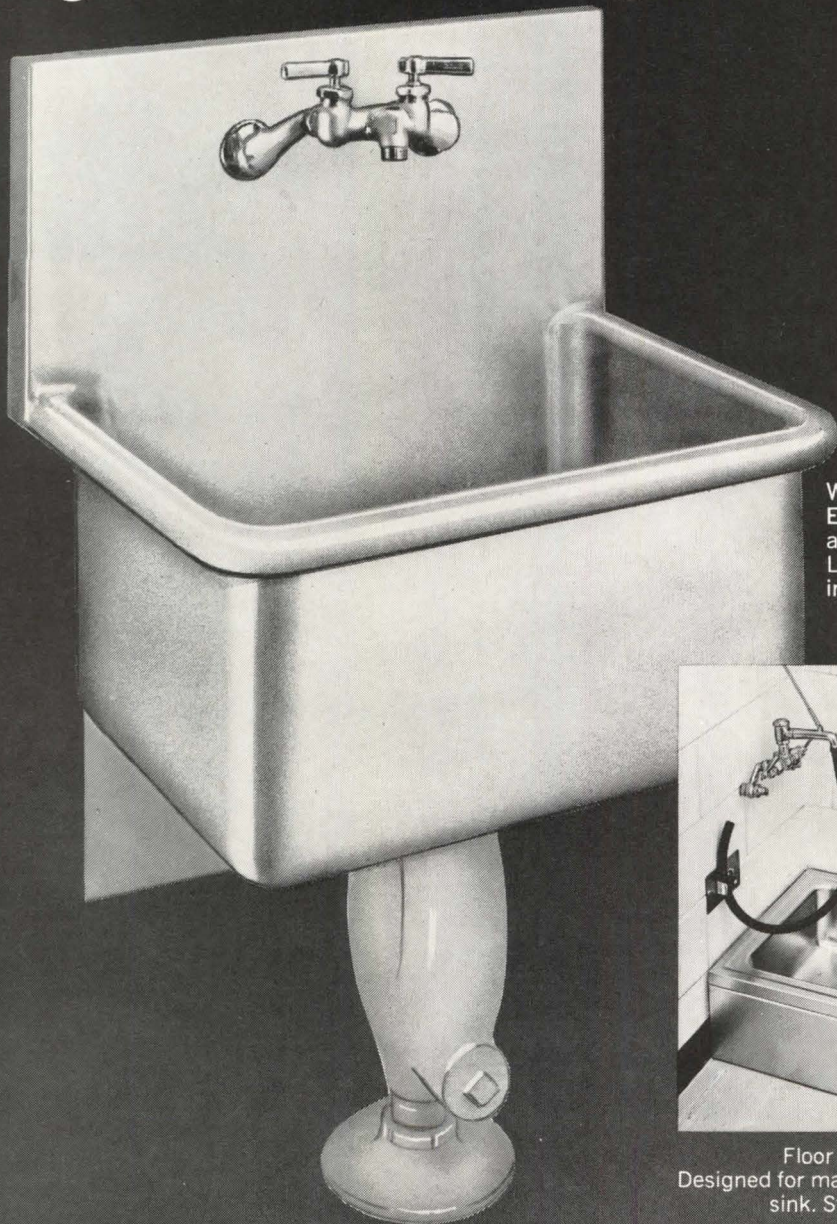
Architectural critic Ada Louise Huxtable, Hon. AIA, wrote in the *New York Times* that the "weakest" element of the design is its facade treatment, "which wraps around an extremely well thought out office and circulation plan." The facade, she commented, is "where most Washington architecture falls on its face, or its rear, hamstrung by a set of inexorable rules that the capital imposes on its official buildings." She said that architects who are successful elsewhere fail in Washington because the design rules say, "Make it white, make it marble, make it reminiscent of something older and vaguely Greco-Roman, no matter how far-fetched and tenuous the connection may become." She termed Warnecke's design "more successful than many" since it "makes the most of duplex Senatorial of-



## SERVICE AND MOP SINKS

Elkay stainless steel service sinks offer easy care, great durability and positive sanitation. Stainless steel brackets are standard on the wall model. Three available sizes to give lifetime service at a reasonable price. The floor style service sink, made in two sizes, has many optional features. Elkay service sinks end maintenance drudgery.

*from the ELKAY<sup>®</sup> family of firsts*



Wall Service Sink Model ESSB-2520. Efficient design for today's service sink applications. Standard fittings include LK-400 mixing faucet and LK-173 cast iron, enameled inside, adjustable "P" trap.



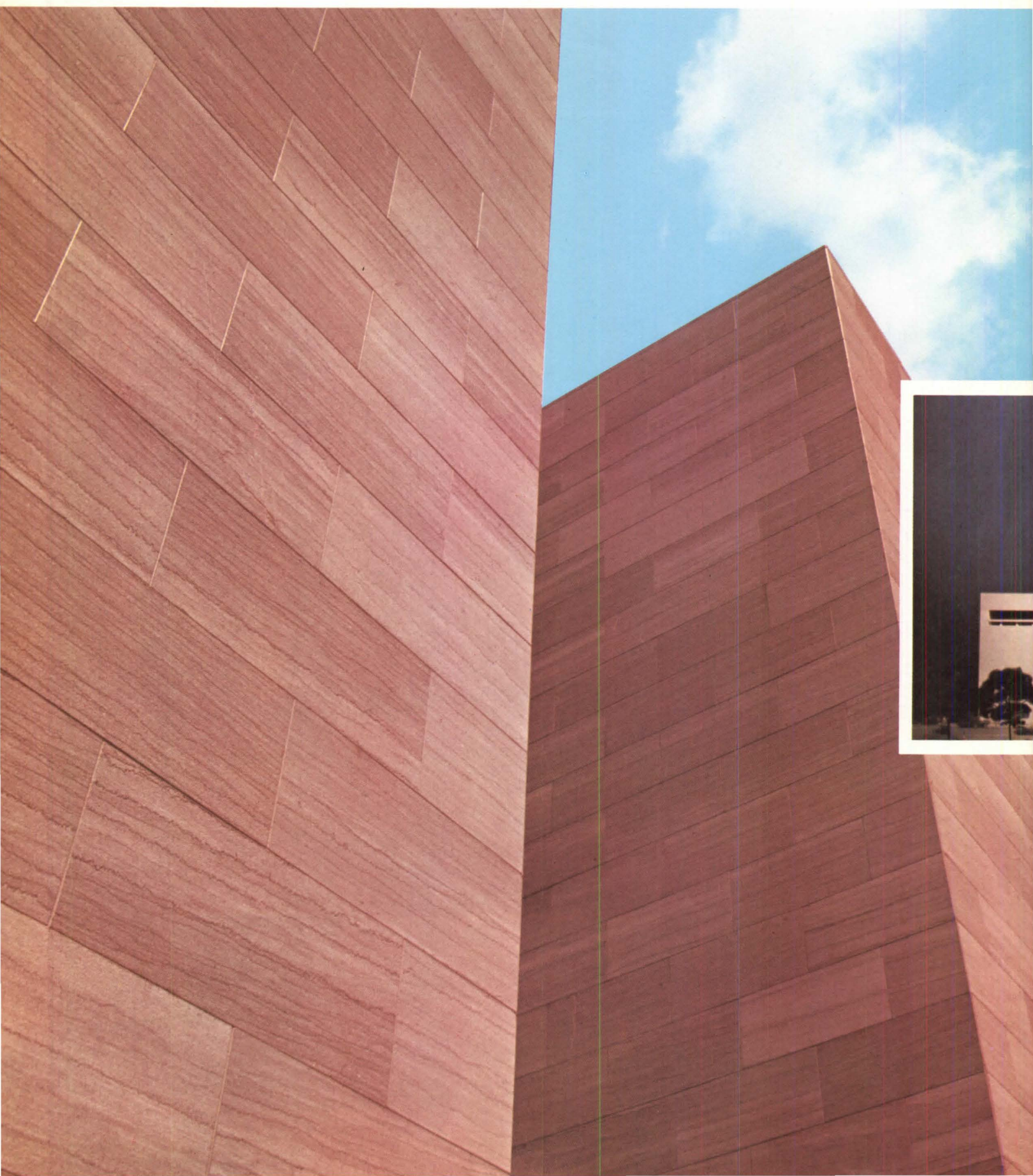
Floor Service Sink Model EFS-2523. Designed for maximum convenience as a mop sink. Standard fitting LK-43 stainless dome strainer for caulking 3" I.P.S. Additional equipment available: LK-401 faucet, LK-402 hose, LK-403 3-station mop holder and LK-404 hose hanger.



For complete information write for Catalog No. IPC-2 or call Customer Service Dept., Area Code 312-681-1880. ELKAY MANUFACTURING COMPANY, 2700 S. Seventeenth Ave., Broadview, Ill. 60153

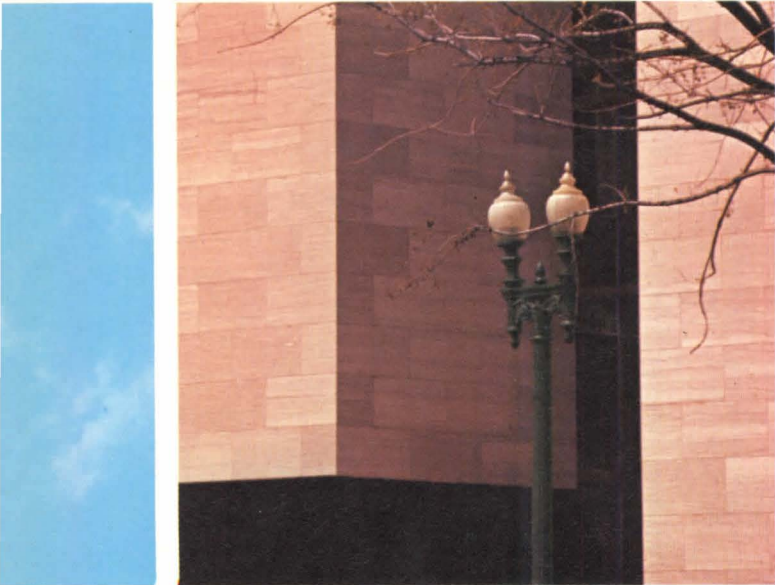


# Tennessee Textured Marble





# A stone of rare character for the National Air and Space Museum

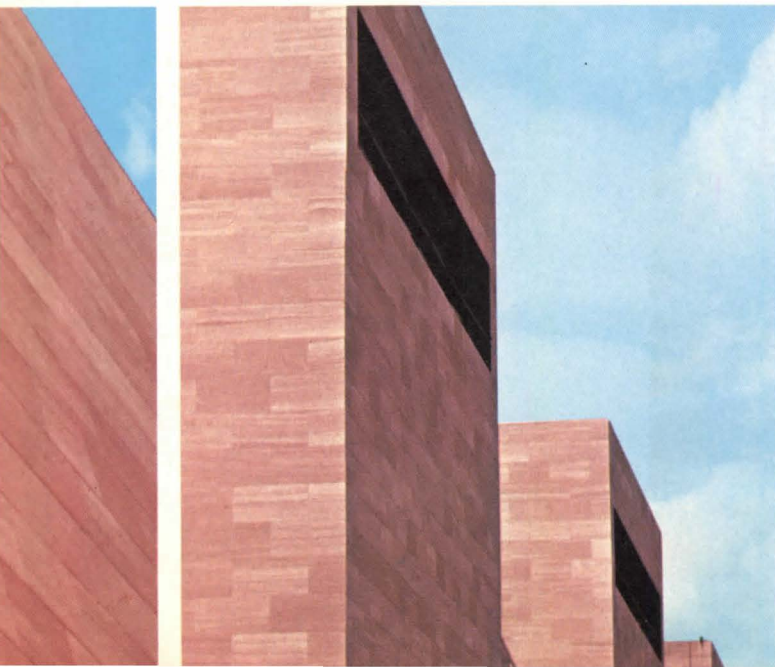
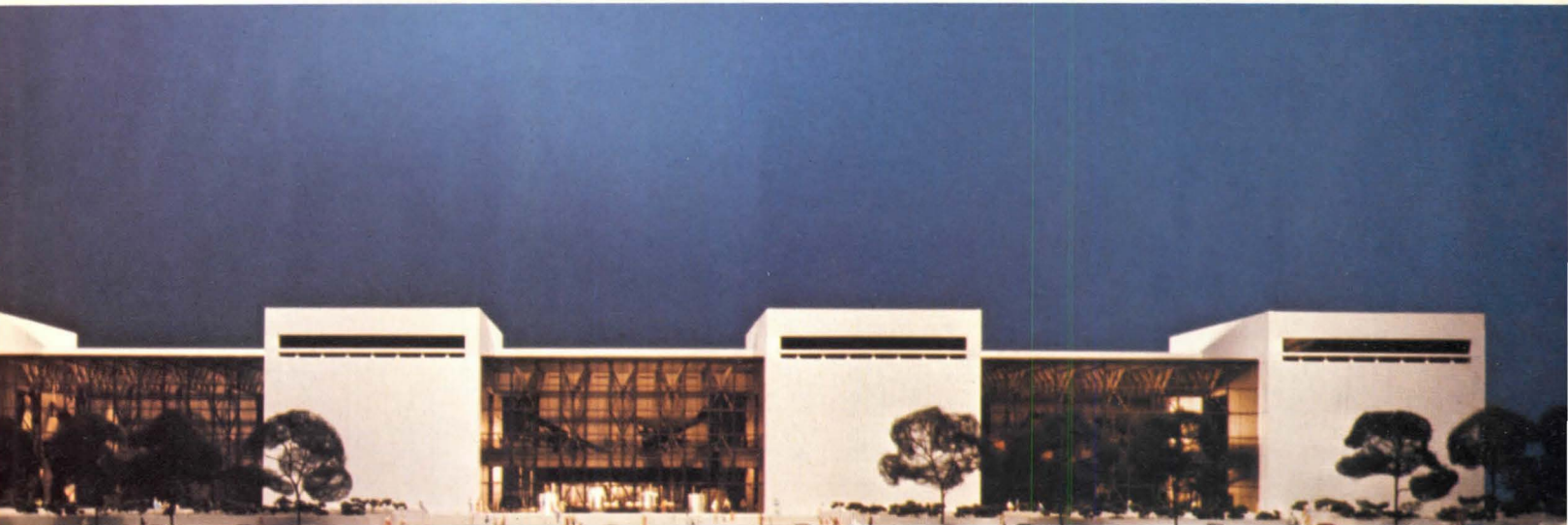


In the hills of Tennessee, nature's ancient artistry created a singularly interesting stone whose beauty we have enhanced with a new, deep-texturing process.

Essentially warm in tone, Tennessee Textured has a subtle coloration that varies with changes in light. And close up, the eye is captivated by a curious dark, delicate veining that runs through the stone.

Tennessee Textured is a material of rare character that offers designers something truly out of the ordinary with which to work. Would you like to see a sample?

Hellmuth, Obata & Kassabaum, Inc., Architects  
Gilbane Building Company, Construction Manager  
Peter Bratti Associates, Erection Contractor



The National Air and Space Museum is now rising on the Mall in Washington. The Tennessee Textured is 1¼" thick and supported on a steel grid system. A typical piece of stone measures 5' x 2½'.



**georgia marble**  
company

3460 Cumberland Parkway  
Atlanta, Georgia 30339  
404/432-0131

a **Jim Walter** company

Circle 5 on information card



Going On from page 6

need to back down now "just because the going is tough." He called on contractors to use care when bidding on a job "to avoid the dangers of wildly fluctuating prices and availability of materials."

AGC will ask other construction industry associations to reaffirm or adopt similar positions to insure firm prices for their clients.

## Land Use Bill Falls Before Solid Conservative Opposition

Legislation providing federal aid and incentives to state land use planning, which had experienced an agonizing series of ups and downs, went down with apparent finality in mid-June.

The House rejected it 211 to 204 on a procedural vote even before it could be debated, amid charges that the President, who had originally supported it, had changed his position to please the conservative legislators whose votes he would need to stave off impeachment.

Whatever the merits of these charges, the tenor and intensity of the lobbying that preceded the bill's defeat made it clear that opposition to any federal involvement in land use had become a tenet of conservative ideology, much in the way that opposition to metropolitan governance had earlier.

The American Conservative League said that the land use bill would "extend the powers of eminent domain to include confiscation of property without compensation." The Liberty Lobby called the measure an "important step toward the communist and socialist goals of controlling the means of production and distribution."

The U.S. Chamber of Commerce, which gave stiff opposition to the bill, called it an "expression of no-growth philosophy." Other opponents included the American Farm Bureau Federation, the National Cattlemen's Association, the National Association of Home Builders and members of the construction trades.

Rep. Morris Udall (D-Ariz.), the bill's chief sponsor, was asked by a newspaper reporter to explain why 75 Democrats joined 136 Republicans in voting against the bill. He replied, "The chief opponents were the very conservative wing of the Republican Party. The other group was the rural Democrats. The heat they were getting was very genuine. They would go home and find their Chamber of Commerce, their timber people, their soil conservation people and farmers were all against it."

Udall says that the bill is dead for this year, but Sen. Henry M. Jackson (D-Wash.), who twice guided the bill through

the Senate, has said that he's "only begun to fight." He said that he would try to attach the land use measure to an Administration "must bill."

## Saving San Francisco's Victorian Heritage

Four young San Francisco men who thought that too much of their city's Victorian style was being lost because of the high cost of replacement have done something about it.

They founded San Francisco Victoriana, a manufacturing and supply center for the restoration of wood-framed Victorian structures. They design and build complete Victorian facades as well as interiors.

The four—Gary Kray, Gary Root, Bill Lambert and Brad Hallett—opened an



office/workshop at 606 Natoma Street in the city's Mission District last summer with the aid of a \$30,000 Small Business Administration loan. Since then business has boomed, says Kray.

"Mainly we work with a homeowner or property owner who wants to put back the original facade on his building, but we also do interiors—authentic Victorian drugstores, bars and parlors," Kray says. They work from about 20 period catalogs to recreate the designs of yesteryear.

In addition, the shop offers its clients—who also include architects, interior decorators and contractors—a large range of standard and custom millwork, solid bronze and cast iron hardware, ornamental glass and plaster, lighting fixtures and numerous other period appointments at low cost.

High costs were why they founded San Francisco Victoriana. "It just got too expensive for most people to replace parts, let alone rebuild an entire facade," says Kray. The problem was that most contractors were not geared to do that kind of work. Too often the result was that the owner would not have the work done at all—and the city became the loser as another Victorian facade was wrapped in aluminum.

The work might be as simple as replac-

ing a burned-out window and frame or a cracked ceiling moulding or as complex as removing an asphalt-shingle facade and restoring the original Victorian.

Their shop is filled with woodworking equipment and projects in various stages. While one partner is assembling a panelled door, another might be turning a newel post on a lathe, the third carving an ornate bracket and the fourth running through a current catalog of Victorian fixtures with a client.

The four, who range in age from 24 to 31, have interests that complement one another. One had been doing woodworking, one is interested in architecture and design, one has a degree in history and the other, a degree in business administration.

Partner Kray sums up their approach. "We are reviving a lost art and an old tradition in a city long known for its unique architectural style."

San Franciscans are not the only people buying the idea; San Francisco Victoriana has had requests for help from as far away as Michigan. *Carleton Knight III*

## Preservation Policies of Postal Service Questioned

An official of a Pittsburgh historic preservation organization recently wrote to James Biddle, president of the National Trust for Historic Preservation, saying that the Postal Service "is planning to renovate—or transmogrify—the lobbies of most of the post offices across America. It has developed a standardized design which involves discarding old light fixtures, bronzework, woodwork, all signs of past ornamentation, all the great bronze mailboxes, all the bronze, brass and wooden writing tables." He continued that Pittsburgh was "about to suffer this affliction in its main post office" and that nothing could be done locally about "this benighted notion."

Biddle, in turn, wrote the postmaster general, asking for the postal authorities to review Presidential Executive Order 11593 of May 1971 on historic preservation, as well as the intent of the National Historic Preservation Act of 1966. He called for an exhibition of "sensitivity in insuring that the rich irreplaceable architectural elements of many of this country's major post offices" will not be "adversely affected by modernization."

Biddle alerted Clement M. Silvestro, chairman of the federal Advisory Council on Historic Preservation, who also wrote the postmaster general, saying that the council is "deeply concerned that an implementation of the renovation program may impair the architectural and historical integrity of many post offices which frequently represent the outstanding ex-

*continued on page 14*



# WHAT MAKES THIS ALL-GLASS BUILDING SO ENERGY EFFICIENT?





# THE GLASS. PPG SOLARBAN® 480

The First International Building in Dallas is a brilliant example of the efficiency of glass buildings.

Its skin is nearly all glass.

Yet the press has hailed it as "...the most energy-efficient building in Dallas."

This is not in spite of being glass, but because it is PPG Solarban 480 Twindow insulating glass.

## Where the energy goes.

In planning this building the design team saw (as you can see on the chart) that about 50% of the energy would go to light it.

Another 14% to run the fans, elevators and various office machines.

About 7% to heat it.

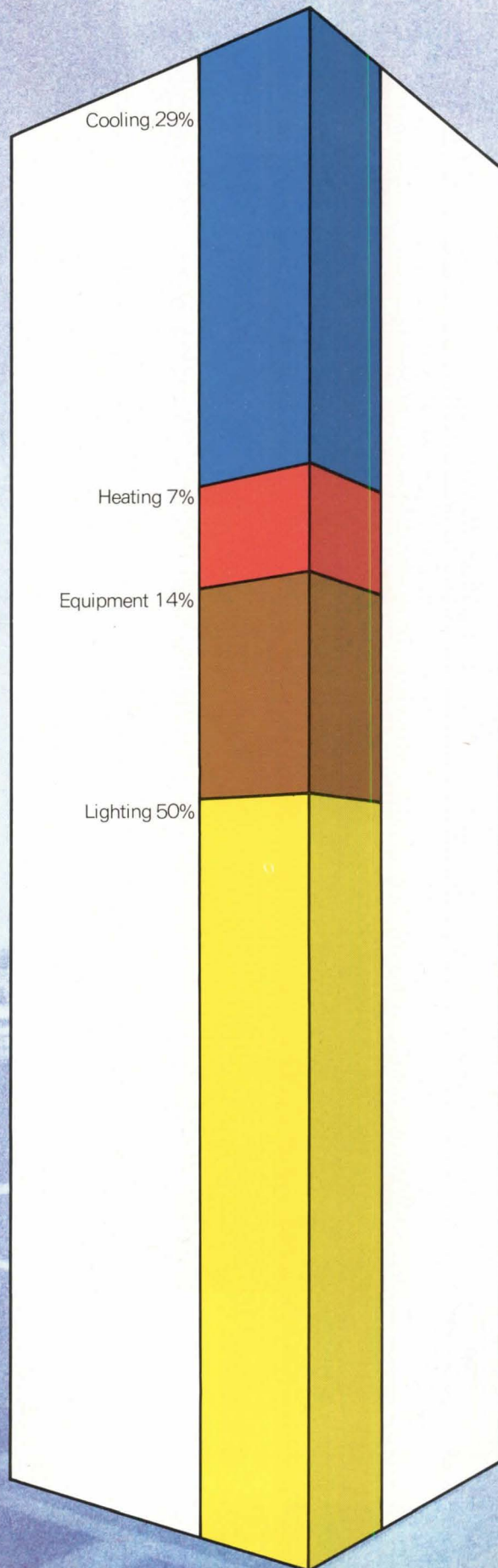
And because it's Dallas, 29% to cool it.

So they decided to cool it—with the most innovative, energy-conserving air-conditioning system technology could provide.

But they needed high-performance glass to do it.

**It reflects, insulates and saves.**

PPG Solarban 480



Twindow reflective insulating glass has a shading coefficient of 0.22.

This reduces solar heat gain by 78% compared to single-glazed clear glass.

And the double glazing drastically reduces the conducted heat gain (or loss) through the skin of the building.

## The bottom line is this:

The innovative, all-air mechanical system saves both energy and money. It reclaims heat from the lighting and large interior spaces and redistributes it for perimeter heating when needed.

And the simplicity of its design saves even more money.

As the Herman Blum Consulting Engineers put it: "If you're going to use an all-air system in a high-rise building, you've almost got to have a high-performance glass."

**The right glass is the right answer.**

Today, there is a flurry of antiglass invective.



# TWINDOW<sup>®</sup> INSULATING GLASS.

People would have you think that less glass used means more energy saved.

Not necessarily so.

It's really a question of quality, not quantity.

And buildings like the First International Building prove it.

Our graph illustrates one important point to keep in mind with "all-glass" buildings.

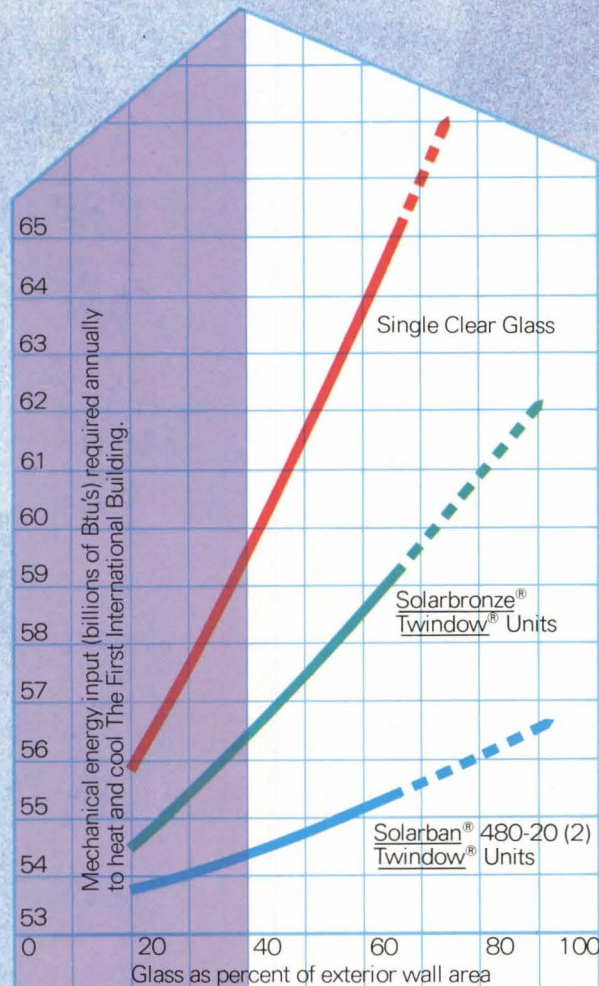
A building that's 70% Solarban 480 Twindow insulating glass (and that's 70% vision glass we're talking about) is more energy efficient than the same building using cramped little clear glass windows totaling only 20% vision area (and that's an 80% opaque wall).

## The transparent advantage.

If a glass wall can be used instead of an opaque wall, it's obviously better.

It's transparent.

Experienced owners agree that tenants find a building much more desirable when they can see the outside from the inside. And certainly an important mea-



sure of the success of any building is the effect it has on the satisfaction of its tenants.

Economically, esthetically, psychologically—no matter how you look at it—glass is a building material of remarkable potential.

Especially in conserving energy. An important point to remember.

PPG High Performance Glasses come in a wide range of performance values to suit your building's economic and esthetic considerations.

Write PPG Industries, Inc., One Gateway Center, Pittsburgh, Pa. 15222.

The First International Building, Dallas, Texas

Owner: First National Bank in Dallas  
Architects: Harwood K. Smith & Partners, Dallas and Hellmuth, Obata & Kassabaum, Dallas and St. Louis

Mechanical Engineers: Herman Blum Consulting Engineers, Dallas, Texas

PPG: a Concern for the Future



INDUSTRIES



Going On from page 10

ample of public architecture in a locality." He reminded the postmaster general that in a directive dated November 13, 1972, the Postal Service "committed itself to compliance with the policies of the National Preservation Act of 1966 and Executive Order 11593."

The directive from the Postal Service to all regional postmasters does not turn out to be very specific, however. It states that the statutes "are not applicable to the Postal Service under the Postal Reorganization Act," but that as a "matter of policy it is the intent of the Postal Service to comply to the fullest extent consistent with the Act." This includes, states the directive, a determination of postal properties that might be eligible for inclusion in the National Register of Historic Places. Also, if a postal-controlled property on the national register is to be altered or demolished the facts must be presented to the Advisory Council on Historic Preservation "for comment" and records of the property are to be made and deposited with the Library of Congress. The registered sites will be maintained, "wherever feasible," at professional standards prescribed by the Secretary of the Interior. "It will be our policy," the directive states, "concerning the extent to which the Executive Order 11593 restrains utilization, alteration, disposal, etc., of applicable facilities, to determine any impact on a case by case basis."

The AIA JOURNAL made a number of calls to the Postal Service to obtain information about the standardized design for post office lobbies, but no one was able to shed additional light on the subject. The Advisory Council on Historic Preservation has asked the postmaster general to designate an official to meet with the council to discuss the matter.

## A Greenhouse Grows in The Heart of Boston

A Boston florist has come up with a better idea. He has opened a greenhouse from which to sell flowers on a center city site that was to be turned into a parking lot.

The site, at 385 Boylston Street in back of the Arlington Street Church, became vacant after two old rowhouses burned and had to be demolished. The usual procedure would then have been for the owner to open a parking lot.

In this case, however, the Back Bay Association, a powerful merchants' group, and the Boston Redevelopment Authority decided that the city had had enough of the blight-bringing parking lots. They approached Maynard Winston, a florist who has had a shop on nearby Newberry Street for many years, to see if he would be interested in the Boylston Street location for a branch operation.

Indeed he was. Winston had long wanted to build an in-city greenhouse but never had the right opportunity. He asked a friend, architect Peter Thomas of Cambridge, Mass., to study the possibilities. After turning down an original design because of costs, they found an old, unused greenhouse in a Boston suburb, had it dismantled and then reassembled ("It's like a giant erector set," says Thomas) on the Boylston Street site last summer.

A few changes were necessary—like raising it on seven-foot columns so that people can walk around inside (most greenhouses are about five feet high at the



eaves) and adding a small building at the rear with a mezzanine for ancillary facilities.

Architect Thomas points out a number of advantages to an in-city greenhouse: There is no heat loss at the sides as in a regular greenhouse—this is an infill building; flowers can be left to continue growing if they are not sold—in a regular florist shop they must be sent out to a greenhouse; steam pipes located in the street to heat nearby buildings provide that same function for the greenhouse—thus precluding harmful exhaust fumes from in-house equipment.

The economics of the venture were a major concern. A developer owns most of the block and may construct an office building there in a few years. Thus, any building put on the leased site had to be movable and preferably not expensive. The greenhouse was ideal. C. K. III

## Justice Challenges Bar Association Fee Schedule

A civil antitrust suit has been filed in the U.S. District Court in Portland, Ore., by the Department of Justice in which the Oregon Bar Association is charged with setting fees illegally for members. This is the first time that the Department of Justice has charged that suggested fee schedules used by the legal profession violate

the federal antitrust laws. The complaint charges that clients are prevented from obtaining legal services at competitively determined rates. The association contends that minimum fee schedules were replaced more than a year ago by suggested fee schedules and that its members are not disciplined for charging less than the recommended schedule.

## Interior Design Award To Recycling Study

Brian Berg, a student in the department of architecture at the University of Washington, and Coral DeWilliams, who is enrolled in the university's department of interior design, have won the 1974 environmental design project award of the National Society of Interior Designers Educational Foundation. The program aims to bring students of interior design or related disciplines into "direct contact with the challenges that face us today, to encourage them to study in depth and to create practical design solutions" to environmental problems.

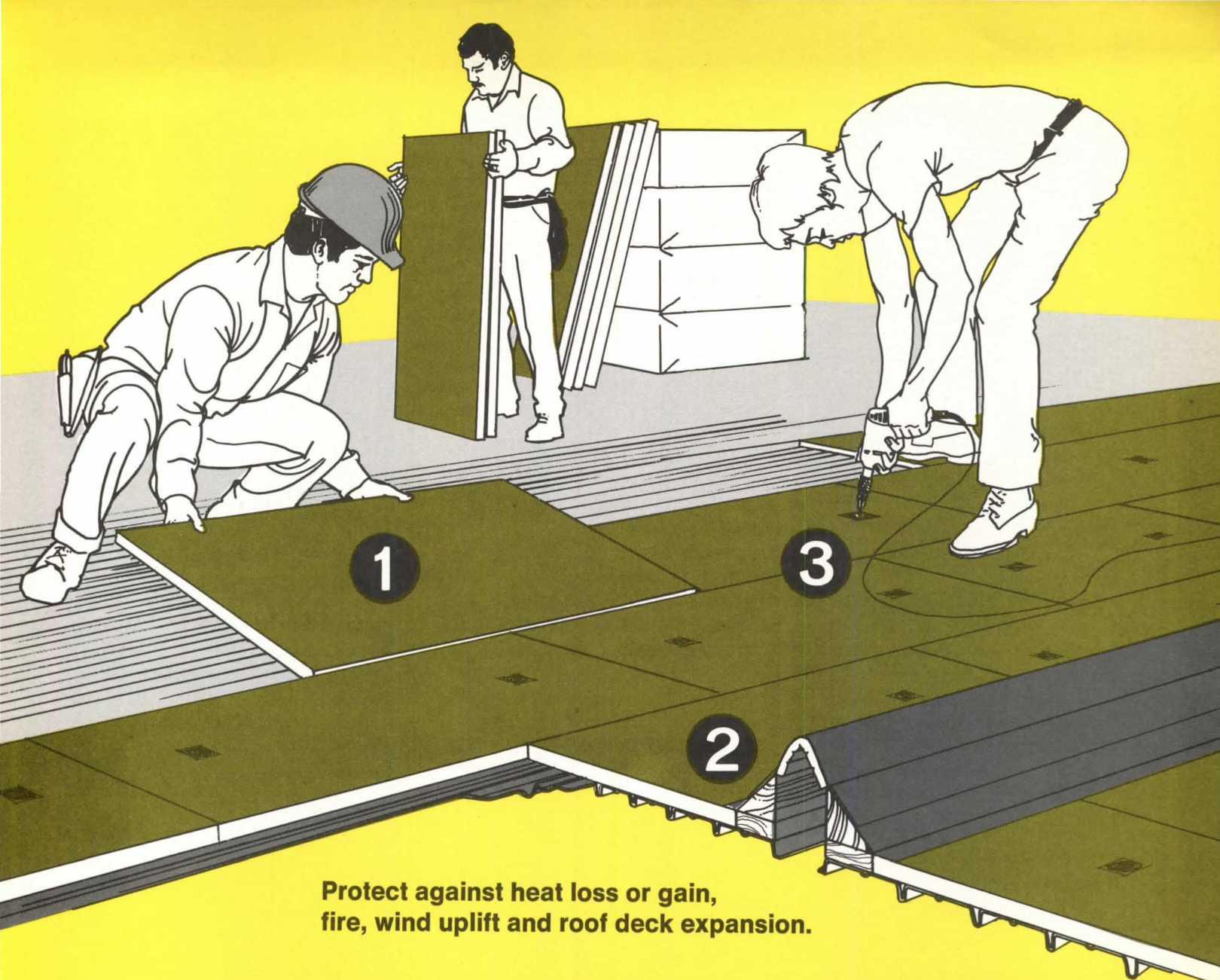
The winning project is development of a plan to preserve and bring new life to the Union Station Building in Tacoma, Wash., and to "make an ecological response to transportation energy demand." The neglected structure and its site will be studied, as well as the feasibility of its redesign and reuse. A transportation plan, part of the project, is aimed to accommodate added transit modes, parking facilities, freeway location and recreational areas. The students have been awarded \$1,346, the amount they estimate will be needed to complete the project.

## Awards to Students for Corrections Architecture

A national student awards program on correctional architecture, sponsored by the AIA and the National Clearinghouse for Criminal Justice Planning and Architecture at the University of Illinois, emphasized the role of the architectural profession in the "creation of community-based service delivery systems that can integrate treatment programs, societal resources and appropriate physical settings." Part of a program developed by the AIA's committee on architecture for criminal justice, the awards aimed to address the "broad range of environmental needs in corrections."

Forty-three winning entries were selected by a jury of architects, social scientists and administrators of correctional institutions. Top honors in the intake service center category went to James Ditzel of Miami University, Ohio; first place winners in the residential treatment





Protect against heat loss or gain,  
fire, wind uplift and roof deck expansion.

## Security starts at the roof with GREFCO

### 1 Permalite® Sealskin® Rigid Roof Insulation

provides a better insulated roof for a longer time with less trouble. Composed of feather-light, non-combustible perlite, waterproofing agents and binder. Integral Sealskin surface treatment provides both resistance to bitumen soak-up and a superior bond of roofing felts to insulation. Resistant to vermin, mildew and rot. Easy to lay and fit. Non-irritating. FM and UL listed.

### 2 Metalastic® Expansion Joint Cover

is the only expansion joint cover that has a seamless extrusion. Perforated 2"-wide tempered steel nailing strip in each flexible vinyl flange provides positive fastening and avoids concern of use with dissimilar metals. Flexible at temperatures

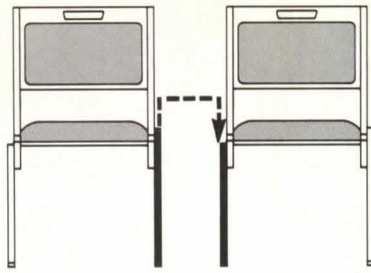
down to  $-50^{\circ}\text{F}$ . and resistant to aging, cracking and atmospheric pollutants. Will not loosen, shrink or corrode. Splicing takes only seconds regardless of temperature.

### 3 Perma-Fastner™ Roof Insulation Attachment System

holds better — saves bitumen. One specially designed, patented Perma-Fastner every four square feet holds board tightly to deck without adhesive — hot or cold — and provides positive protection against wind uplift, vibration and construction movement. Strong 3" x 3" steel distribution plates — not tin tabs — secure boards firmly without damage to insulation or felts. Self-drilling, self-tapping screws completely fill holes they make in deck. Perma-Fastner is FM and UL approved for use with GREFCO and other insulations.

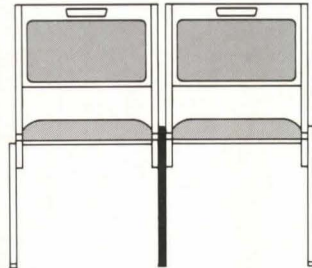


now you  
see it...



Left leg is higher...

now you  
don't!

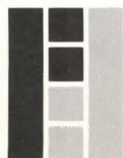


to fit over right.

### THE FUNCTIONAL UPHOLSTERED STACK/GANG CHAIR #297

**New-Patented-Hidden Gang** (one side only)

No unsightly protruding gang on each side of the chair to snag hose, bump people or other chairs at banquet tables. But this chair does have a positive gang for uniform row auditorium seating that meets fire codes. Safe-interlocking stack on the floor 20 high is only 79" tall and within easy reach.



FIXTURES MFG. CORP.  
1645-A CRYSTAL  
KANSAS CITY, MO. 64126  
PHONE COLLECT  
816/241-4500

Commercial Furniture in Advanced Design  
Current Catalog 1-73

center category were University of Michigan students Randall Lasky, Peter Kuttner and Greg Hauser; first honors in the community correctional center category went to Michael J. McMillen, University of Virginia; and in a fourth category called "open," first place winner was Scott Kinzy of the University of Nebraska.

## Research Corporation to Review Energy Guidelines

The General Services Administration has awarded a contract to the AIA Research Corporation to review the publication "Energy Conservation Design Guidelines for Office Buildings" and to make recommendations for its revision (see May, page 31). The guidelines provide the first comprehensive criteria for conserving energy in the design, construction and operation of office buildings.

Project manager under the contract is David C. Bullen, AIA, on leave from the Houston-based firm of Caudill, Rowlett, Scott. The AIA Research Corporation will supply GSA with technical consultation on questions raised by the guidelines and for the preparation of a more extensive section on solar energy applications and identification of computer programs for energy conservation analysis compatible with guideline requirements.

## John Gaillard Promoted

John C. Gaillard, who has been a member of the Institute staff since December 1972, has been promoted from assistant director to director of AIA urban and housing programs. Immediately prior to his association with the AIA, he was executive director of the Ouachita Council of Governments, Monroe, La., where he directed staff work on a comprehensive plan for Ouachita Parish. Gaillard holds a bachelor of architecture degree from Auburn University and a master's degree in regional and city planning from the University of Oklahoma.

Carter McFarland, former director of urban and housing programs, will serve as a consultant to the AIA on housing.

## The First Hopi Indian To Become an Architect

The first Hopi Indian to become a registered architect is Gilbert Honanie, who was born 32 years ago on the Navajo Reservation north of Flagstaff, Ariz. There was no high school on the barren reservation, and he was given special permission to attend school in Phoenix, and later the Haskell Institute in Lawrence, Kans.

He worked for a time as a draftsman,  
*continued on page 21*



Going On from page 16

and his employers urged him to go on with studies in architectural design. Subsequently, after marrying and becoming a father, he was graduated from the Arizona State University with a bachelor's degree in architecture. Now he is associ-



ated with the Phoenix firm of Schoneberger, Straub, Florence & Associates as a project architect.

Honanie believes that design should "weld the concepts of Southwest contemporary architecture with those abstract creations appropriate to the special qualities in a region's environment." He hopes to communicate with the people of his childhood through the medium of architecture. Each time he goes back to the reservation, he is aware of the great chasm between two societies, but he hopes that new and better buildings for Arizona Indian tribes will be the beginning of a bridge between the two cultures. He plans to travel extensively to "better understand other phases of architecture and become proficient at expanded regional planning."

## Suppliers Sponsor Solar House

The Copper Development Association will construct a "solar-assisted" house, containing about 3,000 square feet of living space, near Tucson, Ariz. The four bedroom residence, to be completed late this year, is designed to demonstrate that today's solar technology can be engi-



neered to provide a new kind of maintenance-free, comfortable living environment. Solar energy will be used to replace about 60 percent of the consumption of conventional home energy.

The so-called "Decade 80 Solar House" is being co-sponsored by major American companies in the building construction products field. Its architect is M. Arthur Kotch, AIA, of Houston.

A solar-energy-collector copper roof system, the nucleus of the house, is glass-

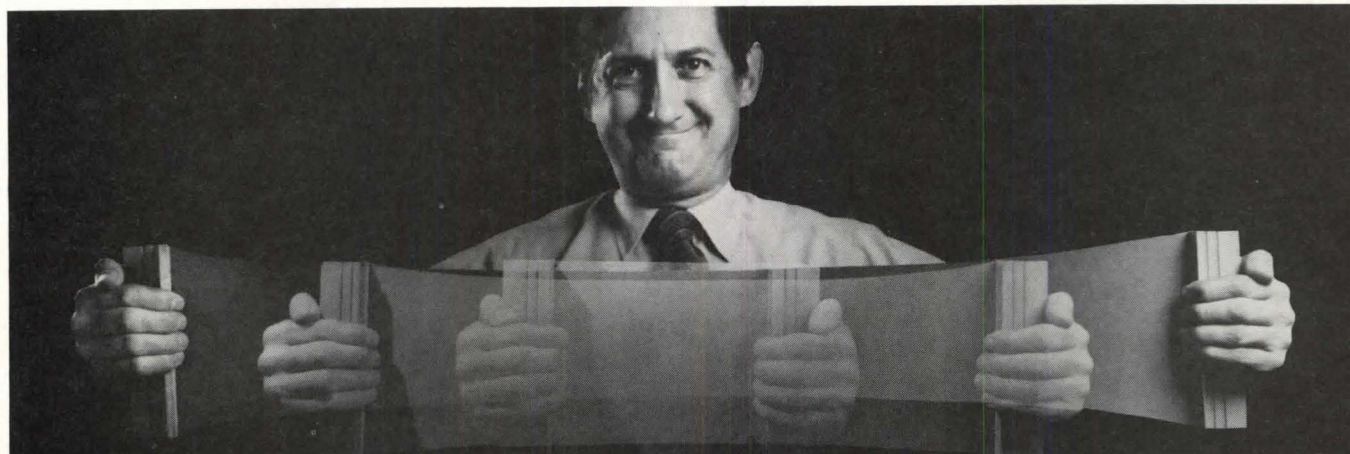
skinned for greater heat collecting efficiency. Copper tubing containing water is integrated into the system to serve as the chief energy transport and storage medium, and silicon solar cells will convert the sun's energy to low voltage power. The house will be instrumented for computerized analysis to produce data on solar energy technology in a normal home environment. The information, to be made available to professionals, will be updated regularly.

## Businessman Designs Presidential Library

Wayne Field, a businessman in Edina, Minn., has drawn up plans for the Richard Nixon Center for an unspecified site in California. Wayne is quoted in a Minneapolis newspaper as saying that he turned his talents to architecture because he was challenged to design the "most unusual building in the world for a great cause." Field, who sought the Republican nomination for governor of his state in 1958, volunteered his services after a meeting with the President's brother Edward, who told Field of the research he had done for the Richard Nixon Foundation to study possible locations for the Presidential library.

Field's plan calls for a five-story, four-

*continued on page 74*



## Your building won't move this much but we're not taking any chances.

That's because Elastalum expansion joint seals can expand to 9 times their original size without loss of seal. Problems usually associated with vertical shear, lateral shear and compression are eliminated because of 360° omni movement.

Elastalum's monolithic seal is waterproof,

dustproof, economical and easy to install. No vinyl gaskets, screws, bolts to assemble. Cuts installation time by 50%. It's shipped to your specified lengths, completely assembled.

Available in three permanent colors. Test for yourself. Write for free sample (and literature).



**CONSTRUCTION SPECIALTIES, INC.**

P.O. Box 380, Muncy, Pa. 17756/(717) 546-5941  
725 Twin Oaks Valley Rd., San Marcos, Ca. 92069

40



# Construction Cost Estimates—First 6 Months 1974



**EDWARD GALUR & SONS**  
 construction cost consultants  
 since 1920

## APARTMENTS / TOWNHOUSES / HOTELS / MOTELS / RESIDENCES

Residence for Mr. & Mrs. Charles Robb, McLean, Virginia, E. Jay Smith Construction Co., Ford, Powell & Carson, AIA  
 Residence for Daniel M. Bergbauer, Clinton, Maryland, Home Planners, Inc.  
 Residence for Mr. & Mrs. Jay A. Salmanson, Montgomery Village, Md., Kettler Bros., Donald Francis Nalley, AIA  
 Ocean Pines Condos, Ocean City, Md., Boise Cascade/S & K Development Co./Arnold Kandel, Robert Bradford Browne, AIA  
 Glade Bark Townhouses, Reston, Virginia, Fox Vale Construction Company, Kohler-Daniels, AIA  
 Monumental Housing/Garden Apts. & Townhouses, Baltimore, Md. FHA 236, Syphax Constr. Co., Sulton & Campbell, AIA  
 Montrose Woods, Rockville, Maryland, Montgomery County Housing Authority, Turkey MD 4-16, Madis Valge, AIA  
 Hunt Valley Inn, Hunt Valley, Maryland, Maryland Properties, Inc., Henry Powell Hopkins, FAIA  
 Tiburon Mid-rise Condominiums, Ocean City, Maryland, Jeffmar Development Corporation, Nelson-Sabes, AIA  
 100 units  
 Sumner Village Garden Apts./Sec. IV, Sumner, Md., Geo. Mulligan & Assoc., Cohen, Haft, Holtz, Kerxton & Karabekir, AIA  
 104 units  
 Churchill Condominium Gdn. Apts., Germantown, Md., Atlas Community Bldrs./Robt. Bowman Masonry Co., B.A. Berkus, Arch.  
 105 units  
 Churchill Condominium Gdn. Apts., Germantown, Md., Atlas Commun. Bldrs./Robt. Bowman Masonry Co., Theo. Bennett  
 106 units  
 Elderly Hi-rise, Bethesda, Md., Montgomery Co. Hsg. Auth., Turkey MD 4-17, Macro Devel. Co., Andrew V. Donnelly, AIA  
 156 units  
 Harabee Hotel, Washington, D.C., Edward Murphy, Sulton & Campbell, AIA  
 169 units  
 Tysons Tower Elderly High Rise, Centerville, Virginia, Robert Bowman Masonry Company, Inc., Eugene A. Delmar, FAIA  
 189 units  
 Ramada Inn, Crystal City/Alexandria, Virginia, Coakley & Williams, Inc./Allied Decorators, Harvey L. Gordon, AIA  
 197 units  
 The Brentwood, Baltimore (Md.) Housing Authority, MD 2-56, Urban Devel. Corp./Alvin Greenfield, Nelson-Sabes, AIA  
 202 units  
 Chatham Garden Apartments, Howard County, Md., Robt. Bowman Masonry Co., Bucher-Meyers, AIA  
 204 units  
 High Rise Apartment Building No. 1, Silver Spring, Maryland, Rossmore Leisure World, Anthony Campitelli, AIA  
 205 units  
 Harford Sq. Townhouses/Excav., Harford Co., Md., Cameron & Reed, Atty's., Urban Systems Devel. Corp./Div. Westinghouse  
 242 units  
 Saratoga Townhouses/Sec. I, Springfield, Virginia, Wills & Van Metre, Kohler-Daniels, AIA  
 250 units  
 Thomas Choice Garden Apartments, Montgomery Village, Maryland, Kettler Bros., Inc., Dewberry, Nealon & Davis, AIA  
 252 units  
 University Park Townhouses, Washington, D.C., Stanley Martin Communities, Inc., Stotler, Stag & Associates, AIA  
 324 units  
 Meadowbrook Townhouse Condominiums, Stoughton, Massachusetts, Aldrich Company, B. A. Berkus Environmental Design  
 324 units  
 The Chase Family Houses, Baltimore County, Maryland, Pulte Home Corporation  
 370 units  
 Wyfield Garden Apartments, Henrico County, Virginia, Page Construction/Div. U.S. Homes, Horowitz, Seigel, Beardley  
 456 units  
 Sequoyan Garden Apartments/Fiveplexes, Alexandria, Virginia, The Yeonas Co./Jack Wells Masonry, Barkley-Fierce, AIA  
 771 units  
 Housing Complex, Washington, D.C., Pennsylvania Avenue Development Corp., Hugh Newell Jacobsen, FAIA, Consultant  
 1500 units

## SCHOOLS / COLLEGES / UNIVERSITIES

Walter Johnson High School Auditorium Addition, Rockville, Maryland, Duane & Duane, AIA  
 \$ 287,000  
 Anne Arundel Community College Library Headquarters Building, Anne Arundel County, Maryland, Gaudreau, Inc., AIA  
 750,000  
 Ft. Hill High School Additions & Alterations/Phase I, Cumberland, Maryland, Bushey & Burrey, AIA  
 1,300,000  
 Dunn-Loring Elementary School, Fairfax County, Virginia, Fry & Welch, AIA  
 2,000,000  
 University of Maryland Industrial Education Building, College Park, Maryland, Ted Englehardt/Wm. C. Perna, AIA  
 2,000,000  
 Prince George's County Commun. College Student Serv. Bldg., Largo, Md., Vosbeck, Vosbeck, Kendrick & Redding, AIA  
 4,300,000  
 West Elementary School, Washington, D.C., Fry & Welch, AIA  
 Coppin State College Office-Classroom Building, Baltimore, Maryland, Cochran, Stephenson & Donkervoet, AIA  
 5,400,000  
 Towson State College Educational-Psychology Complex, Towson, Md., Fryer Assoc./Segreti, Stillwell, Hassellman, AIA  
 6,000,000  
 Gallaudet College Model Secondary School for the Deaf/Phase II, Washington, D.C., Hudgins, Thompson & Ball, AIA  
 8,200,000  
 Washington Technical Institute Site Work/Phase 1B/Task II, Washington, D.C., Bryant & Bryant/Elleerbe, AIA  
 NFP

## CHURCHES

Andrews AFB Chapel, Camp Springs, Md., Sulton & Campbell, AIA  
 790,000  
 Tenth Street Baptist Church, Washington, D.C., Rev. J. Thomas Jennings, Sulton & Campbell, AIA  
 1,100,000  
**HOSPITALS / NURSING FACILITIES / LABORATORIES**  
 Centerville Hospital, Centerville, Virginia, P. L. Booze, Inc., Sheridan, Behm & Eustice, AIA  
 220,000  
 Eastern State Psychiatric Hospital, Knoxville, Tennessee, Lindsey & Maples, Architects  
 545,000  
 Aero Medical Staging Facility, Andrews AFB, Camp Springs, Md., The Perkins & Will Partnership, AIA  
 1,500,000  
 Univ. of Tenn. Nursing School, Knoxville, Weeks Allan Ambrose/Lindsey & Maples/McCarthy Bullock Church Holsaple, AIA  
 2,000,000  
 Composite Med. Fac. Addn./Alter., Malcolm Grow Hosp., Andrews AFB, Camp Springs, Md., Perkins & Will Partnership, AIA  
 15,000,000  
 Mt. Vernon Medical Center, Fairfax, Virginia, James A. Cassidy Company, Elleerbe Architects  
 NFP



# MAY WE ASSIST YOU AND YOUR CLIENTS DURING THE NEXT SIX MONTHS?

## GOVERNMENTS—FEDERAL / STATE / LOCAL

Fairfax County Probation Home for Girls, Centerville, Virginia, <i>Davis &amp; Smith, AIA</i>	\$ 200,000
Woodrow Wilson Branch Library Addition & Alterations, Falls Church, Virginia, <i>M-2 Associates, Architects &amp; Planners</i>	260,000
Fairfax County Animal Shelter, Centerville, Virginia, <i>Salditt, Lipp, Helbing &amp; Associates, AIA</i>	280,000
Summit Hall Pk. Recreation Storage Facility, City of Gaithersburg, Maryland, <i>Dewberry, Nealon &amp; Davis, AIA</i>	300,000
U.S. Government Printing Office/Air Conditioning-Related Services, Washington, D.C., <i>Spradlin Constr., Leo A. Daly Co., AIA</i>	300,000
Montgomery County Courthouse Renovations, Rockville, Maryland, <i>Robert S. Dame, Architect</i>	460,000
Montgomery County Animal Shelter, Rockville, Maryland, <i>Bagley Soule Lee, AIA</i>	460,000
Operations Center for Dept. of Transportation, Arlington, Virginia, <i>John Fitzsimmons, AIA</i>	500,000
Mason District Governmental Center, Annandale, Virginia, <i>Dickey &amp; Dickey, AIA</i>	500,000
Seabrook Station Post Office, Lanham, Maryland, United States Postal Service, <i>Bryant &amp; Bryant, AIA</i>	500,000
Montgomery County Drug Rehabilitation Center, Rockville, Maryland, <i>Victor Smolen, AIA</i>	550,000
East Silver Spring (Maryland) Branch, Montgomery County Public Library, <i>Neil R. Greene, AIA</i>	660,000
Kenilworth Park Recreation Center/Phase II, Washington, D.C. <i>Vanegas &amp; Govantes, AIA</i>	700,000
Dale City Recreation Center, Dale City, Virginia, <i>Enrique Govantes, AIA</i>	800,000
U.S. Post Offices, Owings Mill & Reisterstown, Maryland, <i>Jewell, Downing, AIA</i>	1,000,000
Springfield Fire Station No. 27 & Governmental Center, Springfield, Virginia, <i>Mintz &amp; Easter, AIA</i>	1,150,000
U.S. Army Reserve Centers & Maintenance Buildings, Raleigh & Wilson, North Carolina, <i>Gantt/Huberman &amp; Associates, AIA</i>	1,260,000
U.S. Post Office/Vehicle Maintenance Facility, Prince George's County, Maryland, <i>McGaughan &amp; Johnson, AIA</i>	1,500,000
Sewage Treatment Plant, City of Lexington, Virginia, Corson & Gruman Company, <i>Wiley &amp; Wilson, Engineers</i>	1,500,000
GSA Building 213 Alterations, Washington, D.C., <i>McGaughy, Marshall &amp; McMillen, AIA</i>	3,000,000
U.S. Treasury Alterations, Washington, D.C., <i>Shefferman &amp; Bigelson, Engineers/Orofino, Kilsheimer &amp; Ellenbogen, AIA</i>	3,500,000
Mansfield Municipal Building, Mansfield, Ohio, <i>Bricker-Alexander-Graber, AIA</i>	4,000,000
City-County Bldg., Knoxville, Tenn., <i>City-County Assoc. Architects/Lindsey &amp; Maples/McCarty Bullock Church Holsaple</i>	19,000,000
Correctional Detention Facility, Washington, D.C., <i>Thalheimer &amp; Weitz/McDonald &amp; Williams/Brown &amp; Wright, AIA</i>	27,000,000
South Portal Federal Office Bldg., Washington, D.C. Fireman's Fund American Insur. Co., <i>Marcel Breur/Nolan-Swinburne</i>	NFP
Montgomery County Police Station Renovations, Rockville, Maryland, <i>Daniel R. Hanson, AIA</i>	NFP

## ARMED FORCES

Addition to Security Building, Andrews AFB, Camp Springs, Maryland, <i>Strang, Childers &amp; Downham, AIA</i>	50,000
U.S. Marines 96 Woman BEQ, Quantico, Virginia, <i>Neil R. Greene, AIA</i>	667,000
U.S. Army 40 EM Barracks/Mess (2), Camps A. P. Hill/Pickett, Virginia, <i>Bryant &amp; Bryant, AIA</i>	720,000
Improvements to Family Housing, 427 Units, Ft. Belvoir, Virginia, <i>Mayne, Oseroff &amp; Van Besien, AIA</i>	3,000,000
Miscellaneous Rehabilitation Projects, Ft. Detrick, Maryland, Dept. of the Army, <i>Wills &amp; Saunders, General Contractors</i>	NFP
Consolidated Arms Storage Building, Site Adaptation for Washington, D.C. Metropolitan Area, <i>Chapman &amp; Miller, AIA</i>	NFP
USN Alterations to Hanger 111/Flight Div., Patuxent River, Md., Chapman Devel. Co., Inc., <i>Lorenzi, Dodds &amp; Gunnill, AIA</i>	NFP

## MISCELLANEOUS—COMMERCIAL / INDUSTRIAL / INSTITUTIONAL

Nursery School Additions/Renovations, Washington, D.C., James E. Nuttal, <i>Robert J. Nash, AIA</i>	50,000
Roth's Tyson Five Theaters, Tyson's Corner, Virginia, <i>Donald Hogan Misner, AIA</i>	250,000
United Memorial National Bank, Montgomery, Alabama, <i>Major L. Holland, AIA</i>	375,000
Raehn Office Building 2, McLean, Virginia, Richland Development Corporation, <i>Donald Hogan Misner, AIA</i>	430,000
Beltway Plaza 6-Plex Theater, College Park, Md., Beltway Plaza Developers/Sidney Brown, <i>Kahn Associates, AIA</i>	485,000
N-2 Office Building, Reston, Virginia, Gulf-Reston, Inc., <i>Jansons Roberts Taylor, AIA</i>	1,320,000
Sea Colony Phase III Club House, Bethany Beach, Delaware, Sea Colony, Inc./Carl M. Freeman, <i>Reiff-Fellman, AIA</i>	1,500,000
2151 K St., N.W. High Rise Office Bldg., Washington, D.C., Washington Circle Assoc./Gerald Epstein, <i>Holle &amp; Graff, AIA</i>	2,200,000
Scott Paper Company Operations Bldg/Phase I Addition, Dover, Del., Consolidated Engineering Co., <i>Boyd C. Wagner, AIA</i>	2,250,000
General Electric Lamp Plant, Winchester, Virginia, M.B. Kahn Construction Co., Inc., <i>Hoag, Wismer &amp; Anderson, AIA</i>	10,000,000
Pentagon City Complex (Offices, Condos, Motel), Arlington, Va., Luria Bros., <i>Harvey L. Gordon, AIA</i>	14,000,000
Area 3B Charles Center/Garage, Retail Complex, Offices, Apts., Balto., Md., Mullan Enterprises, <i>Conklin &amp; Rossant, AIA</i>	20,000,000
Biscayne Dodge, Miami, Florida, H.L. Linton Construction Co., <i>Chrysler Realty Corporation Design &amp; Construction</i>	NFP
IDB Building/Change Orders, Washington, D.C., InterAmerican Development Bank, <i>The Mills-Petticord Partnership, AIA</i>	NFP
Inn & Conference Center/Alternates, Reston, Virginia, Gulf-Reston, Inc., <i>LBC &amp; W, Architects</i>	NFP
Ferris Building, Washington, D.C., InterAmerican Development Bank, <i>Mills-Petticord &amp; Mills, AIA</i>	NFP
Cost Study for Tile Council of America, Inc., <i>Jess McIlvain, AIA, Architectural Director</i>	NFP
Capitol Yacht Club Piers/ Metro Replacement, Washington, D.C., <i>Lorenzi, Dodds &amp; Gunnill</i>	NFP

NFP—Not For Publication

Dollar amounts represent budget, bid, or our estimate.

# \$452,470,000

**FEASIBILITY THROUGH CONTRACT DOCUMENT ESTIMATES ■ REPLACEMENT COSTS  
CONSTRUCTION MANAGEMENT ■ CPM/PERT ■ ARBITRATION ■ VALUE ANALYSIS  
8555 Connecticut Avenue ■ Washington, D.C. 20015 ■ (301) 652-2622 ■ Cable SHARFEST  
Members American Assn. of Cost Engineers ■ National Assn. of Construction Cost Consultants  
Branch Office 905 Mozart Street ■ Tell City, Indiana 47586 ■ (812) 547-7063 since 1920**



*Classic design . . . performance engineering.*

## **With Welsbach fixtures, both come shining through.**

At last! Favorable photometric performance in a street light fixture with classic, elegant lines. This Welsbach performance-engineered fixture gives .5 FC\* minimum with 150 W sodium vapor bulb at 85 ft. spacing, or with 175 W mercury vapor at 60 ft. spacing. Mounting height is 12 ft.

Optional separate light source in the chimney glows softly while the main light source is recessed from view. It's the ideal fixture choice where efficient light and architectural harmony are *both* needed.

Welsbach. Authentic 19th Century designs engineered with late 20th Century photometrics and light sources. You enjoy the best of both worlds when you install Welsbach.

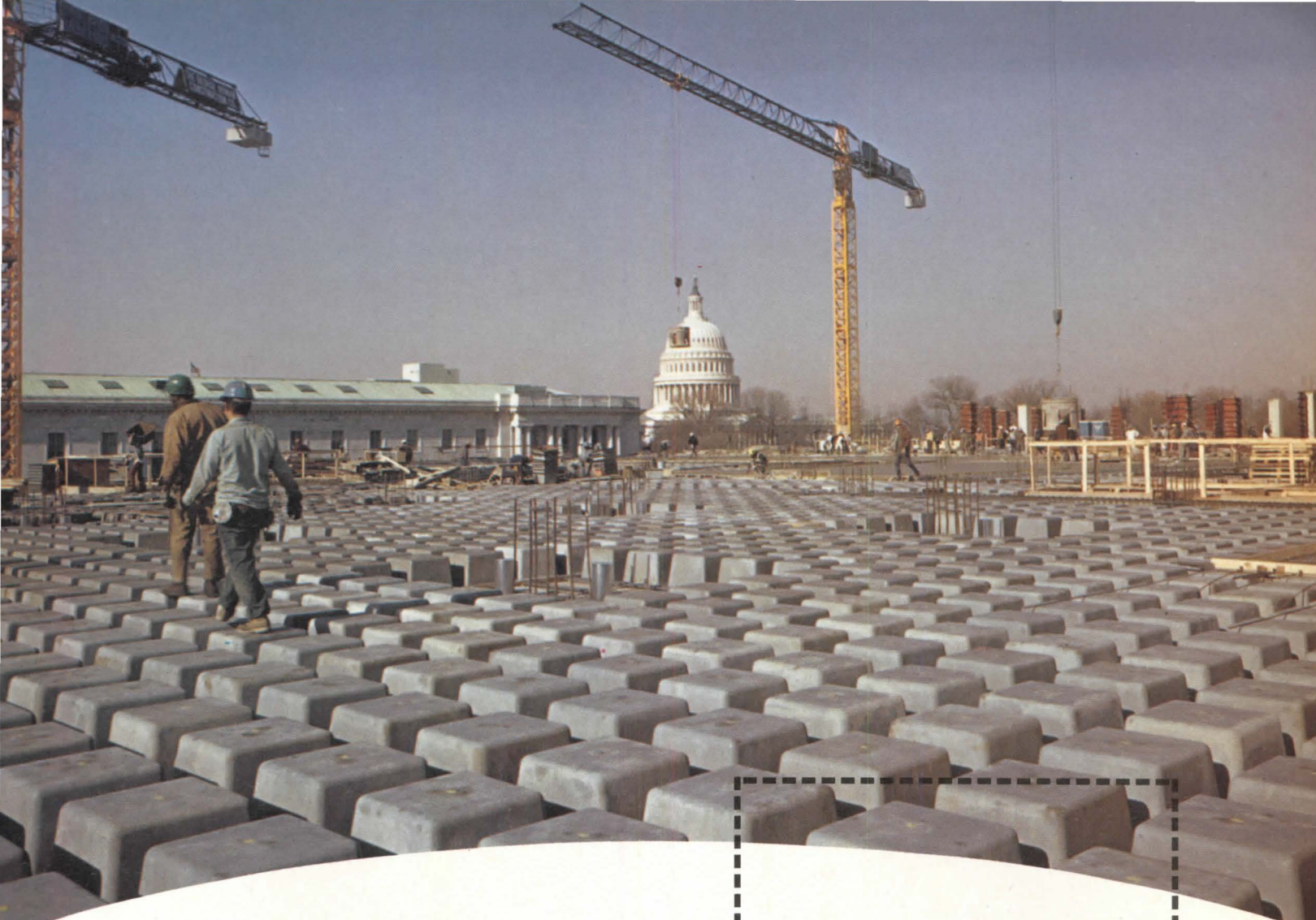


**Welsbach Lighting  
Products Company, Inc.**  
3001 E. Madison Street  
Baltimore, Md. 21205  
(301) 276-4600

*\*ITL Test data on request.*

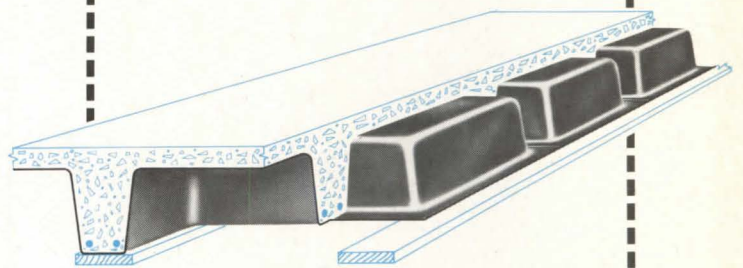






# Save time with Ceco forming services

The James Madison Memorial Library of Congress, is still another Washington building using Ceco concrete forming services. With Ceco services, you get simplicity, economy, speed and reliability. Our crews of formwork specialists erect and remove forms of steel or fiberglass. We do this floor by floor and on a firm lump-sum contract basis. Ceco's equipment, materials, crews, skilled foremen and superintendents are available nationwide. For more facts, please see Sweet's files, consult our local Ceco office, or write.



*Typical two-way joist floor system*

James Madison Memorial Building  
Library of Congress, Washington, D. C.  
George Hyman Construction Co., *Contractor*  
Roscoe DeWitt, A. J. Tatum,  
Alfred Easton Poor, Albert Homer Swanke,  
Jesse M. Shelton, A. P. Almond, *Associate Architects*  
Severud, Perrone, Sturm, Conlin, Bandel,  
*Consulting Engineers Superstructure*



The Ceco Corporation • General Offices  
5601 West 26th Street • Chicago, Illinois 60650



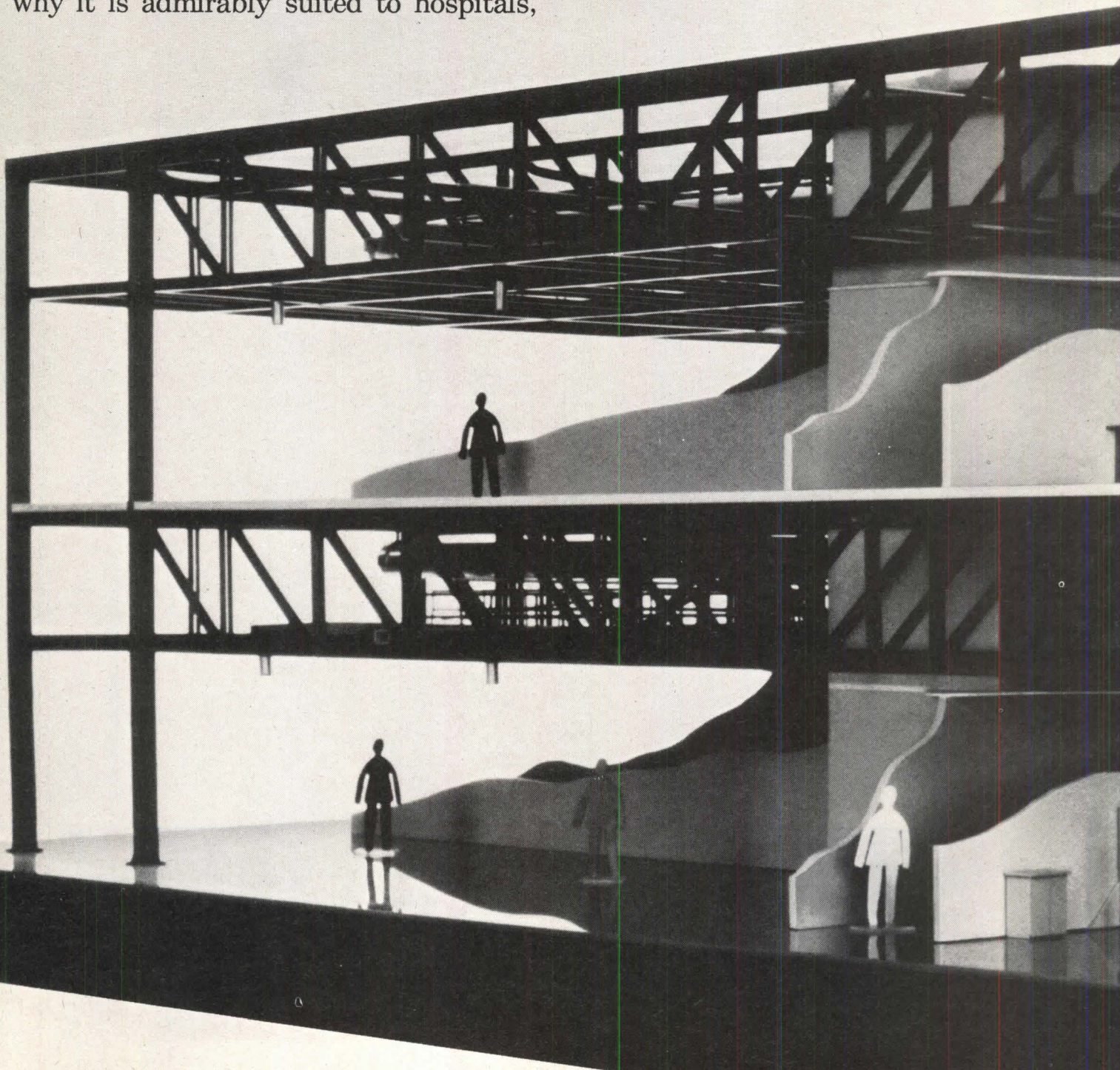
# Rx: INTERSTITIAL SPACE DESIGN—

Thirty-five hospitals and clinics are using a revolutionary new structural framing system. It's called Interstitial Space Design and it can be most effective in reducing maintenance and operating costs.

Interstitial Space Design achieves an absolute minimum of routine servicing interference with normal hospital functions. It is also a highly flexible system, allowing for functional changes. This is why it is admirably suited to hospitals,

clinics and other medical facilities.

As the model shows, the new system is essentially a series of structural "sandwiches" of mechanical floors between the patient floors. Within these intermediate spaces (service levels), equipment and all mechanical, electrical and communication lines are housed and serviced. Distribution and collection systems are also accommodated between floors.





# THINK OF IT AS "SANDWICHES" OF STEEL.

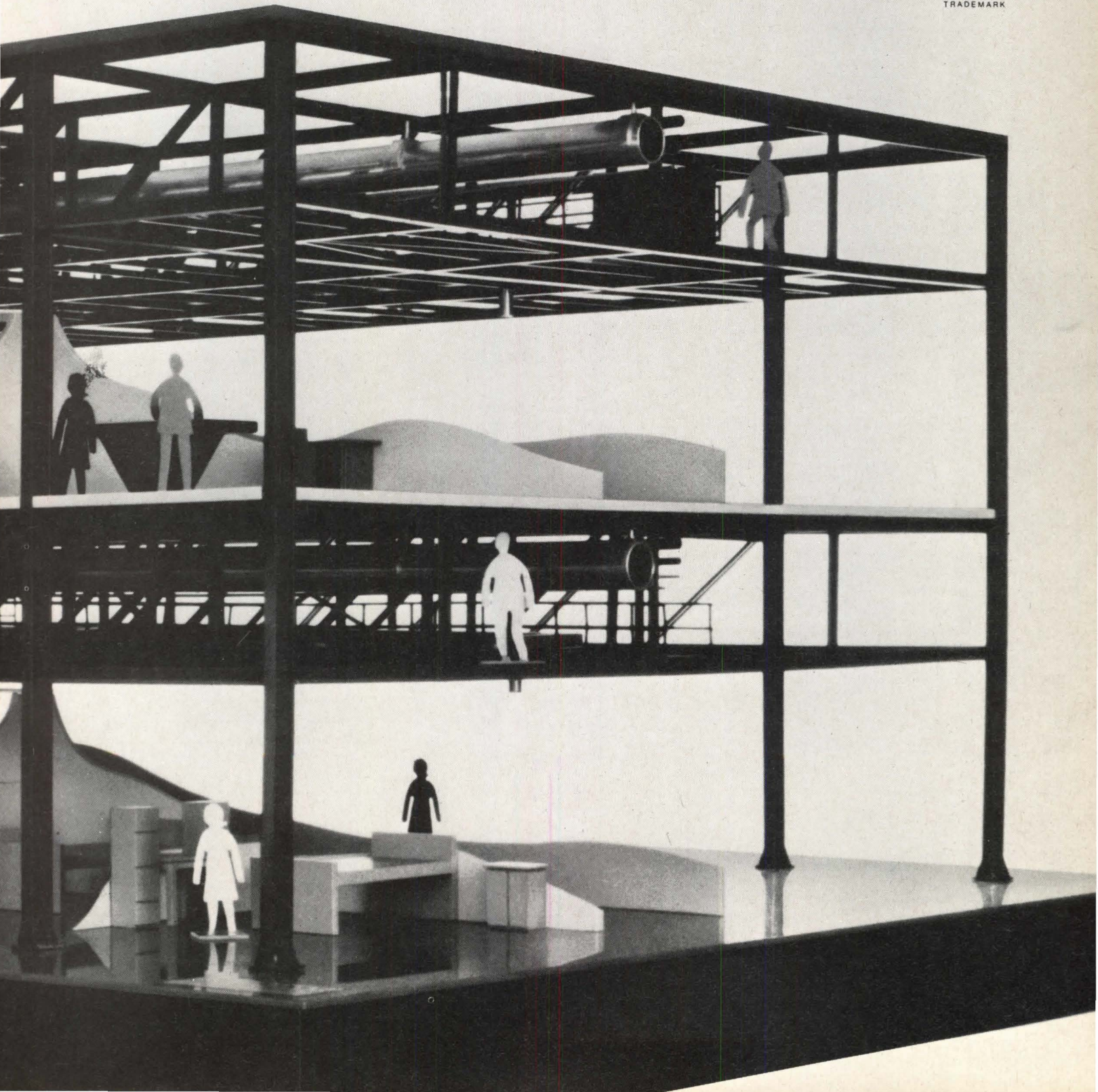
The Interstitial "sandwich" levels can, of course, vary in height—depending on the specific functional needs of the floors they service. They can be constructed to a height in which men can work efficiently. Catwalks can provide access to equipment rooms and platforms located within the Interstitial service spaces.

Find out more about this developing concept. Contact a USS Construction Marketing Representative through your nearest USS sales office or write: United States Steel, 600 Grant Street, Pittsburgh, Pa. 15230.

United States Steel



TRADEMARK





Only Haws has **Blend**  
 precast stone drinking  
 fountains—in five  
 colors to match your  
 ideas. Ask your  
 Haws representative  
 to show you a  
 color sample kit  
 and specifications  
 today, or write:  
 Haws Drinking  
 Faucet Company,  
 1441 Fourth Street,  
 Berkeley, California  
 94710

**one  
 with  
 your  
 next  
 idea**

Model 2000 at right, Models 1040 below,  
 available in all five colors and in polished  
 (standard), light sandblast or exposed aggregate  
 finish. Ask about Haws remote chillers for  
 hidden cold-water source.



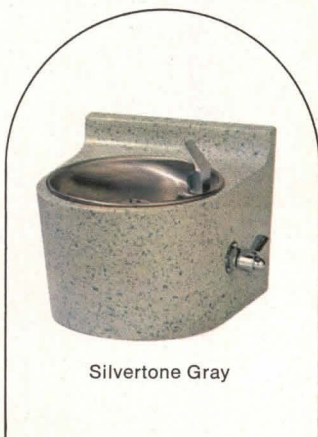
Laurel Green



drinking fountains and faucets, emergency decontamination  
 units and water coolers



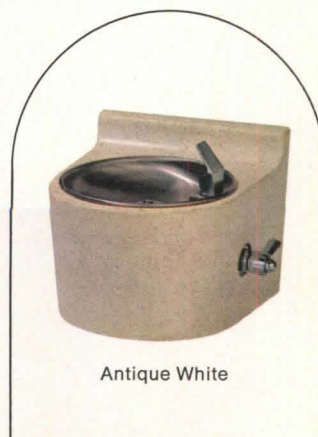
Smoke Onyx



Silvertone Gray



Terra Cotta Beige



Antique White



# AIA JOURNAL

**There is such a thing as running a convention theme into the ground. Yet "A Humane Architecture" is a concept that has significance well beyond a single convention. Therefore it shall be trotted out again to introduce this rather diverse issue.**

**We begin with an essay on windows that is most humane in spirit and follow with a biting visual commentary by an artist who believes that too much contemporary architecture elevates technology unduly.**

**Then, as the cover indicates, we consider the computer, whose technology, it should be emphasized, is a tool that can be used in service of humaneness as well as efficiency in design. The word efficiency brings us to the next subject, value engineering, another design tool that is little understood and sometimes feared.**

**Mention of one more article and then enough of summary. Humaneness can be societal as well as individual, and therefore we present an accounting of a crucial but presently faltering attempt by the profession to pay a particular debt to society: AIA's minority/disadvantaged scholarships. *D.C.***



# Windows As Places for Occasions and Childhood Eyes to the World

Jorg-Dietram Ostrowski



Rustling leaves, serenading birds and lapping water are but the sparkles of nature's beauty. Yet their eloquence is powerful. The touch of a hand, the tear in the eye, the tone of a voice all radiate powerful understanding of human nature. They too are small things. So also in architecture, it is the detail that touches or hurts the joys or pains of everyday living.

In the following collage of actual events, I would like to repaint some pictures of life in the window, in which the inhabitants become the actors, the window the stage and the street life the audience.

Windows, like all architectural details, are no joke to these actors. They don't come to life in our schedules or specs. The novels of life itself should inspire our designs. They abound wherever people are to be found.

One of the most concentrated forums for life from the window on this continent is Boston's Italian community, the North End. Celebrations are the greatest pageants of human activities and their parades seduce all inhabitants to show their faces out-of-doors. As marchers file past on the street, in-front, the facade of the building opposite is freckled with eager watchers. And straight above us, as the houses meet the sky, each narrow window reveals protruding heads, like *fungi on the trunk* of a tree, sometimes two or three at a window. They pour confetti onto the street in their enthusiasm, shout invitations for supper to their friends and push each other in their eagerness to see. For them, the street



**Mr. Ostrowski** is in the Master of Architecture A.S. program at M.I.T., and is studying urban waterfronts, children in the environment and architectural education.





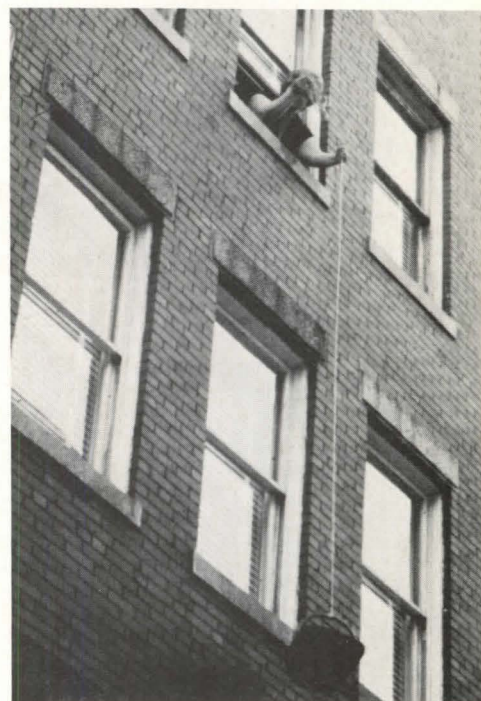
## Boston's North End: 'a concentrated forum for life from the window.'



is a wonderful stage, and the window their own private ringside seat. With windows filled with vocal watchers, the whole street has become a giant amphitheater. From the window, your view is clear and unrestricted. You are freed from the human undergrowth of sidewalk masses, and you sip your drink and listen to your music.

A few blocks away, in a quiet narrow street, a little girl is jumpingly engaged in the challenge of getting her unwanted sweater to the first story window where mother awaits a closer aim. The little girl was all wrapped up in the fun of throwing her sweater into the air and catching it as it failed to negotiate the window. Passers-by began to stop and watch her repeated attempts. Would she succeed this time? So one of them showed her how easy it all could be, and it was all over. What had started out as a quick and convenient way of getting her sweater into the house (without even opening a door or climbing the stairs) had evolved into an occasion for play. So she rejoined her friends in the street, secure in the feeling that mother's eyes and ears were always at hand. Yes, windows as eyes of the neighborhood, and a convenient receptacle for disposable articles.

A few streets farther, at her familiar perch, is this little old lady who really inhabits her window. She's there so often, that she must own the street below her by now. I see her, sitting there, warmed in the sun, engaged by her paper. Her elbows resting in the pillow on the sill, her eyes glancing for news below her. She is always there, and probably always was, and probably always will be. In the accelerating years of old age, those sounds of youth as children play, and the company of gossip as friends stop, must reincarnate memories of her past. This window brings to her a piece of the normal world outside, and injects her into the midst of its activity. She is out there in the street, yet comfortable in her favorite chair. How many elderly are lucky enough to see, hear or feel connected with, in any way, the sounds and action of everyday life beyond their own confines? For our lady, the window is her constant companion.



Another place, another time. This woman on the third floor must know it is that time once again. So, she confidently opens her window and, with an expectant look, checks out the action of the sidewalk below. Yes, there comes the mailman, and so, with a gust of delight, she lets down the empty brown basket at the end of the string, all the way down to the street. It sways there in happy anticipation of the mailman. He greets the little brown basket with a few paper envelopes and continues on his way. The basket quickly rises into the sky and is swallowed eagerly by an open window and craving hands. A door to the news and a messenger to those dear ones. Such can be life.

These little occasions, generic more in Europe than here, demonstrate the beauty of life that has been framed by the window. Whether windows offer a balcony seat for the parade, or a convenient shortcut to upstairs, or places to soak up sun, read a newspaper or conduct local gossip, they accomplish or enhance the chores and pleasures of everyday occasions. They enter the meaningfulness of life if they and their streets are designed with the spirit of life in mind. What happened to suburbia?

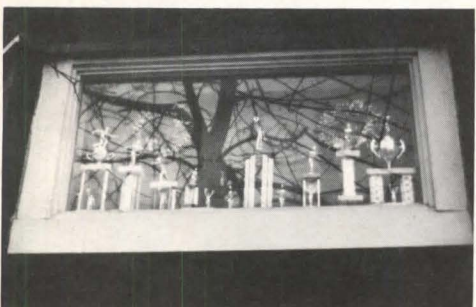
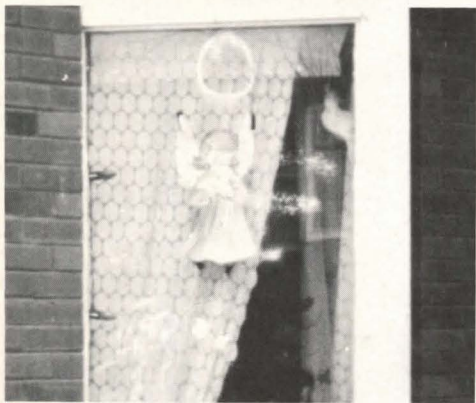




## Windows that speak and teach and become children's special places.

Alexander Park Housing Project in Toronto is also a showcase for window life. Again, it must be stressed, the reason that windows are successful here is because active pedestrian street life has been established in the community.

Some windows were used for personal or familial advertisements: the selling of household objects, home-baked cakes for sale, the announcement of sewing classes "for mother." Another sign elsewhere read, "Mary and Jo live here" in beautiful



ful idiosyncratic medieval script. And at Christmas, all the small bay windows were filled with such a diversity of decoration that it was fascinating to stroll down the pathway to windowshop each special effort. Each window became an expression of the home's personality and pride of being "them." Neighbors and strangers couldn't ignore them. They spoke visual words and ideas to those who passed by. Windows as mouths, with signs of speech.

And there were other windows, too. Some of the bedrooms on the second floor had special sealed-in windows, smaller in size and purpose than normal room windows. They were filled with the treasures and trophies of some kid. A beautiful display window, right in one's bedroom and perfect for making a statement about yourself to the world outside.

As complete strangers and without knowing anything about the family, we knew that a very active boy lived in that upper bedroom. He liked sports, and he excelled in many. So spoke the orchestra of his 11 trophies in that window. An eloquent synopsis of that person. The vocabulary of a window. Windows of modest dimension and location, but



powerful in their meaning. Just by looking at those windows, your mind could begin to sketch the personality of the people behind them. They introduce visitors to the home, and talk about the interests and makeup of the family inside.

Another major event at the window is growing plants. Windows become places and incubators of real live growth. They are the simplest greenhouses. Growth is of paramount importance to people. As with humans and animals, plants, too, are loved and cared for. They bring joy into the home, sometimes sadness. But most beautiful of all, they actually grow. Yes, they actually live. They, too, are alive, and can thus share, in their own way, our own lives as well. Our affection for plants is one of the most primeval instincts of mankind. That is why they, too, must have their place in the house. Windows are the closest place to the outdoors: the sun, wind, rain, light, darkness and other living plants, each of which provides our flowers with happy companionship. Windows as places of growth and shared lives.





How often have we seen young children pressing their hands and faces to the window? To children on the other side, flat palms and fingers seem funny when they should have looked round. And when there is no one else but oneself to see, it's nice to be outside, but not really outside. How close but far away. How soft the face, how cold the window. A frame for self-expression, a place of discovery of oneself.

Everything is there—the trees, the people, the cars, the sun, dogs, other children, the milkman and my friends. This hole in the wall is an invisible door to the beyond. It puts my spirit out there, it invites me to join the outdoors, to embrace the beyond. A window beckoning to go. The door to the beyond, but a door through which I cannot quite go.

And my good friend Jack Frost. He paints the windows when I'm not watching. He does so many different forms, sizes and shapes. It's like visible music. Yet I can see right through them, right to the other side and beyond. And when I

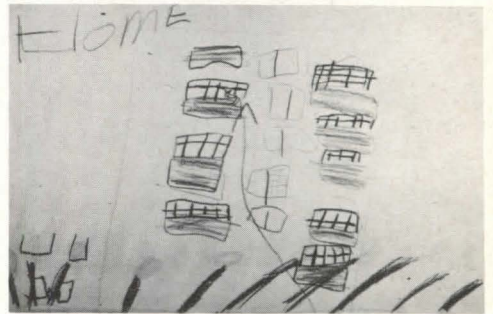
touch it, it's so cold. And it feels soft and crunchy. And when I press my hand onto the pane, the frost goes away, yet I've left a hand there, even though I've taken my own away. Why is that? And when my finger slides along the glass over the frost, it leaves a trail, like finger painting with invisible paint. The frost has gone.

And look what happens when I blow my breath against it. It, too, goes away. And when I give it a kiss, oh my! And on it goes. First discovery, then experimenting, then puzzlement, then questioning, then trying to solve the riddle. Maybe some help is needed from mother or father, and alas, we have learned again. Jack Frost in the window pane. A theater for learning. A peaceful stage with silent actors, busy audience and querying students. A window mime.

And there are times when the window space becomes a child's own edicule. The space by the windows fits him like a raincoat. It is his world and he can engage himself between the flowers and the pots and the dreams of what is beyond. To the baby, the window is an introduction to the world beyond his home. It shows him the world of cars, other people, dogs and cats, and so forth—things in which he'll soon immerse.

If you ask a child to draw his "home," what will he draw? If he lives in a high-rise, he'll draw the building. If he lives in a lowrise, he'll draw his house. But the apartment child has trouble in showing which one of the many windows belongs to his particular family. So, tools are invented to accomplish this task. To describe the location, he may use a literary caption, or he may use an arrow, or he may put his cat in the window.

Some poet somewhere once said, "Eyes are the windows to the soul," and by the same token, windows are the eyes to the soul of the house. And windows are a source of effervescence in children's drawings. They show so many things. They all have curtains, curtains like eyelids; the eyelids of the house which open in the morning and close at bedtime. Even the curtains of the living room are drawn closed, even though no one undresses or



sleeps behind them. And we can all open or close curtains, and that is very important, even for little people. We all participate in the change and growth of our homes, we dress it for the day and put it to sleep at night. Often, in children's drawings of home, we find powerful feelings that are conveyed in the overall composition of windows and doors. The windows as eyes, and the door as nose or mouth. The roofs are hats. The happy or sad feelings are unmistakably clear. The house is a face, and as a face, it, too, can express different moods. Expressions of our windows and eyes to our soul.

But children speak graphically much more about the window. They show flowers or embroidery, they show the sofa in the living room, the table in the kitchen, or daddy just simply standing there. And sometimes, the windows aren't large enough. So they explode the window and remove the wall, giving us an X-ray section. Now we have the largest window of all. Now we can see everything inside. We can see Julie Anne's bedroom, daddy's room, the bathroom, "me watching TV" and so on. There are many stories. Windows in children's drawings are very verbal about themselves and the inside of the homes.

These are some of the ways that windows relate to childhood. They distort faces and fingers, they connect home to the beyond, and they give birth and death to Jack Frost. They can become the special places for children to call their "own." And seats for watching street hockey or receiving invitations to activity from below. Windows as the eyes of the home. Curtains as eyelids waking and sleeping in the personality of the house. Little scenes from the chapter of childhood. □



# Protest Against The Primacy of Technology Over Humanity

Nancy Wolf

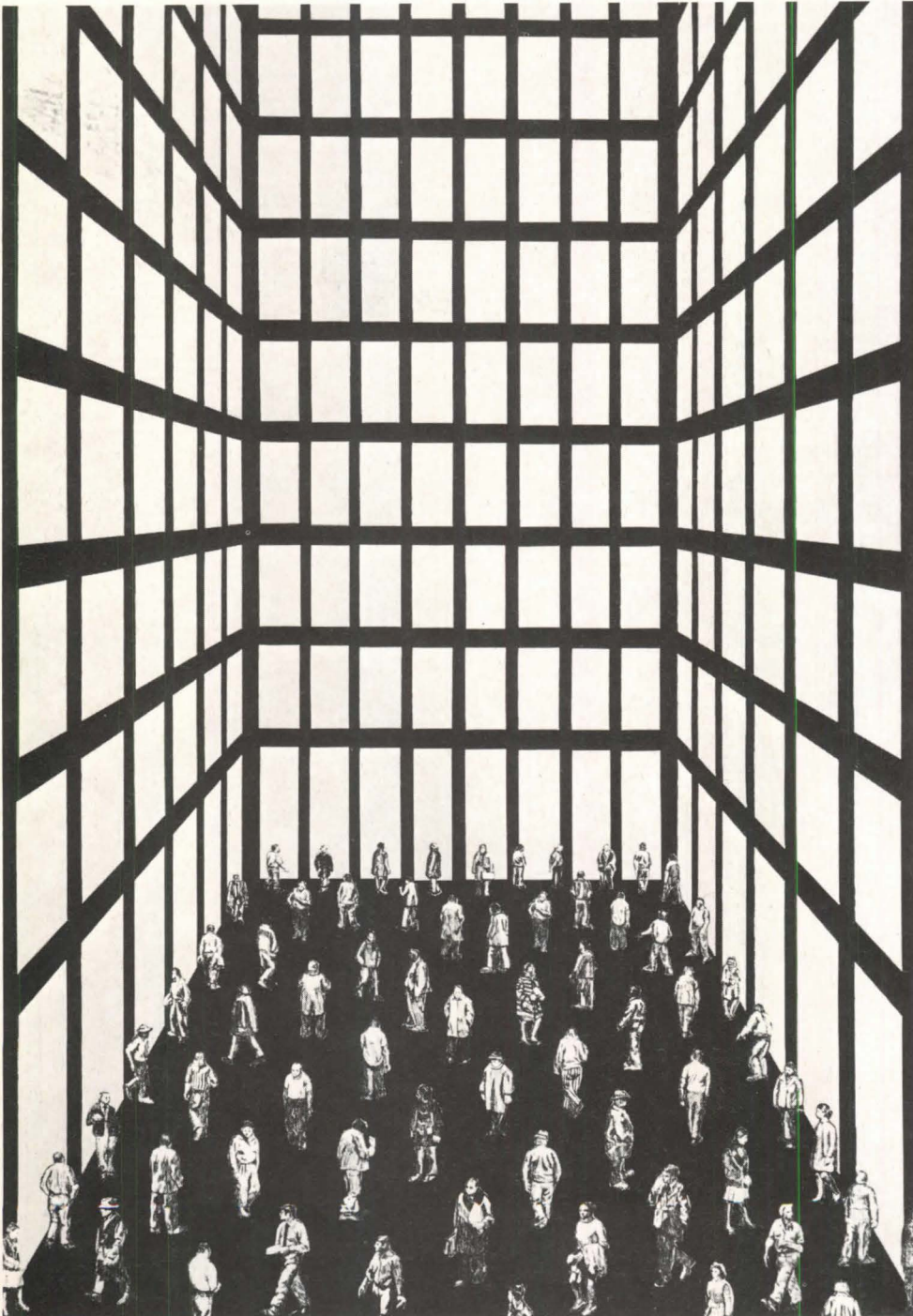
Modern architecture reflects one of our most visible, stunning and sophisticated technological achievements. New building materials and structural capabilities have made it possible for architects to execute elegant highrises of curtain walls and reflecting glass, vast monuments in precast cement, and buildings that seem to defy the rules of gravity.

In these drawings, prints and paintings, I try to explore the interaction between life and these new spaces. I am confronted by the changes and interruptions in the human scale caused by these new technologies. Often the architecture seems in contradiction to the people in whose name these grand designs are executed. The people who live and work in these buildings seem to come and go, molded to and by the spaces of their surroundings, forced into the pattern of behavior to fit the rules of the buildings they are in. In the past, the space has been defined by life—domestic, spiritual, political. In the present, I feel life is being redefined by technology.

Occasionally, I see small inroads made by people humanizing their spaces, but those who behave individualistically within these buildings are rare. I must search hard for them. In these standardized spaces, individuality becomes deviancy.

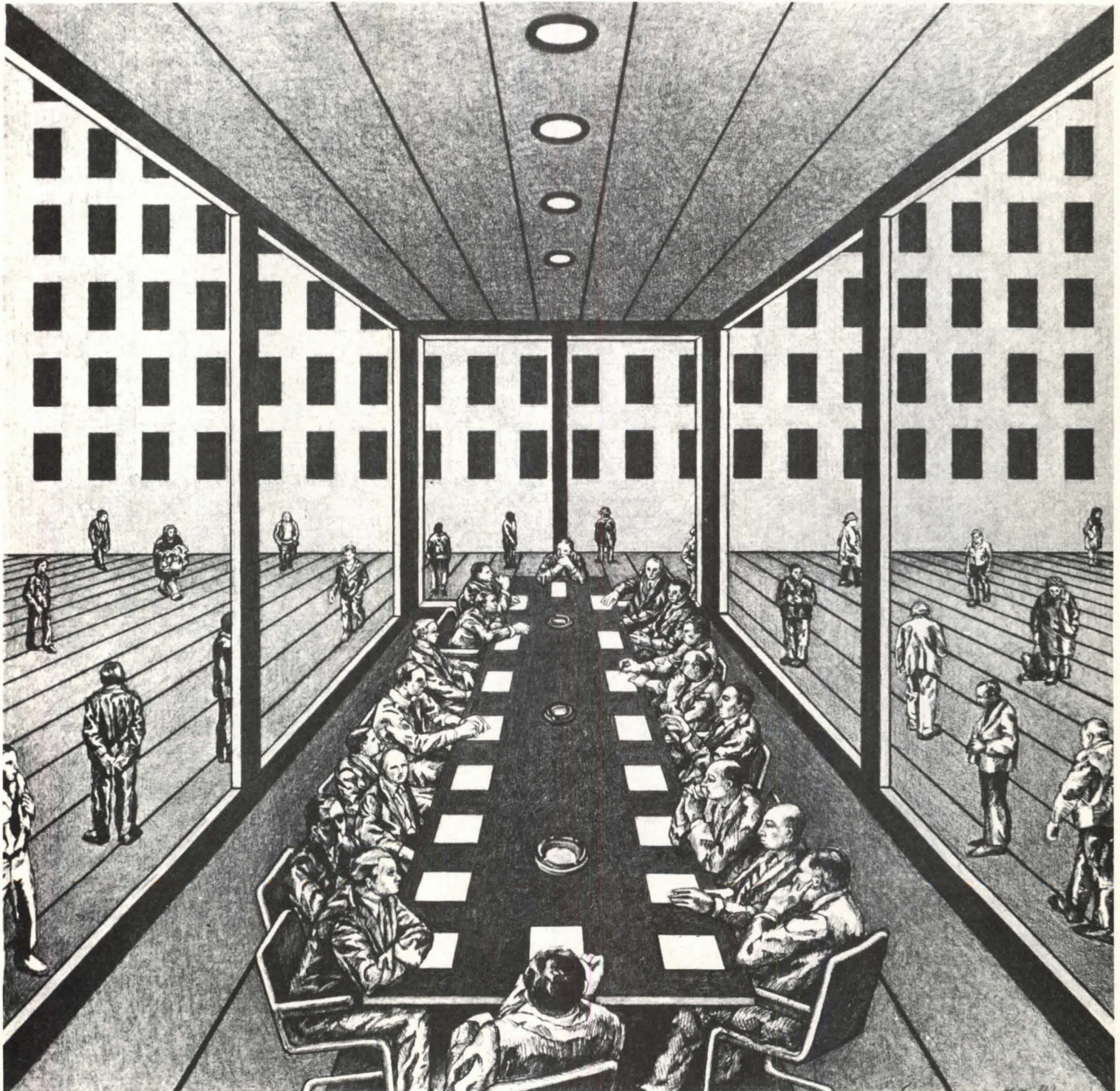
I, like those who build what I portray, am caught between the technologically elegant and functional forms I must admire and the people in them I depict. I have striven to give shape to an expression of the conflict between our technology and our life spaces. □

**Ms. Wolf**, a Washington, D.C., artist, recently exhibited these and other works in the AIA Gallery in a show entitled *Life Spaces*.



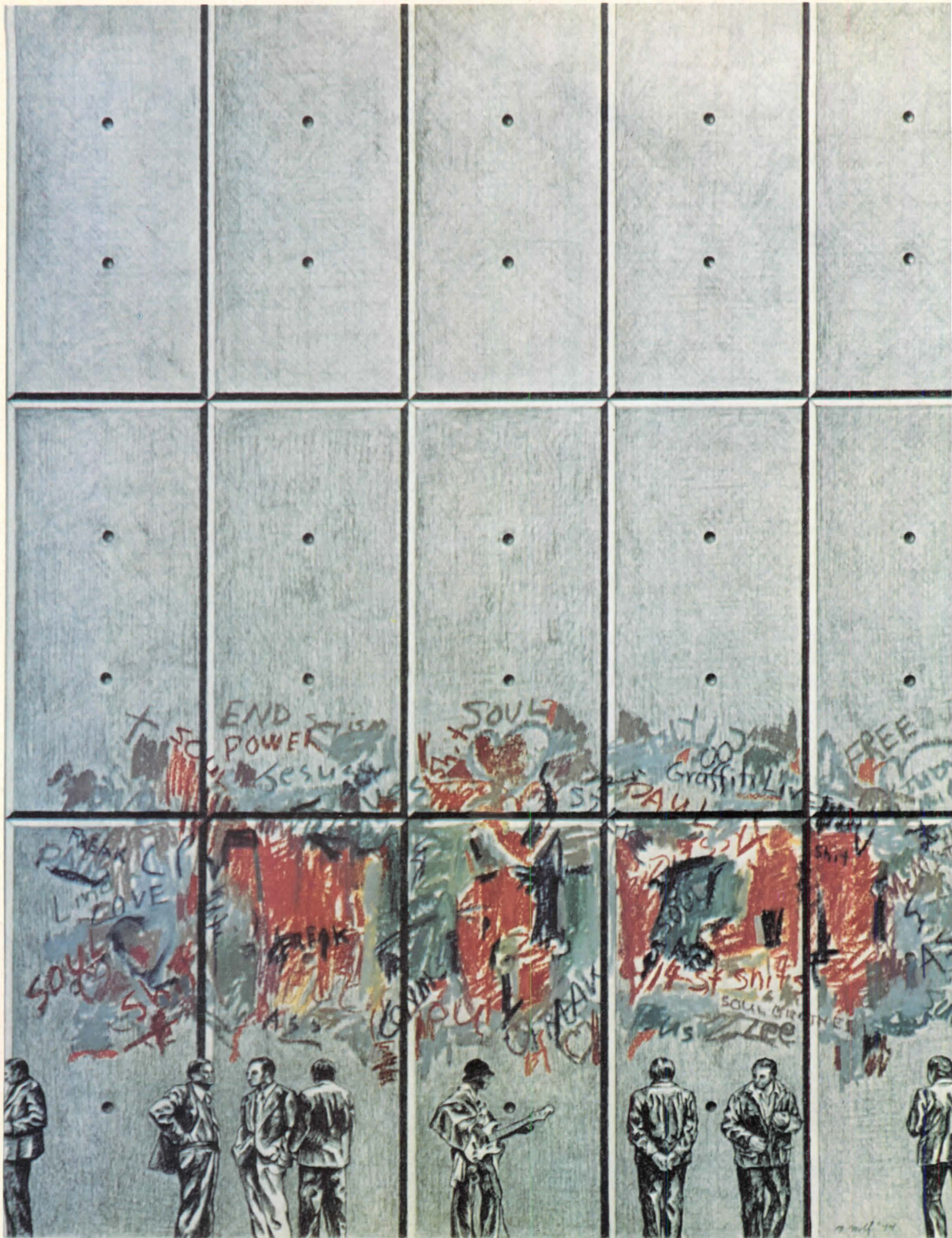
*Ultimate Unity No. 2*





*The Urban Planners*



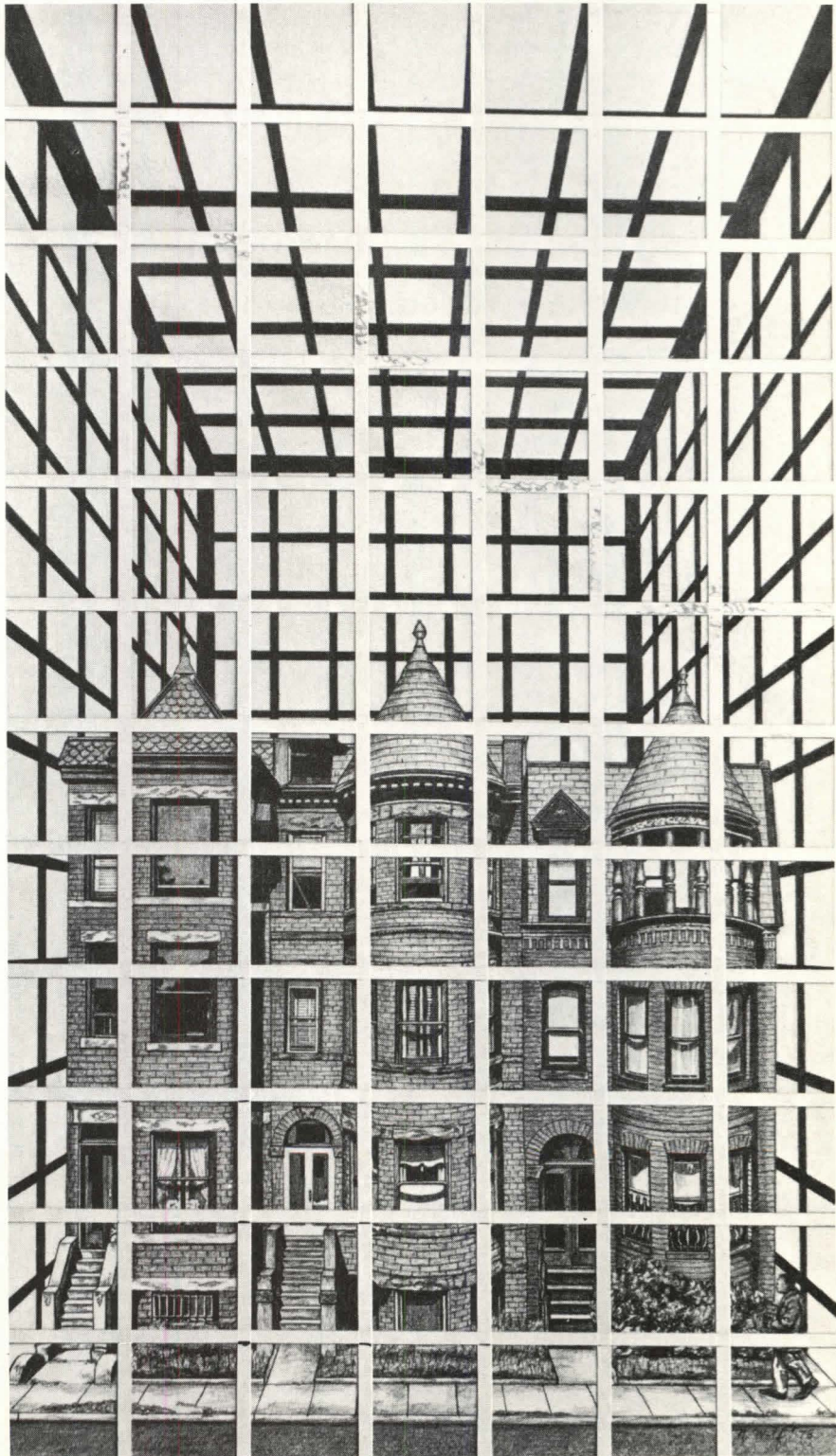


Grffiti





*Future Cities No. 5*



*Prisoner to a Grid*



# First Steps in Computer Use for Smaller Firms

David Lorenzini

Your partners have finally voted to approve your proposal to set up a data processing system within your office, but you're not too sure which of the dozen sales representatives you've talked to in the past few weeks really has the best system for you. Most of the sales pitches, you realize, are coming from systems people who are not fully cognizant of the architect's needs, especially those of a relatively small firm such as yours.

You found three alternatives were generally available—a service bureau, a self-contained system of your own and time sharing—with costs varying from a few hundred dollars per month to a few thousand.

A service bureau offers the advantage that you can try a program on a one-time basis for a fixed price of just a few hundred dollars. MASTERSPEC, the AIA-sponsored computer specification service, is automated by several agencies that operate in this manner. Many feasibility and engineering programs are available on this basis to use for specific applications without a monthly charge. This method allows you to take advantage of highly specialized or very complicated computer

**Mr. Lorenzini** is executive architect in charge of building and a director of Newport Collaborative, Inc., Newport Beach, Calif.

## Computer Basics: Hardware

Digital computers differ in size and capabilities, but they all consist of five basic hardware elements: *input, memory, control, arithmetic/logical* and *output*. Data enters the computer through an input device and is stored in the computer's memory until it is needed by the control unit in order to perform an operation. Once the arithmetic and logical operations have been performed, the computer conveys the information by means of an output device.

Input devices come in a variety of types and speeds. For any given computer the devices may be one or more of the following types: keyboard, card reader, paper tape reader, magnetic tape drive, mag-

netic disc drive and cathode ray tube coupled with a light pen. Nearly all computers can be equipped with a typewriter keyboard, which is used by the computer operator to communicate with the computer system. A combination cathode ray tube-keyboard may also be used.

Most computers can read data from a punched card. Data is entered into cards in the form of holes punched in certain combinations that represent coded characters. Card readers electronically sense and transmit the punched information to the computer's memory. Similarly, paper tape readers use a light beam to detect the holes in a strip of paper tape. Although it is somewhat cumbersome to handle, paper tape provides a fairly rapid means of input at a relatively low cost.

applications that have been established at considerable development cost by others. If you don't have an engineering staff to support, and if you haven't already hired, or don't intend to hire, a systems analyst to be your in-house "computer-nick," then you're really not yet ready for a self-contained installation. An in-house system can be very convenient, but since even a limited capacity computer starts leasing for about \$1,000 per month, you will probably want to wait to start out with as many applications as possible. Unfortunately, the software programs available for purely architectural applications are still rare. The time-sharing system, on the other hand, allows you to walk before you run. After the initial installation and set-up charges, which are nominal, you can relax, because it's not too hard to justify the fixed monthly charge of approximately \$150 plus storage and connect-time charges with even one good solid application program. And, to top it off, you'll probably have the most sophisticated, latest-generation computer at your command. This concept represents a low investment, minimum risk approach, and it is currently being used successfully by several under-50-man architectural firms employing no in-house engineers.

Let's assume you've been convinced that a time-sharing installation will fit

your operations and budget best, and, at the same time, let you ease into more and more applications as your time and finances allow. Also assume you've found a small corner in your crowded office, had the terminal installed and reviewed all the instructional materials. For your first application, just think of any operation that you now do manually, one that is tedious or perhaps even complicated. If you would like to unload this task and have more time to devote to other duties, then this is probably a perfect application for your terminal.

Remember, computers are not relegated to high-powered and super-sophisticated problems only. A computer is nothing more than an electronic calculator with the ability to remember instructions. You simply sit down at the terminal (which may consist of nothing more than a typewriter connected to a telephone in your office), sign on and perform your routine mathematical steps; you have just described what you want the computer to do for you. All you really need is a list of instructions, called a program, for the computer to follow. (It is important to note this distinction between a computer and a calculator—the computer has the ability to follow a set of preprogrammed instructions, and to make the necessary decisions associated with them.)

Before the program is even started,

Magnetic tape makes use of tape drives that work on a principle similar to a common tape recorder. Magnetization patterns have been developed to represent coded data. Magnetic tape handles data faster than punched cards or paper tape. Individual reels, removable from the tape drives, may contain vast amounts of data. On magnetic discs, data is stored by a technique that allows individual sections to be accessed directly. Discs, like tapes, can hold vast amounts of data and are usually removable from the disc drives. The use of a cathode ray tube coupled with a light pen provides rapid input, but is more complex and is usually used when input requirements are small.

Memory, as used here, is usually referred to as "main" or "primary" storage.



however, it is necessary to define the output, which is the final format of all the information the computer has been processing. For an architectural firm, this will either be a final document in itself or, more likely, represent results to be used in a report or on a drawing. The program is written in "code," according to a "language" which has been established to make it all come out in an easily understandable form. Of course, there are a lot of "little tricks," and a certain amount of internal data management that goes into the program, but this is really a part of the efficiency that the programmer is expected to build in.

Your program should not be expected to work perfectly at first, since there will be alternate situations and many refinements that you will want to include as a result of working with this procedure over a period of time. It is important to have one person act as programmer. After debugging and turning the program over to the persons who will use it, the programmer should be available for consultation and desired revisions or improvements. Many architects are being graduated from schools that offer the basics of computer programming, and many community colleges offer computer science as a part of their evening school. At any rate, it is not a very difficult task, and most time-sharing companies employ applica-

tions engineers to advise their clients.

Once you get your feet wet, ideas for new applications will probably arise faster than you can get them programmed and operational on the computer. All you really need, however, is just one money-making application to pay for the cost of the monthly lease, and you've justified the installation. One way to start would be to produce the payroll and job-costing report directly from time card information. Another application is to permanently store master specifications text for editing and hard copy output without any special programming.

How far you can go with a time-sharing system depends in a large part on how progressive your time-sharing service is. As the particular company with which you deal updates its computer hardware, it will usually offer added services and capabilities and, in effect, stay ahead of your needs. This will generally enable you to find more ways to put its computer to work. Concurrently, the attitude of the users within your firm will be changing. They will have had an opportunity to work with and to understand the abilities and limitations of computers and will be better able to direct the programmers in the development of new applications.

Once you find your average monthly bill approaching the \$1,200 to \$1,500 mark, it is appropriate to investigate an

in-house computer. By then you probably will have a fairly sophisticated computer operation with several very capable and experienced personnel on your own staff.

At this point the old programs may have to be translated into a new language, but this is usually handled very easily by means of a standard language-to-language routine. Some disappointments may be in store when you put in your own computer. For example, you might not have the capacity of an IBM 370 at your in-house keyboard, and your specifications might not be coming out with right-justified margins. A high-speed printout may be impossible, unless you can justify leasing a high-speed printer at additional cost. However, it would probably be the best system for a firm that desires to operate the computer almost continuously.

Even some of the largest firms reserve their in-house computers for accounting, specs, and engineering purposes only. How they use it strictly for architectural purposes is the subject of a clearinghouse project currently under study by the AIA Automated Practice Technology Committee. Once efforts are adequately coordinated in this area, a whole new opportunity will open to the majority of architects who are waiting for others to demonstrate how computers can be utilized with a minimum of risk and a maximum of returned benefits. □

All computer programs and data must be put in the main memory before processing can take place. The memory size, or number of electronic locations that are available for holding information, limits the length of computer programs that a computer may accept and the amount of data that it may contain. To augment a limited memory, many installations use removable magnetic tapes or discs for temporary storage.

The control device oversees and monitors the activities of the computer. It usually contains a small storage area in which most of the manipulation of data occurs.

The basic processing operations of the computer are activated by circuitry in the arithmetic/logical unit: Some smaller computers are capable only of arithmetic

processing, but most general digital computers can perform both numeric and nonnumeric operations.

Output devices are of several types. Most handle information in much the same manner as the input devices do. The most frequently used output device, the line printer, prints information on continuous sheets of paper at speeds approximately 500 times faster than on the typewriter. **JERALD L. RIPLEY AND JARRELL C. GROUT**

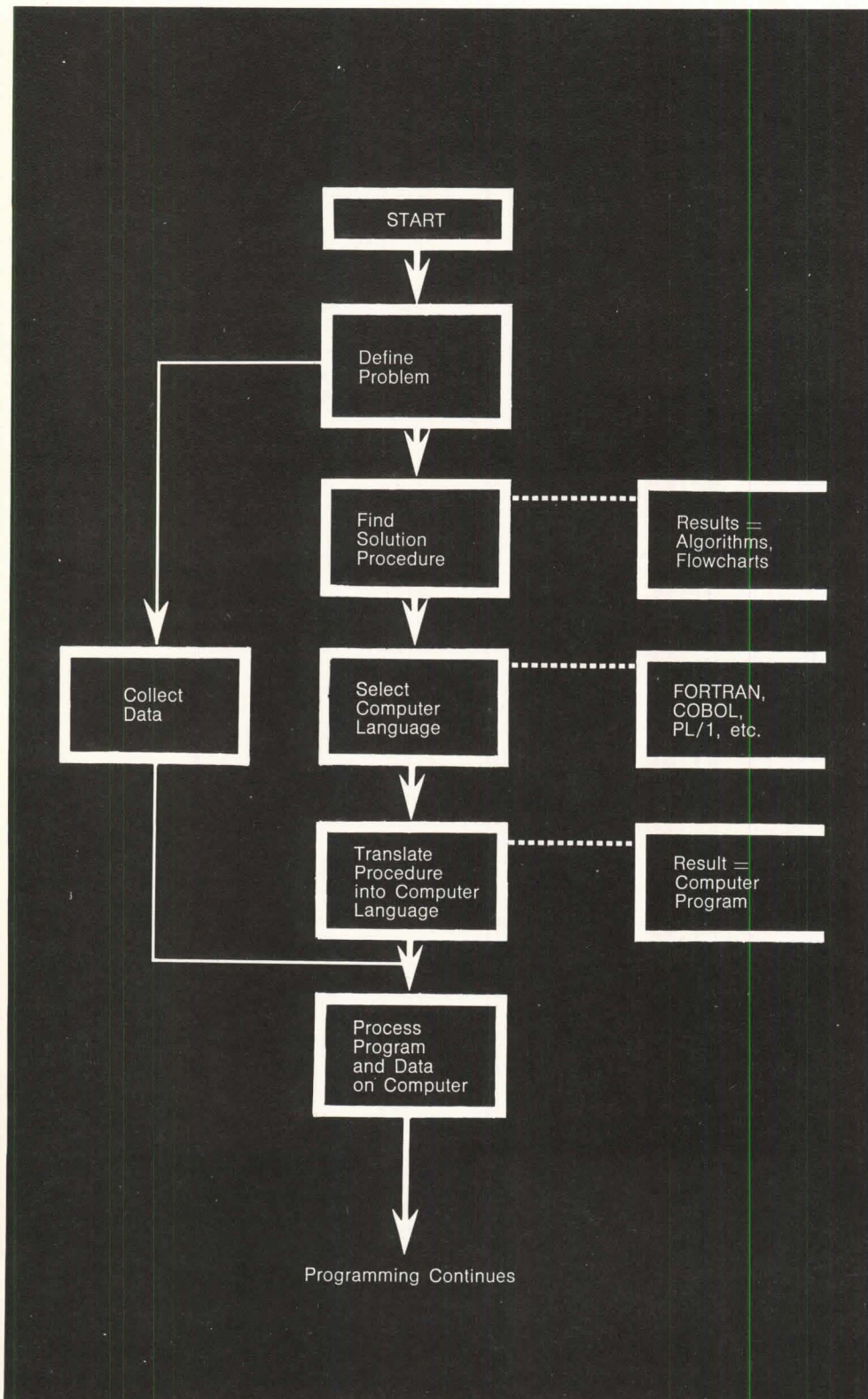
*Dr. Grout is associate professor and chairman of the department of computer science at Stephen F. Austin State University, Nacogdoches, Texas.*

*Dr. Ripley is assistant professor of computer science at the same university.*

## Computer Basics: Software

Computer software refers mainly to computer programs, which are made up of instructions written in a computer language so that the machine can solve a particular problem. Programming encompasses several activities as shown in the diagram on page 40. Once the problem the computer is to solve has been defined, two simultaneous procedures are carried on. The first is to collect the data that is necessary for solving the problem, and the second is to establish the details of the program itself: finding the solution procedure; selecting the best computer language; and translating the solution procedure into the selected computer language. Once these things are done, the





program is established, and it and the data are entered into the computer for processing.

The solution procedure is more formally referred to as an algorithm—a set of rules for the solution of a problem in a finite number of steps. An algorithm may begin as a list of steps, equations and broad statements. Its final form should be a program flowchart. Both can be developed independently of the computer language to be used.

A computer language is the means used to translate the solution procedure into a form that can be interpreted by the machine. The basic machine language of all digital computers involves some form of the binary number system. Because it is easier for human beings to understand symbols and words rather than binary numbers, two other types of computer languages have been developed. Both of them, the assembly languages and the compiler languages, must be translated into machine language before the computer can execute the program. The translation is accomplished by control programs already stored in the computer's memory.

Compiler languages, such as FORTRAN and COBOL, are relatively easy to learn and use, and unlike a machine language or an assembly language, they have been developed independently of a particular computer. FORTRAN, an acronym of FORMula TRANslation, was originally designed for formula or algebraic problems; it has evolved to allow for the processing of nonnumeric data. COBOL (COMMON Business Oriented Language) was designed specifically for processing business-type problems. Most digital computers accept programs written in FORTRAN and COBOL. A third compiler language, PL/1 (PROGRAMMING Language/One), is a recent effort to establish a general purpose language. Some other compiler languages have been designed for special purposes, such as STRUDL for STRUCTURAL Designers.

Once the program is developed, it is put into the computer via the steps described in the accompanying article on computer hardware. JARRELL C. GROUT



# Question: Value Engineering Is a Method of . . .

Clint Page

(choose one)

- A. Getting the most value for every dollar spent in a building.
- B. Cutting costs by eliminating design as an unnecessary frill.
- C. Second guessing or undercutting the architect.
- D. Doing something you've been doing all along.
- E. Doing all the above.

If you chose A, you are at least open-minded about value engineering. If, on the other hand, you chose B, C or D, you are probably an architect who has heard about value engineering—and not liked what he heard. If you chose E, you're probably confused about the subject, as many people seem to be.

The confusion about value engineering is easy to understand. Like a couple of other celebrated magic phrases—systems building and construction management—value engineering came along out of left field, in this case from the defense industries, where it got its start during World War II. By the time value engineering filtered through to the building industry, it was so wrapped about with varying viewpoints and scary connotations that few building professionals knew exactly what they were dealing with.

To many architects value engineering seemed to be a process that promised cost savings to owners, with no accompanying loss of building use or quality; bonuses to contractors who could come up with cost saving ideas—and nothing but headaches for architects. The headaches seemed to be built in, because the savings and the bonuses were to come from finding “fat” in the architects' designs.

Given the confusion, the reluctance and the panic that greeted its arrival on the construction scene, it is probably wise to start with a couple of definitions of value engineering, alternately called value analysis. One good one is given in a book called *Value Engineering in the Construction Industry*. Alphonse J. Dell' Isola, P. E., who runs the Washington, D.C., office of McKee-Berger-Mansueto, Inc. wrote the book, and his definition goes: “In simple terms, VE is a systematic approach to obtaining optimum value for every dollar spent. Through a system of investigation, unnecessary expenditures are avoided, resulting in improved value and economy. The VE approach is a creative effort directed toward the analy-

sis of functions. It is concerned with the elimination or modification of anything that adds cost to an item without adding to its function. During this process all expenditures relating to construction, maintenance, operation, replacement, etc. are considered. Through the use of creative techniques and the latest technical information regarding new materials and methods, alternate solutions are developed for the specific functions.”

Dell' Isola also quotes one other definition, this one from *Techniques of Value Analysis and Engineering* by L. D. Miles (published in 1961, the book was the first one on the subject of value analysis, and Miles is considered the founder of the technique): “Value analysis/engineering is an organized creative approach which has for its purpose the efficient identification of unnecessary cost, i.e., costs which provide neither quality nor use nor life nor appearance nor customer features.”

It's hard to find anything threatening or arguable in either definition. The problems all seem to have arisen with the practice, not the theory, of value engineering. Problems start with the term itself. To the architect, it suggests that an engineer is going to review and second-guess the architect's work, which indeed may happen.

This apprehension about a new actor entering the construction drama in a threatening way may have been underscored by Information of the Society of American Value Engineers, a name which yields the somewhat salesmanlike acronym SAVE.

And it may have been intensified by the fact that SAVE has made one of its major objectives the certification of “value engineers.” The American Institute of Architects and the American Consulting Engineers Council have maintained that, if there is to be such certification, it should be by someone other than SAVE.

The more basic point, however, is that value engineering is more process or

**Mr. Page** is a freelance writer specializing in architectural and engineering topics.



## The earlier that value engineering is applied, the greater the savings.

methodology than discipline. Even as such, of course, it has nervous-making overtones for some architects.

It suggests a form of review that picks a more or less complete design apart, looks at all of its components, down to the doorknobs, and evaluates every choice the designer made. Which is, many architects might say, something they have been doing at every step of developing the design in question.

Bob Wetmore, in charge of engineering at Ballinger Co. in Philadelphia, tends to disagree. "When people say they've been doing it for years," he says, "what they've really been doing is cost analysis. But they haven't been doing it in terms of basic functions."

It is basic functions that value analysis is all about. The basic value analysis approach—as practiced at Ballinger and elsewhere—is really an effort to answer a series of very simple questions about any component of a design. What is it? What does it do? What is it worth? What does it cost? What else would work? What does that cost?

As analyzed in value analysis, functions end up defined in two words, a verb and a noun: for example, the function of a pencil is to make marks. The pencil example, by the way, seems to be a classic; it is cited in much of the literature on value analysis.

Since the pencil's function is to make marks, any component that doesn't contribute to the making of marks represents a secondary function. The yellow paint makes the pencil look nice, and the name stamped in gold identifies it, but neither helps make a mark; it is the lead that makes a mark, and any other component

is either supportive of it or optional in terms of basic function.

It is basic functions that have primary worth in VE; secondary functions ("look nice" or "identify pencil" in this case) have less worth. They all cost money, however, and it is the application of this ratio of cost to worth that leads to potential savings.

And it is here that one of the big hang-ups about value analysis crops up. It is all too easy to assume from this example, or almost any other, that the guy who is going to do the value analysis is a single-minded s.o.b. who can see only one kind of function—a use function—and that intangible considerations such as esthetics go out the window in his headlong search for cost reductions.

It doesn't have to be that way. Intangibles such as beauty, client prestige and user satisfaction can be significant parts of a building program—and thereby functions of a design to which worth can be assigned. The Seagram building in Manhattan is an overworked but splendid example of a client making beauty a key objective of design and being willing to pay for it, for what he considered very sound business reasons.

The more sensitive practitioners of value engineering are well aware that not every desired component of a design can be quantified. Miles, the fellow who started it all, points out in his first edition that value analysis could and should be done "without reducing in the slightest degree quality, safety, life, reliability, dependability and the features and attractiveness that the customer wants."

In fact, suggests Donald E. Parker, value engineering manager for GSA's Public Buildings Service, the thought that esthetics might be gingerbread, is an "unwarranted and unnecessary jab" at architects. He points out that Miles was the first to "present both use functions and esthetic functions in serving the needs of man as part of the value process." All a customer wants is a function, says Parker: "He either wants something done or he wants someone pleased."

Which means that esthetics can be a required basic function. The trick, according to Parker, "is to determine, or make a judgment, when an esthetic function is basic and when it is secondary."

For the value analyst, it is useful art, not fine art, that contributes to the esthetic function being considered. Parker uses brick as an example: Functionally, a brick wall and a concrete block wall do the same things—divide space, support weight. The choice between the two is largely a matter of esthetics, a matter of color, form, texture.

Brick costs more than block, and the extra cost is allocated solely to the esthetic function. So when brick is used, Parker points out, those esthetic functions should be necessary. They may not be, he suggests, inside an elevator shaft where no one can see the color or feel the texture.

And to make the point a little finer, Parker points out a choice within a choice. Brick becomes sensitive to beauty he says, when "it reflects creative work, such as in its placing and coursing." The cost difference between a running bond and a flemish bond brick wall, "is allocated solely to esthetic function."

Another side of the "esthetics is gingerbread" fallacy, Parker suggests, deals with the designer's view of what he has done. If esthetic aspects of a design can be too easily eliminated, perhaps the architect is too ready to compromise his design, or perhaps his esthetics were not well thought out to begin with. Required esthetics—those design features that meet demonstrable human needs—"should never be deleted from construction." That which is required, Parker says, should be provided, "or the building shouldn't be built. Design performance must be accomplished in response to human needs" to be valued as a basic function.



## Its value will grow as it is viewed as a tool rather than an intrusion.

Value engineering's emphasis on basic functions can, according to Bob Wetmore, "change how you look at a building." It provides a "new fresh approach to why you do what you do in designing a building."

Ballinger has taken it seriously, setting up a value analysis team consisting of the heads of the firm's four departments who, with Wetmore, all hold certificates from a 40-hour AIA/ACEC seminar on value analysis. The four of them started training other members of the firm, down to the project architect level, so that value analysis can be cranked into a project at the very start. "Not only at the schematic stage," adds Wetmore. "The first thing you should do is apply it to the owner's criteria."

That is probably the most difficult stage of the design process to apply value analysis techniques—the easiest is after the design has been completed—but it provides the greatest potential savings. The earlier changes are made, the less they cost. Bringing value analysis to bear early in the design process is also a form of insurance: It protects everybody—designer, contractor and owner—against having to make cost-reducing changes when they cost the most to make, and it protects the designer against having his work second-guessed later in the process.

Time, suggests engineer James J. O'Brien, president of Project Management Institute and an experienced value analyst, is the "dimension most usually ignored by proponents of VA, which makes what they advance as a panacea all too often turn out to be a placebo. By applying VA at the end of the construction process, where it is an easier job, they turn up money-saving opportunities, but they also create obstacles."

Design suggestions based on value analysis that are made at the 90 percent point in design, says O'Brien, will require about 10 times as much work as if they had been made earlier. And not only are changes more expensive as the project progresses, when they come late in the

game, but also they can open the door to costly mistakes that can wipe out any potential savings.

To be really successful, he says, value analysis must occur early, with less detail available. It is easier, of course, later, and easiest with a completed building; one answer offered by O'Brien is to critique existing buildings and apply the results to future designs as detailed criteria for achieving savings.

That building clients are intrigued by the potential savings is pretty clear from the interest in value engineering that is sweeping through parts of the federal government. The General Services Administration has set up value engineering boards in each of its 10 regions and in the main office in Washington, D.C. GSA has been actively spreading the VE gospel, training 300 of its people in 40-hour seminars, and another 275 in shorter sessions, plus talking to more than 1,500 more through a variety of industry seminars.

And there have been savings: GSA claims that it has saved \$2,174,100 as the result of 150 approved VE change proposals; contractors have picked up \$1,836,400 as their share of the savings under the bonus incentive provisions of GSA's VE efforts. GSA is also pleased with the return on the cost of its VE program: \$4.53 saved for every dollar spent on the administration of the two-year-old program. A little more than a year ago, GSA broadened the program to include architects and engineers doing GSA work, drawing up contract provisions to include VE in architectural, engineering and construction manager contracts.

The savings look good to Congressmen, too, among them Rep. Larry Winn Jr.

(R.-Kan.) who has been talking about introducing legislation that would require value engineering, or value management, as Winn prefers it, on all government contracts. He is still talking about it, although he has not yet introduced any legislation. And neither has the Senate Public Works Committee, which has also been considering legislation that would encourage GSA's VE services and require the General Accounting Office to study the use of value engineering techniques on all federal building programs.

GAO in its turn has been urging government agencies to climb on the VE bandwagon by subjecting all contracts over a given figure, perhaps \$10,000, to VE with incentives to reward contractors or designers for money-saving ideas. GAO hasn't gone so far as to suggest legislation, but it is supporting GSA's plan to set up a federal value management council that would cross agency lines.

To make value analysis a reasonable and workable idea for architects, it is going to have to be presented as something they can use, not something that somebody is going to impose upon their work. That is, of course, a thrust behind AIA and ACEC co-sponsorship of week-long value analysis workshops. Both societies also feel that GSA's implementation of contract requirements for VA is a reasonable test of the application of value analysis to the design phase of building projects. But both feel that there has been too little experience with value analysis to justify legislation making it a required part of every federal building project.

Like the other two magic phrases cited earlier—systems building and construction management—value analysis is threatening only when it is viewed as something that somebody else is going to do to your design. Seen as a way to think about design or as a formalized procedure that helps the architect do something he is always trying to do—give his client the best possible job for his money—value analysis can be a useful tool. □



# AIA Minority/Disadvantaged Scholarships: A Commitment Yet to Be Fulfilled

"Whereas, at the 1972 convention, the membership of the AIA committed its full support to the minority/disadvantaged scholarship fund drive; and

"Whereas, the membership has not lived up to its commitment—after an initial surge of activity, nearly all fund drives have become stagnant and the spirit and sense of responsibility behind the initial commitment have vanished; therefore, be it.

"Resolved, that all AIA members hereby rededicate their personal efforts to rebuild the spirit and surge of activity toward the objective of meeting all regional quotas and satisfying the important social commitment supported by the membership in establishing the AIA minority/disadvantaged scholarship fund drive." (Text of a resolution passed at the 1974 AIA convention, Washington, D.C.)

What follows is a review of the history of the minority/disadvantaged scholarship program, an accounting of its current status, and, most important, an introduction to some of the people it has helped. For, at its essence, the program is directed at development of that most crucial professional resource—people.

In November of this year, one of the students who will be running for the presidency of the Association of Student Chapters/AIA will be Marion Solomon, who has this summer completed his fourth year as an architecture student. Now at the University of Texas at Arlington, Marion is the recipient of an AIA/Ford Foundation minority/disadvantaged scholarship; he is the young man who said of the scholarship "Just open the door, I'll get myself in."

The idea that there might be that door was suggested to him when he was still in junior high school, back in Houston, when he took part in a special summer program sponsored by the school system "to motivate us, so that now, eight of my junior high school class are in architecture. . . . The scholarship is the thrust, the big thing that gave me the green light."

Recommended by his high school guidance counselor for the AIA/Ford program, Marion has also worked for the architectural firm of Caudill, Rowlett Scott, getting the job by opening the door

and asking to see the general manager.

"They took me with nothing," he says, "and gave me a chance to develop not only as a draftsman, also as a person. The theory, that comes from school, it's how to learn, but you learn in the office. That's where the 'true grit' comes in." And his school "thinks it's a privilege to have a student who has that kind of scholarship."

Marion is a member of the first cohort of AIA /Ford recipients, and he sees the scholarship as something "very special." At the 1974 AIA convention, he said, "I have spoken on numerous occasions of my appreciation to the members of the AIA for their having given me the opportunity to be able to achieve one of my goals. I . . . have learned many things about life, society and the need and desire to achieve one's ambition. I have had the pleasure of meeting many important people, but never have I forgotten, nor do I plan to forget those who have helped me, to help someone else." Nor does he plan to forget why he was given this chance.

When he is through with school, Marion plans to work in urban design; he feels that he is "sensitive to that. Cities don't have planning programs. Houston is the place" that he intends to return to, where he will bring back to his own community the things that the AIA/Ford scholarship has made it possible for him to learn.

"The thing is working," he says.

The seed of the AIA/Ford minority/disadvantaged scholarship fund, and its successor, the AIA minority/disadvantaged fund, was planted at the 1968 convention in Portland, where the late Whitney M. Young Jr., then executive director of the National Urban League, said "You are not a profession that has distinguished itself by your social and civic contributions to the cause of civil rights, and I am sure that this has not come to you as any shock. You are most distinguished by your thunderous silence and your complete irrelevance."

The exhortation was taken to heart by the membership.

In response, a task force on professional responsibility was appointed to explore the problem of minorities in this

country as they relate to the Institute. A search for funds to support community design centers was begun, and the task force succeeded in obtaining VISTA volunteers to staff the centers. A study of governmental restraints in building for the poor was begun; and lobbying was undertaken to urge the federal, state and local governments to give equal opportunities to minority architectural firms. The private sector was also contacted with the same goal. Individually, many architects instituted on-the-job training programs.

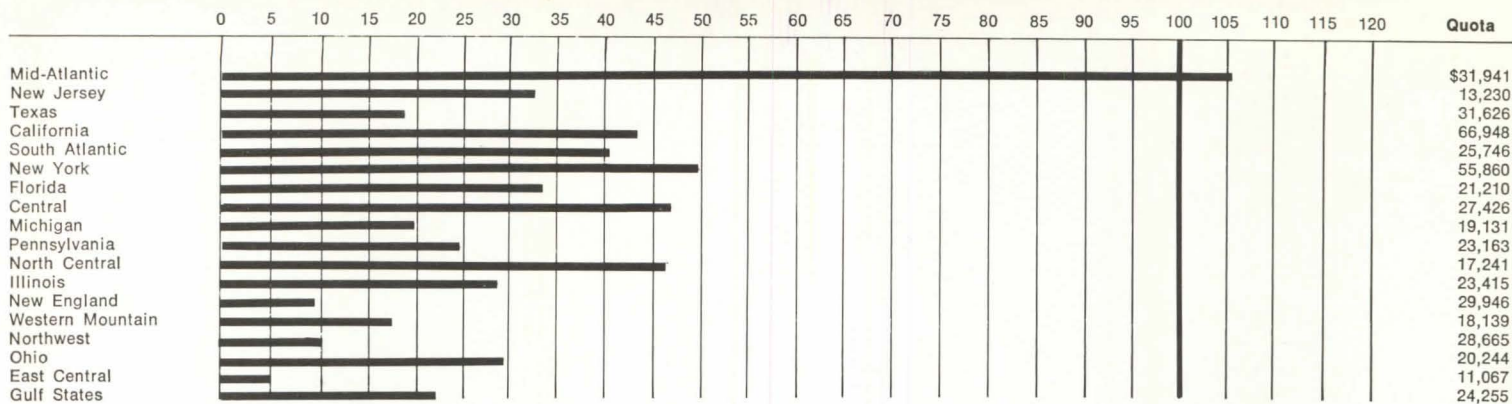
Added to these responses was an application to the Ford Foundation in 1969 for a \$500,000 grant to be matched by contributions from the AIA membership that would set up a program for scholarships to be given to minority and other disadvantaged students so that they could attend schools of architecture.

The Ford Foundation awarded the grant, and a three-year program was established to provide scholarships that would take students from their first year in college through their first degree in architecture.

A nationwide talent search was begun, and in 1970, 26 students from 8 states and the District of Columbia entered 16 colleges and universities. Among them was Renee Kemp, now a fifth-year student at Syracuse University, who heard about the program via a television spot when she was a senior at McKinley High School in Washington, D.C. Renee, who has just completed two years at London's Architectural Association on an exchange program, has made the dean's list at Syracuse three times. Her interest in architecture, like Marion Solomon's, began in junior high school when she participated in a program on the "future city." When the time came for college, she said, "I was undecided about architecture or art, but the scholarship changed my mind. I didn't know how I would go to college without a scholarship, and I sat around from January of my senior year waiting and worrying. . . . I couldn't have made it for four years," she continued, "without the financial reassurance in working toward my goal. Not to have to worry about money takes a terrible burden away."



Percent of scholarship fund drive quota met as of 3/1, by region.



Renee's money comes not only from the AIA scholarship fund but also from Syracuse University. While she was at the AA in London, she also got a traveling scholarship that permitted her six months in Ghana, where she studied rural village architecture, gathering material for her thesis. Her interest after she is graduated is in "urban planning, which gets into the social problems. . . . You can't build," she said, "without some social basis, which to me really makes architecture work. It all depends on the quality of your training. School is preparation for my occupation. I know I need practical experience. After I graduate in 1975, I'd like to go to graduate school and work simultaneously. . . . I'll go where I'm needed."

As Van B. Bruner Jr., AIA, wrote in the January 1974 issue of the AIA JOURNAL: "Out there in society is a valuable human resource: the minority population. Many of its members . . . have a great desire to be a useful part of this society, rather than having any urge to be against it or a burden on it. . . . This country is presently looking to the minorities for support in many areas. . . . Today we have a chance to bring a miracle to someone who will become a viable human being, self-sufficient and self-giving, as a 'qualified' professional."

Renee describes her mother as now being "gungho about architecture. At first she wanted me to be a doctor." The AIA/Ford scholarship may have made the difference in bringing this "valuable human resource" into the architectural profession. As Janice Rainey, a student at Howard University, put it in a statement to the 1974 convention: "Living had already made me aware of the scale one sees when a child reaches for his mother's hem. . . . But architecture has made me aware that there is a tool that may chisel from harsh stone, cold glass and crude metal these living elements into a three-dimensional living space in which men may enter and feel and come to understand visibly, audibly and through touch. . . . The opportunity to explore life and to express it is a gift that cannot be superseded by anything less than the de-

struction of it all. Thank you for such a gift."

Janice is another of the 96 recipients of an AIA/Ford scholarship during the three-year grant period, as is Nathaniel Berger, soon to be a third-year student at Pittsburgh's Carnegie Mellon University. Nathaniel comes "supposedly from a doubtful community in terms of success." He recently received his grades from school: 2.4 overall with a 3.4 in his architecture courses. In describing his areas of interest, Nathaniel talks about "environmental quality, the overall living conditions of people in all levels of society, the type of environment created for incoming generations. Design," he says, "has a large effect on people; it can drive them insane or make them well-rounded."

Like many of the scholarship recipients, Nathaniel comes from a background that gives love and the dream, but "the total load is on myself. I can't look to my family for assistance." This summer, the "first generation college student in my family" is working for the Army Corps of Engineers design branch executing designs for small government buildings, in part to pay off a college loan that he needed to supplement the AIA/Ford scholarship that he describes as "great assistance to me." Working towards his goal, though, is not a new idea to Nathaniel; he had "worked for a few architects" while he was in high school, and it was one of "those firms, Urban Design Associates of Pittsburgh, that had recommended him to the scholarship committee. With the coming fall semester Nathaniel Berger will have to negotiate still another loan, yet, he said, "I hope I can continue. The program is fantastic; I only hope I can continue."

The AIA/Ford scholarship program has made its commitment to the three cohorts of students to see them through school. In the June 1974 report to the foundation, it was estimated that the "total program will produce 50 to 55 professional degree recipients who will be fully qualified to enter internships and eventually the profession of architecture." They come from Alaska and Arkansas through Massachusetts, Missouri, Missis-

sippi, Maryland and Minnesota all the way to Washington state and Washington, D.C., and attend 37 schools as diverse as Tuskegee Institute and the University of Idaho. With the end of three-year Ford/AIA matching-grant program, the AIA minority/disadvantaged scholarship fund was established. Now, a new group of students has entered the program, which is to be financed entirely by tax-deductible contributions by members of the AIA and is operated under the AIA Foundation.

The AIA minority/disadvantaged scholarship program also differs from the earlier program in that the grants are to cover only the first three years of the recipients' college tuition, yet it continues the spirit of the AIA's original commitment to, what Leon Bridges, AIA, described in the October 1972 AIA JOURNAL as: "a new and important task: to serve the poor, the minorities and the disadvantaged who reside both in our cities and in rural areas. One way to meet this task is to afford those who have personally experienced the problems the opportunity to acquire professional skills in order that they may participate in solving them.

"Minority architects," he continued, "and those from disadvantaged backgrounds have a heightened sensitivity to the problems. . . . The profession needs a greater number of such individuals participating at every level."

The new program was established at the 1972 convention in Houston, with the passage of the following resolution:

"Over the past three years, the AIA/Ford Foundation minority/disadvantaged scholarship program has been remarkably successful for scholarship recipients, schools of architecture and the Institute. Under the terms of that program funds were provided to assist 96 students.

"The need to provide educational opportunities still continues, and no further scholarships for that purpose are available through the AIA; therefore, a continuing program has been established by the Institute and the AIA Foundation.

"A fund drive, with a \$600,000 goal, is under way which will insure that equal



opportunity does exist within our profession, and that our profession responds to the needs of a diverse society. Therefore, be it

“Resolved, that the membership continue to give its full support and endorsement to the AIA minority/disadvantaged scholarship program.”

In the fall of 1973, 25 students entered college with assistance from the AIA program. One of them, Deborah Grimstead, has now completed her freshman year at the Renseleer Polytechnic Institute. Speaking at the 1974 convention, she said, “It is difficult to fully express my gratitude to those of you who have worked so diligently to solicit and collect funds to assist me in continuing my education.” At this time, though, the scholarship committee is worried about the future of Deborah’s education. The fund drive is falling short of its goal. The committee is disappointed about the response of some of the fund drive chairmen and some regions. As Rex Lotery, AIA, California regional director and a member of the AIA commission on community services said: “Naturally I don’t wish to name names but there are some real inconsistencies in realizing this commitment in several states and regions.” Pointing to the chart (page 45), he said, “I wish to emphasize the nature of the problem. Please take a hard look at the figures. These figures represent the percentages of three-year pledges related to regional quotas.” With unmet regional quotas, as well as unmet pledged money, there will not be an AIA scholarship program to help get Deborah and her fellow recipients through the first years of their college careers.

Deborah had been accepted at RPI and was told by the dean of minority students about the AIA scholarship as a means of supplementing other money she had managed to assemble for her education, including money from the National Association of Federal Postal Employees and \$100 that she had received from the television program “It’s Academic.”

Talking about where she would like to be 10 years from now, Deborah said, “Urban planning, houses. Community projects are very important. I’d like to

change the design of the house I live in, and make it more individual, and that’s what I’d like to be doing, thinking about the user.”

Deborah, who comes from Washington, D.C., had returned home in time not only to give her own thanks to the conventioners but also to read a statement from another member of her group of first year scholarship recipients, Jesse Santa Cruz:

“On behalf of myself and everyone who has received a scholarship . . . I would like to express my sincere appreciation on having been selected as a recipient for an AIA minority/disadvantaged scholarship. To achieve economic growth, America’s youth must be educated, those whose skills have become obsolete must be retrained and equal opportunity must be available to all. So often social problems raised by changing technology, inadequate educational opportunities, racial discrimination, the urbanization and industrialization of the nation prevent the proper functioning of economic growth. The fight against these problems must be waged and won! Scholarships are doing just that. They offer educational opportunities to people for whom the opportunity had not existed. . . . Through education, people with developed skills enter the society.”

With the fall semester, another 20 young students have been given the chance to begin work towards a degree in architecture. Like their predecessors in the program, they come from diverse parts of the country, having been nominated by AIA members or chapters, CDCs, deans of schools they will be attending, high-school guidance counselors, or directors of a community or civic organizations. The applications have been reviewed by the AIA scholarship committee and for those accepted into the program a scholarship is awarded on the basis of individual need, scholastic record, and interest or experience in architecture. Efforts are made to secure matching or supplementary funds to defray the cost of the scholarship, yet clearly the main thrust is the AIA’s. At the 1974 convention, after hearing the eloquent statements of the students, the resolution was passed, reiterating the need for a “staunch ef-

fort by each member to do his or her part in fulfilling the commitment and reaching the set goal” of \$600,000 over a period of three years. Robert J. Nash, AIA, minority/disadvantaged scholarship program fund drive chairman, and Lotery spoke of the mechanics for contributing to the drive. In each of the 18 regions shown on the chart contributions to the fund are solicited and collected by regional fund drive chairmen from individual members or firms and the monies are sent to the national office to be credited to the regional account.

More importantly, Bruner pointed out, if the national office is notified that the money has been donated, *it can be kept* by the local chapters so that each region can continue or begin its own program. It is, in fact, the hope that after the 1975-76 school year the state and local components will play an even greater role in what Lotery sees as “identifying young people who are needy but highly interested and motivated, and ready for a chance to work for an education and career in architecture.”

As Archibald C. Rogers, FAIA, president of the AIA, said: “This is a professional association that has made a bold commitment to society. Having made that commitment, we must insure that equal opportunity in our profession does exist. Every dollar pledged to the program will be used for direct scholarship assistance. We are not offering charity, we are expecting something in return—a new group of professionals with unique skills. Knowing these young people, I am assured that when they, too, are able to give, they will.”

At the 1968 Portland meeting, when Young said, “You ought to be taking stands . . . The decent people have to learn to speak up, and you shouldn’t have to be the victim to feel for other people,” he added, prophetically, “I make no pretense that it is easy.” *Peter H. Share*

For further information on how to send your tax-deductible donations to the AIA minority/disadvantaged scholarship fund, write: Brenda Watson, special assistant for education programs, at AIA headquarters.





## An AIA Design Team Studies a Neglected Sector of Honolulu

Kakaako, a strategically located but deteriorating 1,200-acre area in central Honolulu, has been the subject of controversy since the late 1960s when environmentalists halted plans of a developer to erect luxury highrise hotels and apartment buildings there. Development stopped, and ever since there has been a "logjam of planning studies and government inaction," and no clearly defined public policy for the area's development, in the words of a local architect.

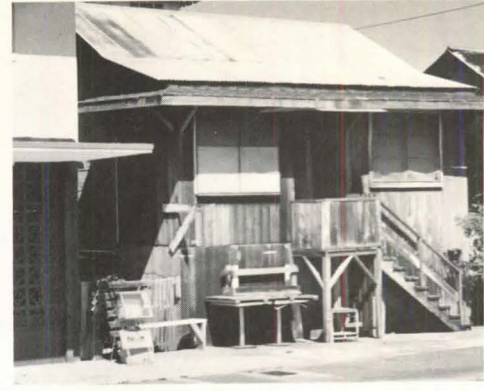
Kakaako has mainly provided sites for functions that traditionally seek inexpensive land: light industry and warehouse and distribution facilities. With its wooden stores and residences intermingled with the industrial structures, the area enjoys few municipal benefits. Streets, except for the main thoroughfares, have poor surfaces; streetlights are almost nonexistent and it has no storm drainage system.

Ideally situated for mountain or ocean views, and centrally located in relation to Oahu's major transportation routes, Kakaako is bounded by the downtown and the Hawaii state capital district on one side; on another is the Ala Moana shopping center, which attracts nearly one million automobiles per month during peak buying periods, and bustling Waikiki; the H-1 Freeway is on the third side; and the Pacific Ocean on the fourth.

The area, which has only three principal landowners in addition to the state and local governments, has many assets. The Waikiki end, more intensively developed, has grown rapidly and contains large apartment buildings and office structures and the Ala Moana shopping district. At its heart is the Honolulu International Center, with meeting rooms and concert/theater facilities. Ala Moana Park, created by a landfill, is the most used recreational area in the entire state, despite its overcrowding and limited parking facilities.

The Hawaii Chapter AIA, concerned about a public policy for Kakaako, central Honolulu's future and the means to pursue it, sponsored a visit by an AIA regional/urban design assistance team to make a planning study. The RUDAT endeavor was supported fully by state and





city officials, landowners, community groups and interested citizens.

The team, which arrived in Honolulu in early April for a four-day visit, was led by Robert S. Sturgis, FAIA, Cambridge, Mass., and also included Charles A. Blessing, FAIA, Detroit's director of planning; Carl Feiss, FAIA, director of the University of Florida's Urban and Regional Development Center; Edward J. Logue, Hon. AIA, president and chief executive officer of the New York State Urban Development Corporation; David O. Meeker, FAIA, assistant secretary for community planning and development, U.S. Department of Housing and Urban Development; Rai Y. Okamoto, FAIA, president of the San Francisco firm of Okamoto Associates, Inc.; and David L. Peterson, economic, planning and development consultant, Claremont, Calif. Working with Sidney E. Snyder, AIA, president of the Hawaii Chapter AIA, were a number of committees, with overall coordination by Don C. W. Dumlao, AIA, and Rolf Preuss, AIA.

This 19th visit by RUDAT to an area to respond to local environmental and urban problems was something of a "fast-track" performance, says Dumlao. He writes: "From inception to completion, it took just 54 days, including identifying the problem, developing community support, raising funds (\$12,000), obtaining AIA support, arranging advance publicity, assembling a specialized team for the Honolulu problem, organizing and programming the visit, publishing and presenting the report."

In brief, the team proposed that the area between the downtown and Ala Moana Center become the site of low-rise and highrise residential buildings providing 22,000 new dwelling units, blending with business and light industry. It suggested that heavy industry be eliminated on the waterfront and that recreational space be provided for the 70,000 more people who will be living in the area. It also proposed that a government-sponsored development corporation be created for Kakaako and that funds be raised from private sources for a citizen's committee which would develop recommendations for the 1975 state legislature.

The team's report reaches beyond Kakaako to state land use policies. The problem of formulating public policies to reconcile Hawaii's remarkable rate of growth with environmental issues lies in the Island of Oahu, the team said. Oahu contains 81.9 percent of the population, 81.2 percent of the employment, 36.1 percent of the prime agricultural land and is the center of state government. Oahu is where the "immediate solutions of increased urbanization must be focused." Guiding its growth "will remain a matter of critical concern into the next century."

The team commented that the consensus regarding Honolulu's future growth is that it should take the form of higher densities within present urban zones in order to save further encroachment on prime agricultural lands. (Indeed, legislation divides the state into four land-use districts: conservation, agricultural, rural and urban, with uses within each required to conform to the nature of the district.) However, the team declared that central Honolulu cannot provide for all the growth projectives of Oahu "without a serious loss of the human dimension of family housing."

The team explored the three basic elements of the state's "vestpocket" economy: defense expenditures, tourism and agriculture. It made assumptions about the future of these three elements, predicting that defense expenditures will maintain a dominant position and may even expand, and that "land now held in Hawaii by defense agencies appears adequate to accommodate considerable increase in use because of its current underutilization." The team assumed that "tourism will continue to grow . . . with increasing attention being devoted to the community and its environmental relationships." It foresaw further problems for Hawaiian pineapple and sugar industries and commented that "diversified agriculture, now in its early stages, is a worthy goal that should gradually expand and help relieve some of the state's imbalance of imported food products."

The team found that the ten-mile corridor from Pearl Harbor to Waikiki is the site of 89 percent of the island's jobs and that such concentration is unlikely to be

redistributed to any significant extent, commenting that from a functional point of view there are advantages to "retention of that concentration in close proximity to the airport, the port, their related industrial areas, the central business district and Waikiki."

Against this background, the team pinpointed these broad planning issues:

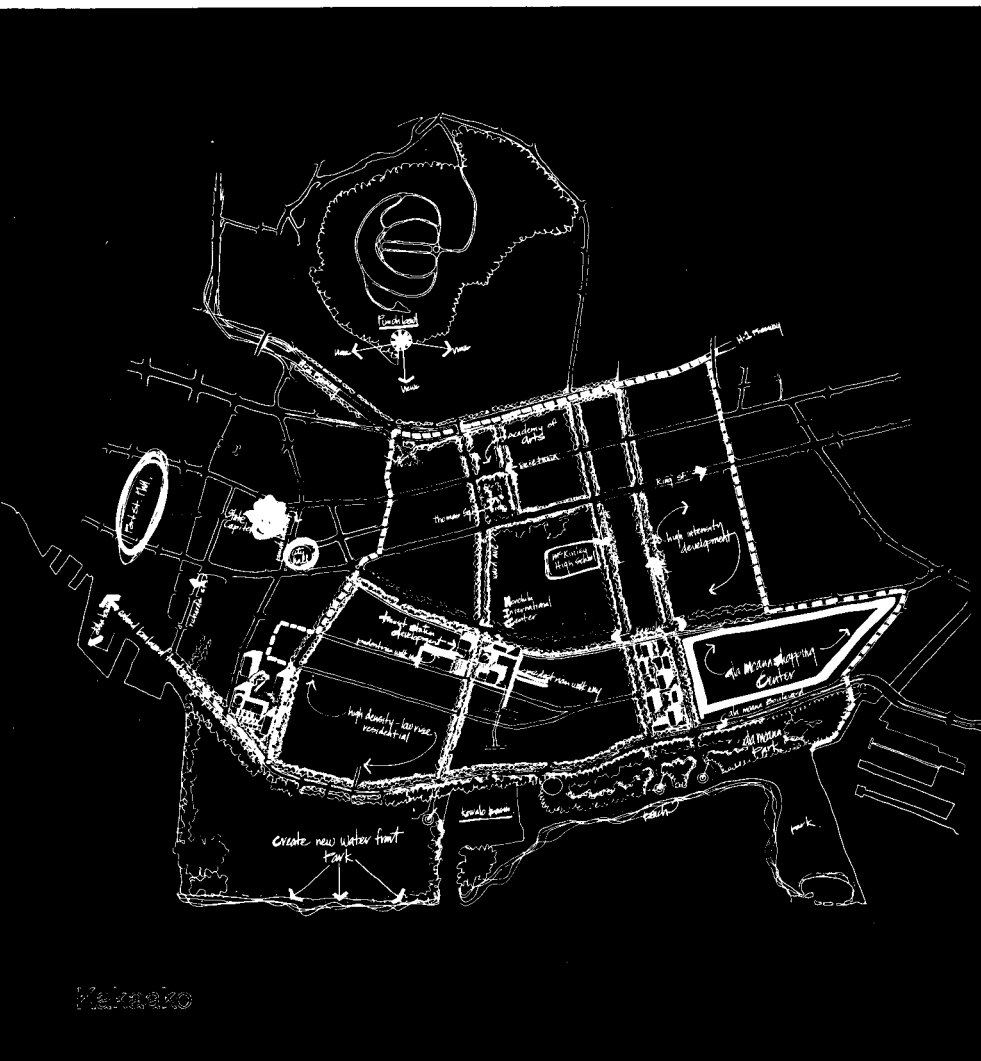
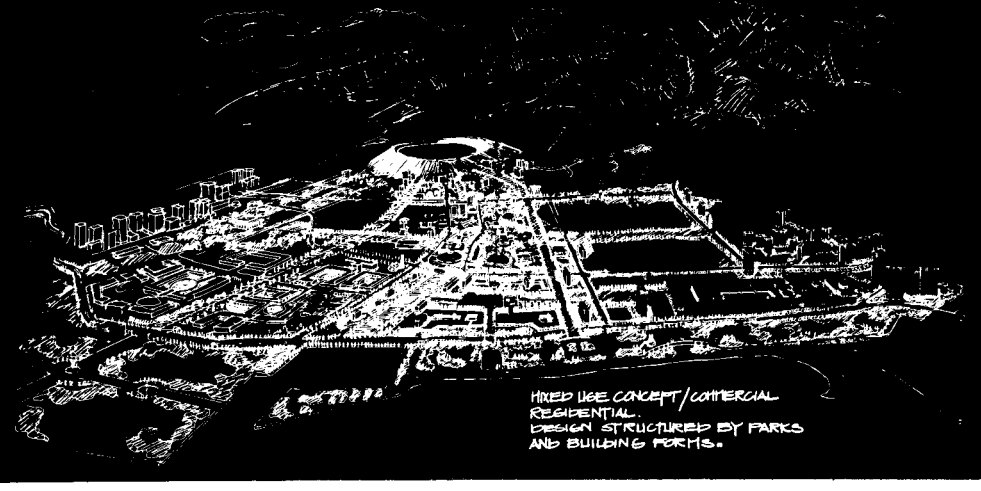
- Honolulu's continuing growth is threatening to overrun irreplaceable agricultural lands.
- There is no public policy to accommodate the growth, and the city and county planning department has neither a physical nor a financial plan to accompany its stated public policies for guidance of private development.
- There is an urgent need for low- and moderate-income family housing, and for an effective entity to carry out housing policies.

Basic to the team's recommendations was the premise that "because of adverse effects on the quality of life, central Honolulu cannot be redeveloped at a density which would accommodate all future growth." Also, public agencies have estimated that housing for 50,000 low- and moderate-income families is needed.

The team proposed that one-third of this housing need should be provided in Kakaako, close to existing employment. It suggested that 17,000 units be sited in the immediate area and that the other 5,000 units be located on the periphery. Within Kakaako, here would be low-rise-high-density housing a maximum of four stories in height. "The proposed 17,000 units of housing for the low- and moderate-income families should allow for special housing preferences for the island's ethnic groups and living styles. In addition, schools, parks, playgrounds, shops and small scale employment opportunities would also be provided for." Declaring the area to be the "most important visual corridor remaining in Honolulu," the team recommended the control of building heights and street layouts and that ample open space be provided.

To help meet the cost of constructing the lower income housing, the team said that "it will be necessary to provide on the visual edge of the redevelopment area for





high values in highrise uses which can provide some of the required subsidy." This would include housing for 5,000 middle-income families, office space and other commercial uses.

The team urged that future urban growth on Oahu take the form of relatively high density new communities at stations of the proposed public transportation system. This extension beyond Honolulu's urban limits "should not be taken as an invitation for suburban sprawl. The new communities should be designed to be sympathetic with the landscape, economical of land and based on pedestrian movement."

The team found that many small industries and businesses in Kakaako "are both useful in themselves and valuable as a

source of employment." It suggested that there should be new combinations of residential and light industrial uses so that residents "may live and work not only compatibly with one another, but may find creative work in their own homes or within a short distance."

The team suggested that some of the industrial and service tenants in West Kewalo—a peninsula lying between the harbor and Kewalo Basin—be relocated to provide land for a major new 100-acre waterfront park to serve the increased population of the city. Relocation is costly and problems are complicated, but the state of Hawaii has been a leader in relocation assistance, having been one of the first to adopt procedures similar to those of the Federal Uniform Relocation Assis-

stance Act, and the team urged it to continue this leadership.

To implement the redevelopment of Kakaako, the team recommended:

- "The major landowners in Kakaako should be provided with all public assistance necessary to make possible good housing for families of low, moderate and middle incomes.
- "The city/county and state planning processes should be the subject of a state-sponsored citizen review.
- "An urban design plan including three-dimensional development guidelines should be a regular part of the city planning process.
- "... The scope of the needed redevelopment of central Honolulu requires the formation of a Central Honolulu Development Corporation with a bonding authority of \$500 million.
- "A special citizen's committee should be created immediately with private funds of \$250,000 for the purpose of studying this matter in detail and making appropriate recommendations for program and legislation to the 1975 session of the state legislature."

And what has happened in the short time since the rigorous team schedule that required RUDAT members to spend 16 hours a day studying the problems? The state Senate has passed resolutions commending the RUDAT effort, which is significant, says Don Dumlaio, "since there were only two days remaining with a tremendous backlog of legislative proposals." The Hawaii Chapter AIA called a meeting to create a citizens' task force to study the team's proposals, and more meetings are planned to encourage the formation of a citizens' committee to represent segments of the community. The group would push for state legislation in 1975 and advise state and city officials on revamping central Honolulu.

In an editorial, the *Honolulu Star Bulletin* said, "An advantage of the AIA proposal is that it is tangible, and thus relatively easy for the lay public to understand and discuss. In the process, the discussion could illuminate the significant differences between the state and city/county approaches to growth." *Mary E. Osman*



# Henry Klumb in Puerto Rico: Architecture at The Service of Society

JoAnn Crisp-Ellert

Henry Klumb, a tall, spare patriarch, has a strong personal conviction that architecture has an important, humanizing role in meeting the demands of a rapidly modernizing society such as Puerto Rico. The essentials of his belief are found throughout this small Caribbean island in churches, libraries, hotels, factories, homes and educational buildings.

At our first meeting Klumb candidly stated, "There is no place in Puerto Rico for an architect who simply creates monuments to his vanity and self-glorification to the exclusion of the real needs of the people." Rather, Klumb told me, "The architect must use the benefits of our industrial, technical and scientific advances not only for materially determined ends but also for man's social and spiritual development to improve the quality of life. To work for this, to help obtain this profound aim, is the duty and privilege of the architect."

Klumb's three decades in Puerto Rico are dramatic evidence of how the architect in a developing country can interpret social values and preserve the local environment while utilizing the low-cost construction methods and local materials of an emerging society.

Klumb still has the future of Puerto Rico in mind. He has established through his personal funds a nonprofit foundation. One of its major projects is to bring young people to Casa Criolla, Klumb's plantation-type home. There, they will be exposed to various disciplines and ideas for periods of up to six months. Urban development will be stressed. Klumb wants to help prepare the young people to solve the problems of the island.

Klumb came to the United States from Cologne as a result of his enthusiasm for the expressionism of Frank Lloyd Wright, which he first saw in 1928 in *Ausgeführte Bauten und Entwürfe*, a comprehensive presentation of Wright's work. Captivated, he wrote to Wright, asking to be taken on as a fellow.

**Dr. Crisp-Ellert** is an associate professor of art at George Mason University, Virginia, currently doing research at the Hirshorn Museum and National Gallery of Art in Washington, D.C.

Klumb recalls that after an exchange of cryptic Wrightian correspondence he was accepted. He first saw Taliesin framed in an intricate maze of icicled splendor on a snowy night in early January 1929. Wright soon called Klumb his "right bower" and relied on Klumb greatly during the five years he remained with him. Wright relates affectionately in his *An Autobiography* how Klumb courageously defended him when during the depths of the Depression a cyclopean, burly workman threatened Wright.

Notwithstanding his great admiration for Wright, Klumb is fond of saying, "I never designed a building that looked like a Frank Lloyd Wright building." Klumb was one of the few who emancipated himself from Wright's shadow and developed his own original style. However, Klumb never denied or ignored Wrightian architectural philosophy. And his enormous contribution to Puerto Rico reflects much of what he learned at Taliesin.

With Wright, Klumb continued to work with his hands on construction projects as he had during his architectural training in Cologne. From Wright he also learned the value of landscaping and thus was able to synthesize his building with Puerto Rico's tropical environment.

It was his experience with Wright that led him to open-planning, the relationship of sun to shadow, and how to design bold, simple shapes that adapted themselves to the dexterities and limitations of Puerto Rican workers.

Klumb's genius in Puerto Rico was to develop inspiring structural forms that assimilated local conditions and materials, inept building technology and the vicissitudes of unskilled labor. He entered into the fabric of Puerto Rican culture and worked to enhance it.

In 1944 when Klumb arrived at this small, picturesque island, he found a Puerto *Pobre* rather than a Puerto *Rico*. Although blessed with a favorable agriculture climate, Puerto Rico still had to import food to supplement a diet of rice, black beans and codfish.

Klumb was appalled to find that the environs of San Juan were overcrowded with squatters living in clusters of depressing makeshift shacks in *barrios* where

inadequate sanitation bred chronic disease and pestilence. The industrial suburbs of Puerto Rico were pockmarked by ugly, cinderblock factories whose working conditions were, if anything, more depressing than their exteriors. The tropical lushness of greenery and trees was savagely and thoughtlessly eradicated. In fact, in the suburbs of San Juan (from Miramer to Rio Piedras), there was not a single palm tree, not even the lowly plantain or the acacia tree was left standing. In the countryside outside of San Juan, there was more poverty, squalor and disease. The dignity of the individual was suffocated by being forced to inhabit and toil in such grotesque and depressing surroundings.

But in 1944, despite World War II, Puerto Rico, under New Deal Governor Rexford Guy Tugwell, was headed for a program of dynamic change and growth. There was an enormous demand for new planning and construction.

The tempo of Puerto Rico's modernization was further accelerated by the dedicated and charismatic leadership of Luis Muñoz Marin. Tall and powerfully built, often called bearlike, Muñoz studied law at Georgetown University, wrote poetry in Greenwich Village and possessed a Messiah-like determination to modernize Puerto Rico, to improve the welfare of its people and to make it economically self-sufficient.

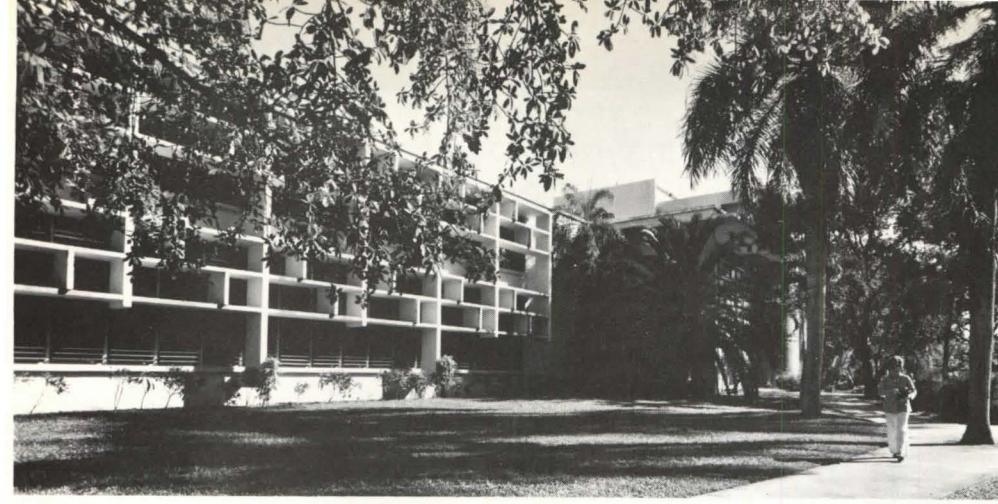
Muñoz' program was mainly responsible for the enormous changes for the better that took place in Puerto Rico during the next 20 years. By 1964 the per capita income had risen from \$121 to \$1,047 annually and the average family income, from \$611 to \$3,003. The gross national product rose from \$287 million in 1940 to \$2,531 million in 1964.

It was on the eve of this period of rapid modernization that Governor Tugwell encouraged Henry Klumb to come to Puerto Rico. Tugwell had first become acquainted with Klumb and his philosophy of architecture in Los Angeles, where Klumb in developing city plans had demonstrated a keen insight into balancing social, economic and political needs.

To Klumb, Puerto Rico was both a challenge and an opportunity. It was a



**The University of Puerto Rico's Rio Piedras campus (left) and the Eli Lilly & Co. plant (below) exemplify Klumb's regard for natural ventilation—and nature itself.**



challenge because construction in Puerto Rico was totally unlike that in the United States. The labor force was virtually unskilled in modern techniques, there were no architectural engineers, there was no building supply industry, and the only feasible building material was concrete. Moreover, construction budgets were forbiddingly low.

It was an opportunity because Klumb had the rare chance of translating a personal philosophy into three-dimensional buildings—to make a dream into substance.

In essence Klumb's choice in Puerto Rico was either to utilize high cost, state-side building methods, including importing materials, labor and whatever else was needed, or to investigate and find a way of using the indigenous labor and materials of Puerto Rico. Klumb instinctively chose the latter course.

Puerto Rican workmen are highly proficient with concrete poured in place and that became Klumb's basic medium in Puerto Rico. Shortly after his arrival he had specified precast concrete fins on a building. Instead of precasting, the contractor put up an elaborate framework and poured them in place. From that point Klumb went along and did it their way. He was keenly aware that pouring in place also aided Puerto Rico's chronic

unemployment as it is labor intensive. He used shadowed texture, not the skin-tight of the Bauhaus.

Klumb believes in airconditioning only for small cubicles and offices. Rather, he prefers to design his buildings to take advantage of the prevailing trade winds of the island.

The Del Carmen Church in Catano, (following pages), built in 1960, is best representative of Klumb's architectural philosophy. Its structural form, seemingly hewn from stone by a sculptor's chisel, is an unequivocal statement of a spiritual yet humble quality of life.

The church, located across the bay from San Juan in the small town of Catano, is in the center of a typical Puerto Rican plaza with a shaded promenade.

Klumb has characterized Del Carmen Church as a seed. It had to fit into the space left by a previous church that was demolished after having been declared structurally unsafe. The little seed has indeed grown into a powerful force. To fit the church on the small site, which is choked by buildings along its irregular boundaries, Klumb devised a hexagonal plan. Special requirements in this church for 500 people were a side chapel within the church proper, and standing room at the rear for men (a local custom).

The simple interior is centrally ori-

ented to the altar and to the self-ventilating dome above. The bell tower, with manually operated bells, is asymmetric to the plan but on axis with the plaza.

Forms are strong and simple. Surfaces are rough and unadorned. The roof is supported by columns only and is free from perimeter walls. Natural light enters the main space through an eight-foot-high screen of terra-cotta blocks on one side of the church. This also provides cross ventilation. From these openings and the spaces between the walls and roof, air moves up to the central ceiling vent. Exterior wall and floor surfaces are finished in cement.

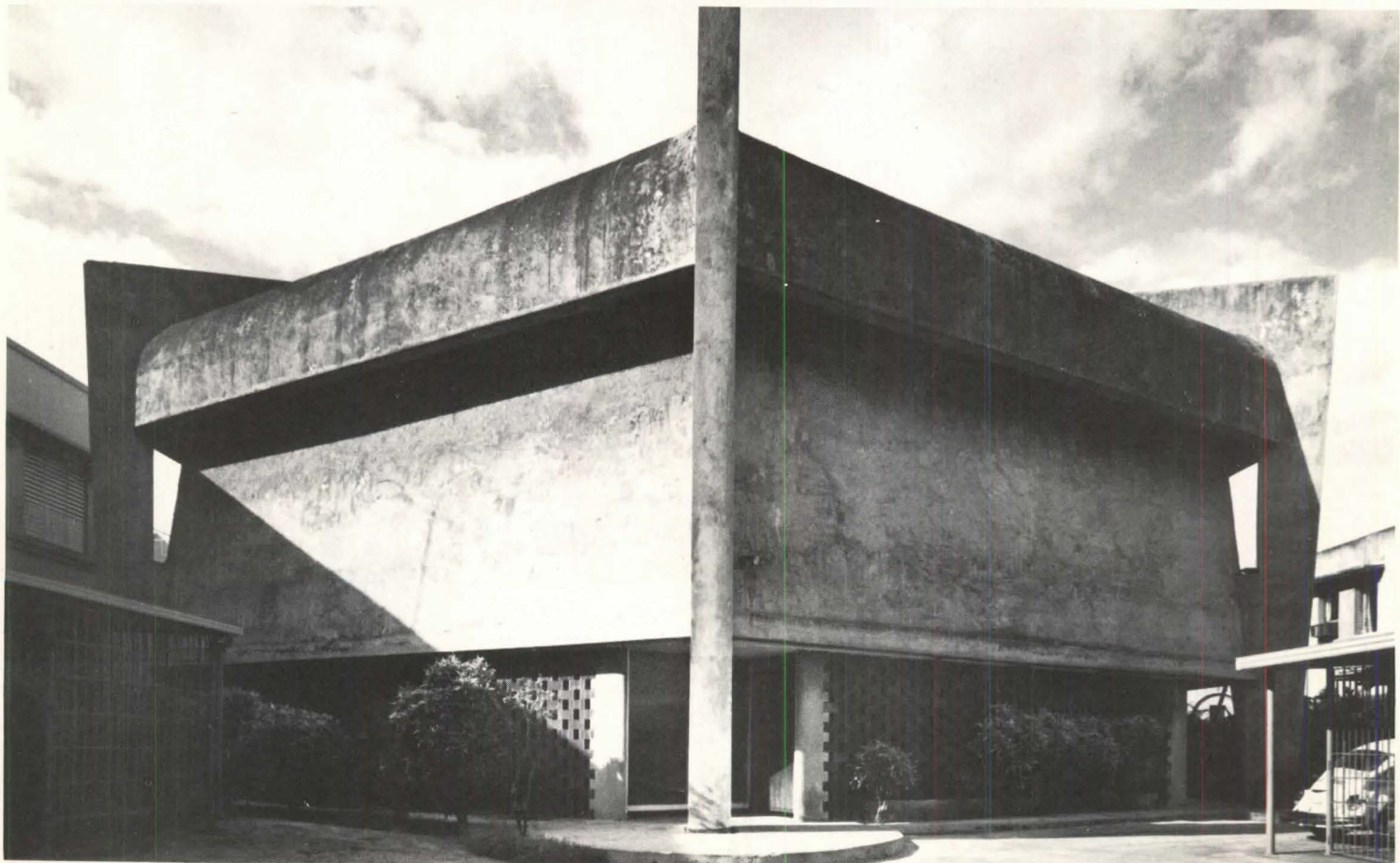
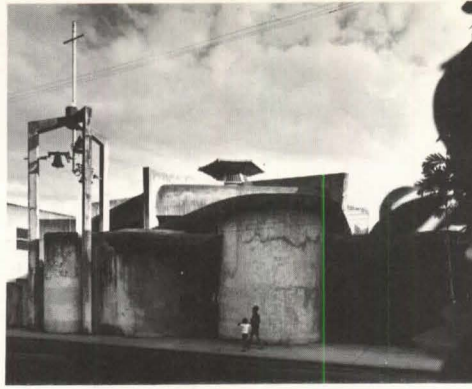
In a humble neighborhood this quiet, dignified architectural statement, which was achieved mainly by the strong use of light and shade, has won, after some reluctance, devoted acceptance by the local congregation.

Henry Klumb's 30 years of architecture are indelible in Puerto Rico. Other architects have utilized world-imported concepts estranged from the mores and culture of Puerto Rico. The sorry results are seen in the high-flung, slick commercial architectural transplants in San Juan.

Klumb, however, has consistently followed his overriding goal of relating architecture to the fabric of the society that it serves. □



The strong, seemingly sculpted form of Del Carmen Church 'is best representative of Klumb's philosophy.'









# The Writings and Sketches Of Matthew Nowicki

Bruce H. Schafer

"We have to realize that in the overwhelming majority of modern design, form follows form and not function. And even when a form results from a functional analysis, this analysis follows a pattern that leads to a discovery of the same function, whether in a factory or a museum. Approached in a certain way, the answer to every architectural problem is flexible space, with no reason why one flexible space should be different from another, and many practical reasons why they should be alike," Matthew Nowicki wrote in an article entitled "Origins and Trends in Modern Architecture," which was posthumously published in the November 1951 *Magazine of Art*.

"In saying all this, I am not advocating diversity in design for its own sake. Such a diversity is just a confirmation of the rule of regimentation that always is the result of a style. The more one attempts

**Mr. Schafer**, an architect, is co-director of federal agency liaison for the AIA. He is the author of *The Writings and Sketches of Matthew Nowicki*, University Press of Virginia, 1973.

to escape one's period, the more one becomes part of it. The constructive diversity that provides strength to an expanding and virile civilization is the result of creative sensitivity to the eternally changing circumstances where 'every opportunity stands alone.'"

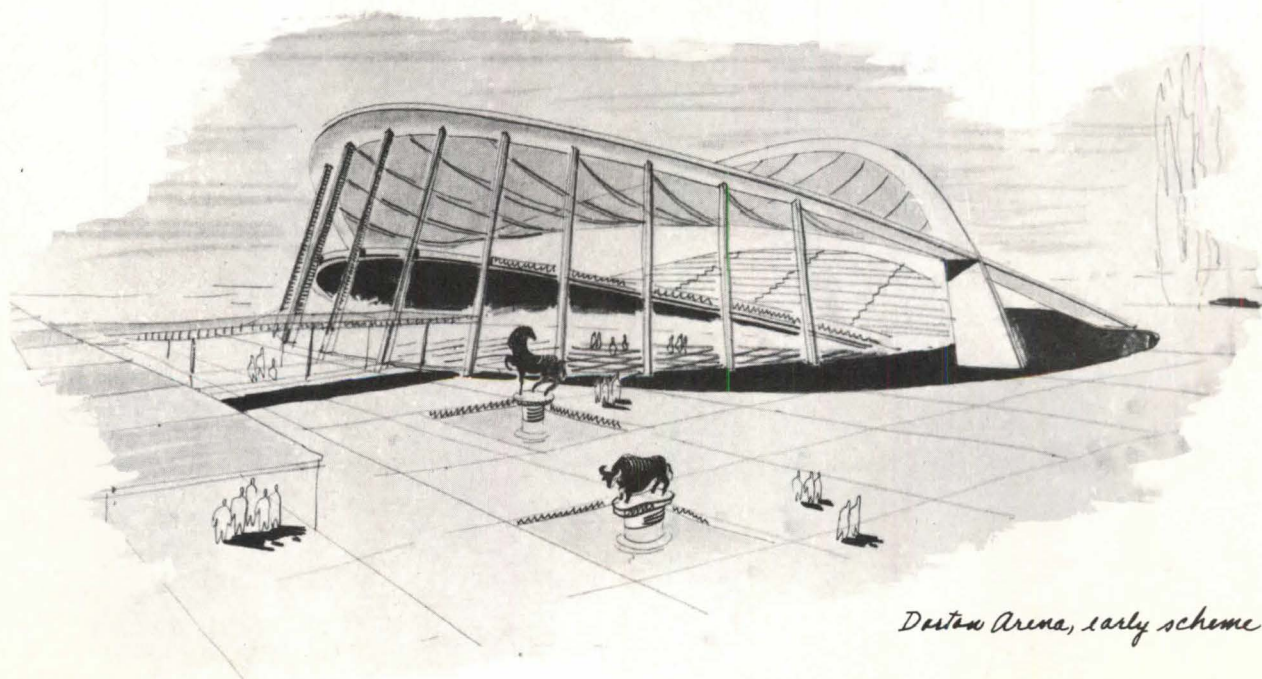
For Matthew Nowicki, the opportunity was never realized. The only record of his architectural career is his writing and his sketches. For the student of architecture, Nowicki's success is indeterminable: The architect's task is three-dimensional and conception never reached fulfillment. Yet, the depth of the pondering and the breadth of the searching hint at his genius; the design philosophy is a synthesis of several major trends in modern architectural thought.

Born in 1910, in Chita, Russia, into a political family—his father was the leader of the Agrarian Party of Poland—Nowicki spent his youth traveling with the family. In 1921, he attended the Chicago Art Institute while his father served as Polish consul general in that city, and on the family's return to Poland in 1925, Nowicki was enrolled in the School of Design at Gerson, in Warsaw. After receiving a master's degree from the Polytechnic of Warsaw in 1936, he remained at the

school as senior assistant in the School of Architecture.

During World War II, the Nowicki family worked in the Polish underground movement. With its end, Nowicki was appointed cultural attaché to the Polish consulate in Chicago, and in 1947, the Polish representative to the United Nations Site and Building Committee. While in New York City from 1948 to 1949, as a consultant to Wallace K. Harrison on the UN project, Nowicki was also employed by Pratt Institute as a visiting critic, and was selected in late summer 1948 to be acting head of the department of architecture at the School of Design at North Carolina State College (now University) by Dean Henry L. Kamphoefner. Nowicki served as a consultant on several major projects while at the school in Raleigh.

In the office of William Henry Deitrick, Nowicki completed sketches for the N.C. State Fair Grounds, the most important element of which was the Livestock Pavilion, now called Dorton Arena. He also sketched the Art and History Museum for the State of North Carolina. In summer 1949, he aided Eero Saarinen at the Cran-



*Dorton Arena, early scheme*



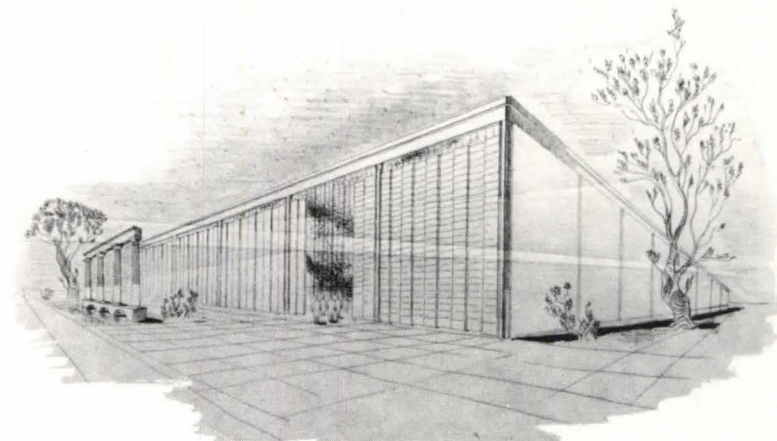
brook Academy on a master plans study for Brandeis University; and he collaborated with Clarence Stein on the New York Columbus Circle project in early 1950. During the summer of 1950, Nowicki was retained by Albert Mayer, of Mayer & Whittlesey, New York City, to begin the firm's study for Chandigarh, the new capital of the Indian Punjab. After he had completed his preliminary study in August 1950, Matthew Nowicki's life ended tragically. On August 31, 1950, a Trans World Airline constellation flight from Bombay crashed in the Nile delta. Matthew Nowicki was dead. What remains, his writings and his sketches, recalls the architectural career of one who searched.

Nowicki, the humanist, called for an architecture that reaffirmed the status of man, the role of the architect as interpreter and translator of man's need into form and of individualism in time and place. Nowicki, the functionalist, sought an architecture as art—a timeless universality expressing all times and places. Nowicki, the technician, envisioned an architecture transcending the scope of the individual, heightening the senses, yet challenging the mind with engineering ingenuity. The sketches, completed between 1948 and 1950, hint at this seemingly disjointed philosophy.

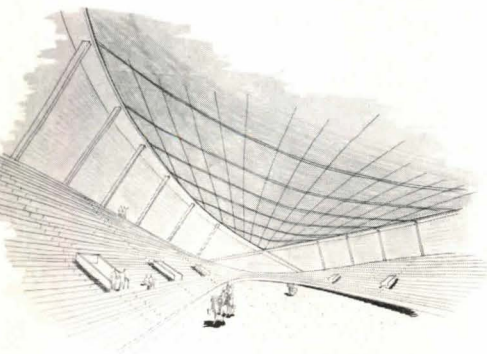
As the humanist, Nowicki wrote of the



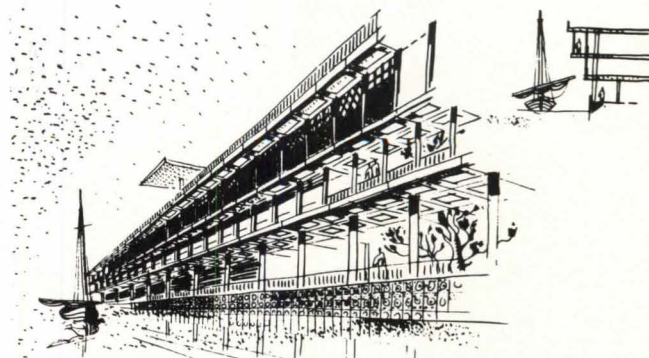
*Art and History Museum, main lobby*



*Art and History Museum, perspective, facade*



*Boston Arena, interior*



*Chandigarh, block structure*



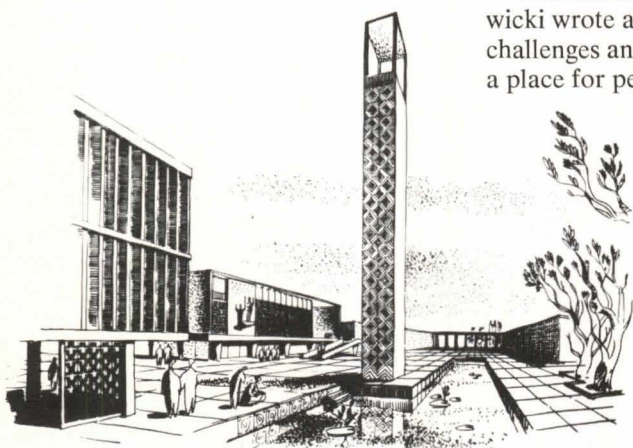
place of man as the key to a modern architecture and of form as an expression of man's environment. The studies for Chandigarh, in which he searched for an architecture and a plan reflecting a vernacularism of the Punjab Province, reflect this idea. In the sketches for the Art and History Museum and for Brandeis University, Nowicki used the module to explore human need. The Brandeis University study exhibits the standardization of the structural component into viable forms manipulated according to human need. Flexibility of function is also the basis for the museum study, for which he sketched a simple, unadorned rectangular enclosure for the exhibition facility: a

structure neither dominating nor reiterating any time or place. In these proposals, functionalism and geometry—constructivism—are the bases for form.

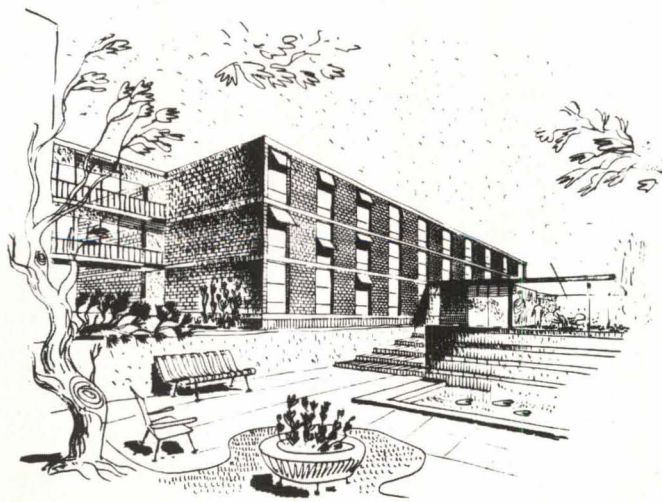
Nowicki's conceptual study for the N.C. State Fairgrounds and for the Livestock Pavilion show him as the engineer/technician/architect. With technical ingenuity, Nowicki sketched the structure as a study in cabled-tension and reinforced compression. The result is a significant development of the hyperbolic paraboloid as structure; the pavilion design alludes to a greater potential for form emerging from the collaborative workings of the architect within engineering technology.

Without much notice or applause, Nowicki wrote and sketched; his searching challenges anew the architect in search of a place for people.

"Man and his way of life become the main source of inspiration to a modern architect," he had written in "Composition in Modern Architecture," in the March 1949 *Magazine of Art*. "Forgotten in the esthetic speculations of the nineteenth century, man, in the basic sense of individual and social character, again became the object of creative attention. Man presented two aspects. The first was the unchanging quality of the human individual, the size of the body, the length of his step and the speed of his walk the same throughout the ages—determine the unchanging factors of scale in architecture, his basic emotions, though changing in form of expression, are as old as the race itself. The second aspect deals with the constant change of human life and the differences that exist not only between generations but between men of different decades. Now this change is rapid and conspicuous, and it demands constant changes in architectural forms." □

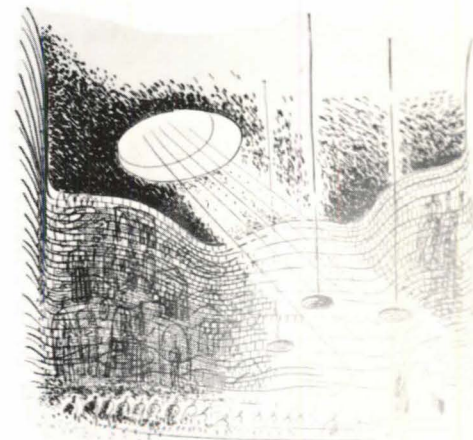


*Chandigarh, assembly hall*



*Brandeis University, outdoor space*

*Brandeis University, chapel*





# A Survey Aimed at Building Bridges Between Education And Professional Practice

C. Herbert Wheeler Jr., AIA

Only a professor who is approaching a sabbatical leave has the time to try to understand the subtle changes that are occurring in professional practice, and only he can ask his friends in architecture and engineering to help him understand the future professional world of 1975-80. Only a professor who attempts to bridge the chasm between education and practice can visualize the importance of such a bridge, and only a professor who has spent years in practice and who is an advocate of the next generation's possibilities can conceive of the new young professional's being educated as a person with management, business and personal capabilities to support his creative design and/or technical capabilities.

Consequently, this professor stuck his neck out and asked the following question of 75 managers of architectural and engineering practices, representing all types and sizes of firms:

"What are the most significant characteristics of professional practice which you think should be brought to the attention of A/E students via the profession and to A/E practitioners via seminars?"

My mailbox was flooded with replies from practitioners who appeared to have been waiting for some time to give their ideas. Perhaps reflecting the nature of the respondents, the most often repeated suggestions focused upon the importance of educating the architect and engineer as a manager—a manager of himself, of his client's project and of the design team.

Reminders of age-old principles of design skills, problem-solving capabilities and technical competencies arose frequently. But the basics of good business capabilities and good communicative skills stressed not only the services of the professional man to his client, but also his leadership in shaping the man-made elements of the world in which we live.

The following suggestions were most characteristic of the response:

**Mr. Wheeler** is professor of architectural engineering, Pennsylvania State University, State College, Pa.

**Creative skills:** "Architects and engineers have a vital role to play in shaping our environment and will continue to have such a role in spite of all the other experts who have moved in on our field. Architects and engineers are needed for their creative role," said John D. de Moll, AIA, a Philadelphia architect/engineer. E. W. Dykes, AIA, of Canton, Ohio, said that the "creative aspect of man has prime importance." H. R. Wismar Jr., AIA, of Cleveland wrote: "Our time as students, educators and practitioners should be spent dreaming and creating what we would like the future to be, then pressing to shape it the way we want it."

**Leadership skills:** "Assume responsibility," wrote Grayson D. Gill, AIA, of Dallas. Neal Carpenter, AIA, of Greeley, Colo., commented pointedly: "We have not established our leadership position as well as we should. We have not become skilled at telling our clients what we can do for them and, as importantly, what we can't."

**Management ability:** Engineer Nick Nicolaides of Miami said that the "main help architects and engineers need today is management control and profit."

**Personal management skills:** Jack D. Train, FAIA, of Chicago said: "The student should be trained to plan his own activities, priorities and scheduling right from the beginning." Eugene Brown, AIA, of Indianapolis wrote that "we should teach that with freedom comes responsibility. Teach students to have self-respect and respect for others, also." Toronto architect Irv Rayman commented that "graduates should know how to keep time sheets and time records and how to use this information to calculate fees for later projects."

**Collaboration skills:** Distinctive of the team approach, cooperation and coordination were stressed as vital aspects of A/E services. For example, consulting engineer A. E. Picardi of Washington, D.C., wrote: "Architects and engineers

have a great deal to contribute. The fact that they must join together as a team to make their contribution is something that we must learn, and I submit that we must develop management concepts in order to make this possible."

**Ability to change:** Jerry K. Nagel, AIA, of Denver offered: "The ability to adapt to change and even to profit from change is the single most important thing that should be brought to the A/E training in addition to the fundamentals." Engineer Lou Guzzi of Johnstown, Pa., said that "these changes cannot be recognized by the faculty unless they are completely familiar with industry or consulting practices." Perry B. Johanson, FAIA, of Seattle said that "there is a great deal of soul-searching among practitioners as to where the changes are leading," and H. Weldon Bender, AIA, of Camp Hill, Pa., remarked that "ability to survive in the profession may well depend upon flexibility in meeting these new challenges."

**Professional integrity:** Recent national developments have focused on this characteristic in professional practice, and engineer William Sowers of Roanoke, Va., advised: "Never become involved in political kick-backs." Grayson Gill admonished: "Practice integrity."

**Drawing skills:** Fearful that educators have forgotten that the A/E should have basic skills of drawing and communication by drawing, Bruce Patty, AIA, of Kansas City, Mo., said: "Draw—draw—draw! The old self-discipline of putting lines down on paper to express the masterful concept." Robert A. Little, FAIA, of Cleveland commented that "it is especially important to develop clear and quick free-hand drawing as a communications tool." Chester E. Roemer, AIA, of St. Louis said: "We need architects who know how to and are willing to draw. Drawing is still the natural tool for architects to design, develop and document their ideas."

**Writing skills:** Ray Zando, AIA, of Charleston, W. Va., said that we should "stress technical writing and reports." Bob Wismar offered: "Learn how to write in a concise and clear manner." Frank



Clark, AIA, of Charlotte, N. C., said that "students should be schooled in the *art* of writing contracts."

**Speaking skills:** Jerry Jyring, FAIA, of Hibbing, Minn., said that the "student should be exposed to developing good public relations techniques, public speaking ability and business development methods." J. H. Lucas, AIA, of Harrisburg, Pa., wrote: "Students should be aware of the importance of being able to write and speak the English language well, as a tool of design." Chet Roemer said that "another important thing for all students is to improve their ability to communicate not only with architects, but also with lay people."

**Appreciation for engineering:** As might be expected, consulting engineer Tom Seckman of Nashville asked that students be given "some understanding and appreciation for mechanical and electrical facilities in buildings."

**Counseling A/E students:** Those who teach often play a very formative role in students' lives, and Ray Zando suggested "counseling of students as soon as possible." He also said that "students must be advised by personnel who can offer proper assistance."

**Outside work experience:** Typical of many suggestions was one offered by Bob Little, who said that "educational programs should include on-the-job or in-office experience as part of the curriculum."

**Early registration:** Cleveland engineer Cliff Baker said that we "should emphasize to an even greater degree the necessity of registration and that one of the requirements for graduation become the passing of the EIT examination" for engineers; similarly, the registration exam should be stressed for architectural students.

**Updating skills:** Several architects brought out that students should be made more

aware that for the professional man practice is an ever-continuing learning process. C. M. Deasy, FAIA, of Los Angeles suggested a "re-examination of the concepts and precepts of the profession," adding that "it would be a good idea if we all did this periodically—by law, if necessary." Neal Carpenter said that "the future practice of architects and engineers is going to be a systematic, government-required updating of skills."

**Basics of professional practice:** John W. McGough, AIA, of Spokane, Wash., remarked that "students should thoroughly understand the basics of professional practice, both historically and currently."

**Energy conservation design:** As might be expected, the greatest number of suggestions centered on the importance of the A/E being well educated in energy conservation, with special regard for building design. Herbert H. Swinburne, FAIA, of Philadelphia said: "Proper design for energy conservation is going to change the face and concept of architecture." Engineer George Barton of York, Pa., said that "energy systems must be the target of our most important thinking."

**Expanded services:** Eugene C. Swager, AIA, of Peoria, Ill., suggested a "course of expanded services in programming, consultation and construction management." R. E. Calvin, AIA, of Wichita, Kans., recommended that educators "formulate guidelines for an additional phase, coming before the traditional five, called 'program analysis.'" Chet Roemer said that "architects continue to expand the type of services that they provide. Students should be more aware of this as it relates to the way that documents are developed. This approach could include pricing package documents, fast-tracking and contractor/developer/architect team."

**Information management:** Mark Beck, AIA, of Baltimore wrote: "More and more, I come to believe that architecture is primarily a business of communication and information processing rather than a profession of design. There is a major shift from the architectural firm being an information producer to being an information manager."

**Resources management:** It was pointed out often that resources are not inexhaustible. John Gilbert, AIA, of York, Pa., remarked: "The A/E of the future must gear all his activities to the intelligent use and maintenance of the resources available to man."

**Documentation management:** Communications via documents appears to be headed for change. Bill Sowers said: "Develop better systems for communicating design to builders in order to reduce A/E man-hours. Production costs in A/E offices must be kept in tow." R. M. Lawrence, AIA, of Oklahoma City said that we should stress "documentation production techniques."

**Design coordination:** Architects often take this capability for granted, but James Hudson, an engineer in Montgomery, Ala., said: "The architect should take the lead in coordinating the contract document. Sufficient time must be allowed in the project schedule to permit this coordination."

**Design and quality control:** Complexity of construction methods and new approaches to construction caused William Grady, AIA, of Dallas to suggest the study of "methods of maintaining design control and quality control of fast-track projects." Engineer Nick Nicolaidis indicated that students should learn to "control quality of product."

**Construction cost management:** This capability is certainly increasing in importance, and Bob Wismar said, "Learn how to 'quantity survey' and estimate costs." Art Friedel, AIA, of Syracuse suggested more study in the field of "cost estimating during design and during working drawings."

**Life-cycle design:** It was Art Friedel who pointed out the new awareness of "life-cycle design," and engineer John Grice of Baltimore said that the philosophy of life-cycle costing "needs more emphasis so that in system and equipment selection it becomes almost a reflex action to consider the total cost—not just the first cost."



## The survey responses comprise a virtual catalog of changes in professional practice.

George Barton added, "Engineering economics should be expanded to include more and better life-cycle cost estimating." He also said that "owning and operating costs have to be more clearly understood and presented in their proper perspective to initial costs."

**Specialization in design:** Bob Little said: "There will be more of the big, comprehensive A/E firms in the next decade," and he suggested "training of students to fit as specialists in a given field." He admitted that "a few students will develop a broad scope outlook; they will become some of the profession's leaders."

**Architects as generalists:** Conversely, Roy Calvin said: "If architects want to be in on the heavy action, they (or their teams) must become pretty fair generalists, who can deal with the question of whether a building should be designed, as well as how to design it." Similarly, Robert J. Wyatt, AIA, of Akron, Ohio, commented: "For the person who is interested in being involved in all aspects of practice and is not interested primarily in building a business empire, there are still many possibilities."

**New techniques and technologies:** Tom Seckman said that "the computer is going to have an increasing impact on all design." Jim Hudson remarked that "students should be given a better grounding in the techniques and the proper use of computers in modern practice." Architect Joe Bogdan of Toronto suggested that students be aware of the "use of photodrafting as a design and working drawing tool," and Gene Brown advised, "Expose the student to new drawing techniques and require research of new methods to produce working drawings."

**Business management:** Carl G. Baker, AIA, of Beaver, Pa., said that "more emphasis should be placed on the business end of architecture. . . . More courses should be offered in the line of financing, general business courses, development procedures, etc." In fact, Glen

E. Cline, AIA, of Boise, Idaho, remarked that "our young people indicated a thirst for the practical everyday business and management experiences." Wally Bruch, an engineer from Minneapolis, said:

"Plan some part of the curriculum around business procedures and financing," and engineer Bob Wilson of Buffalo said that "too many professionals pay too little attention to the business end of the practice and end up in a financial bind." Irv Rayman recommended teaching "the kids to run their practice as a business."

**Development architecture:** Carl Baker said that "development projects are the thing now, and an architect must have the education and ability to put together his own project, discover available and useful land, arrange financing and carry his project through to completion." Architect/engineer Roger Goodwin of Newark reported: "We turned toward development two years ago, and this has been our salvation. . . . A student should be equipped to handle all phases of a project . . . functioning as owner, designer and contractor." Robert L. Richey, AIA, of Harrisburg, Pa., remarked that "a student would be well served by having a worthwhile course in the economics of real estate development."

**Investment management:** Neal Carpenter wanted "architects to become 'investment conscious.'" And when "they become 'owner conscious' of the entire project procedure, they become more credible in the eyes of clients." John Grice stated that the "integration of the architect and engineer as a professional investor member of the project development team" is most desirable.

**Client management:** No subjects were more dynamically suggested than client development, client relations and client selection. Jay Lucas said: "I believe that students need to learn well and thoroughly how to relate any and all presentations to the client's knowledge, interests and viewpoint." Carl Baker commented: "My main point of emphasis is to offer courses to architectural students enabling them to build up confidence in 'selling' their services to clients. These courses might include public relations, marketing,

advertising, current marketing problems, etc." Ed Aotani, AIA, of Honolulu, said that "by making ourselves oriented to client's needs and keeping ourselves flexible, we have more clients than we want."

**New business development:** John Schooley, AIA, of Columbus, Ohio, said about this matter of life-blood importance to the professional that "students should be well advised to become familiar with presentations and sales techniques." Bob Wismar admonished: "Study the marketing of A/E services. A young graduate should have some understanding of this process in order to appreciate its part in an organization." E. F. Gunnill, AIA, of Pittsburgh said: "I'd like to add courses in marketing methods for architects and engineers."

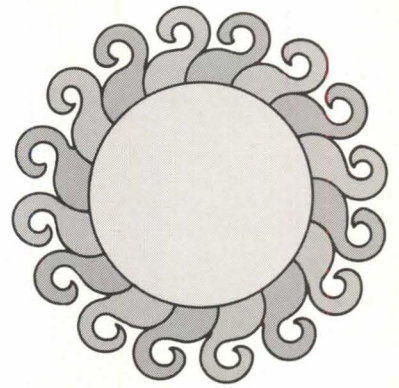
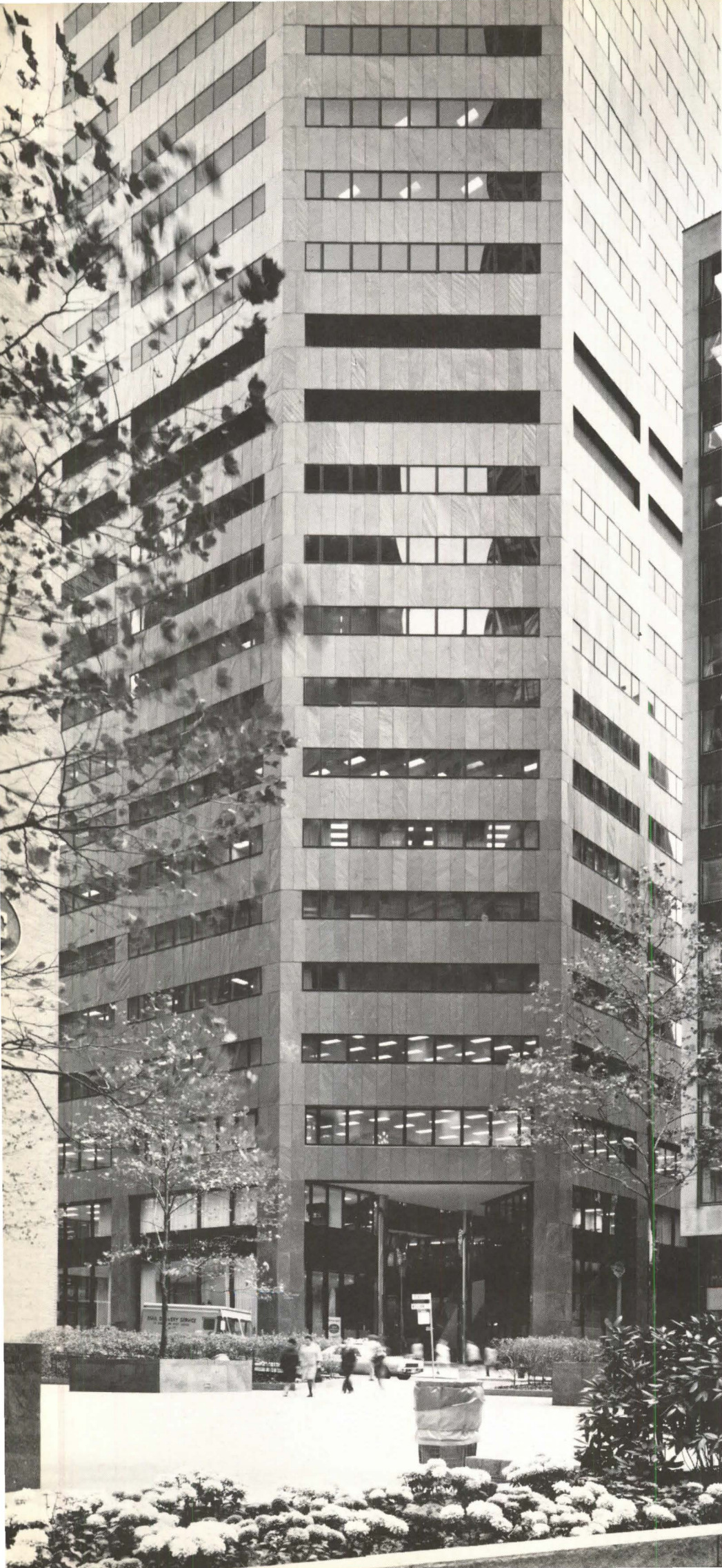
**Compensation management:** Irv Rayman said that students "should learn how to classify overhead costs and apply these costs to fee quotations. The negotiation of fees is an area that is difficult to teach."

**Time management:** Respondents focused on the realization that time budgeting is a must in modern business. Bob Wismar summarized it by saying that students should "understand the budgeting of A/E fees. . . . Be aware that time is money."

**Financial management:** In many ways, practitioners said the problems of overhead, taxes and financial matters should be brought to the student's attention. Engineer Frank Jennings of Binghamton, N. Y., suggested that students have "financial information regarding cash flow and overhead control."

These practitioners were speaking not only to educators, but also to professionals as a whole. The message that this educator derived from the response is one he has been seeking for a long time: The future professional in architecture and related engineering should have not only good conceptual design ability and technical capability, but he also should have capability in personal management, project management and practice management. □





*An ever-changing panorama  
of natural texture changes  
as the sun goes around.  
Truly, the perfect balance  
between architecture  
and nature.*

## **Natural Buckingham Slate®**

**The Award-winning  
100 WILLIAM STREET  
building in Manhattan**

**Architects:** Davis Brody & Associates  
and Emery Roth & Sons

**Owner-builder:** Sylvan Lawrence

**Supplier:** Domestic Marble & Stone  
Corporation

**Photo:** Robert Gray

The fine design of this stately building is well executed in the rich individuality of Buckingham Slate. Fine grained density, hardness and soundness assure unfading permanence. Natural qualities conserve heating and cooling energy... saving big dollars of fuel costs. Maintenance free durability saves even more long-term dollars. Available in both interior and exterior paneling, flooring and paving. Write or call for information or see our catalogs in Sweet's Architectural Files or B.S.I. Stone Catalog.



**Buckingham-Virginia  
Slate Corporation**

4110 Fitzhugh Avenue  
Richmond, Virginia 23230  
Telephone: 804/355-4351

Circle 16 on information card



**FLO: A Biography of Frederick Law Olmsted.** Laura Wood Roper. Baltimore: Johns Hopkins University Press, 1973. 555 pp. \$15.

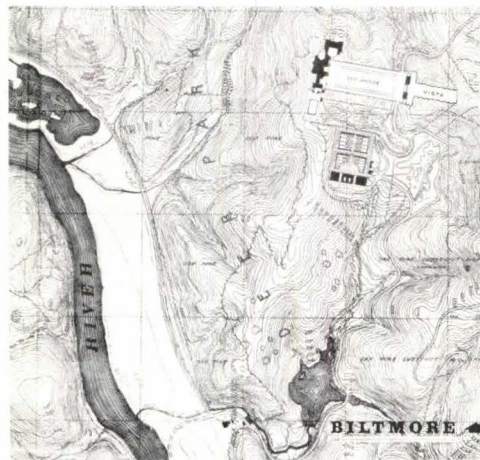
Laura Roper has done for Frederick Law Olmsted what nobody could do for Humpty Dumpty: She has put him back together again. The man who journeyed through the antebellum South and documented the economically wasteful and socially dehumanizing slave system was also the man who later designed and supervised New York City's Central Park. The man who set up a fleet of hospital ships for Union troops was the same man who managed a frontier mining estate in California and first advocated the preservation of Yosemite as a public reservation. At last, with this superb biography, Olmsted emerges as a complete person and, moreover, as a key figure in American history.

Olmsted's life reads like adventure fiction. At a time when travel was slow and difficult, he went just about everywhere, from his native New England, all over the United States and Europe, as far away as China. At a time when disease was everywhere, he and his family had just about everything, or at least enough to make most men stay put.

Considering all that he did, it is no wonder that Olmsted has been studied in parts. Historians, focusing on his travels and writings before and during the Civil War, have recognized him as a voice of conscience and social change. However, they have barely noted his later work, which came to be known as landscape architecture.

On the other hand, design professionals have long admired his landscape achievements, but know him only as the creator of this or that park—perhaps Prospect Park or Belle Isle, Mount Royal or Boston's "Emerald Necklace." Mrs. Roper provides the opportunity to meet all of Olmsted, and to see his works as the realization of social and moral aims which to him far outweighed the artistic.

In today's jargon, Olmsted believed that environment shapes behavior. Pleasant, healthful settings, he felt, could lift the spirits, enhance human dignity and counteract the oppression of hard living,



particularly crowded, tense, urban living. He saw the need for all varieties of recreation. He sought to create civilized communities, distinguished by what he termed "communicativeness." These were his aims when he supervised the gold mines of the Mariposa Estate in 1863 and also, in a very different context, in 1868 when Olmsted, Vaux & Co. planned Riverside, a complete residential suburb outside of Chicago.

It was around these aims that Olmsted oriented his entire career rather than to a specific job or profession. He farmed, he wrote, he published, he constantly sought opportunities for public service, he made money, and more often lost it, and luckily had a generous father bank-rolling him nearly all the while. His landscape architecture practice finally brought him a steady income. Not only did all the career experiences influence his design work, they were a part of it and made it possible. Today's academic/professional training, leading to degrees in architecture, landscape architecture, city and regional planning and numerous specialties, obviously provides a different background. It produces a different professional, whose career is more likely oriented to projects than purposes.

Olmsted's enthusiasm is contagious, and Mrs. Roper could not have captured it if she did not share it herself. She is able to convey it through the text by her scholarly research of Olmsted's own voluminous notebooks and letters, which she has scrupulously footnoted. In fact, her success in exploring him and his work

points up the enormous importance of correspondence. It is worth wondering what kind of personal histories will be derived from people who now communicate so exclusively by telephone.

In addition to his written correspondence, most of which has been acquired by the Library of Congress, Olmsted left thousands of drawings and plans, which remain in his Brookline office. It is unfortunate that the publishers included so little visual material in the book, especially when so much exists, and it would be so valuable. From Montreal to Palo Alto, his plans were rarely executed as he wished, despite his efforts at educating both public and private clients. Preliminary plans, working drawings, old photographs and new—all would have further enriched this volume.

At the peak of his career, Olmsted was a very famous man. Even as a writer, he had gained a sizeable following; as a landscape architect he was a national figure. Why, when we celebrated his sesquicentennial in 1972, had so few people ever heard of him? Why did his fame fade so quickly? In answer to this question, Mrs. Roper suggests that within a short time his achievements simply were taken for granted. Growing up in Boston, I never thought of the ponds and parks as man-made; I was just happy we had them. I think that Mrs. Roper is right. Thanking her for this fine biography, we can now properly thank Olmsted for his remarkable legacy. *Jane Canter Loeffler, AIP Associate, executive secretary for the Olmsted Sesquicentennial, Washington, D.C.*

**The Victorian City: Images and Realities.** Edited by H. J. Dyos and Michael Wolff. Boston: Routledge & Kegan Paul, 1973. 2 vols. \$80.

The cities with which we struggle today are Victorian cities. The better we understand them, the more success we are likely to have in dealing with their social and economic problems, their transportation and planning, their preservation and their architecture and urban design. No better key to such an understanding in humanistic terms will be found than in this handsome, well illustrated, imaginative and



authoritative pair of volumes. Forty scholars in Great Britain and the United States have been marshalled by England's leading urban historian and his distinguished American colleague to explore the most productive themes.

Architects will find the most of direct interest in the two essays by Sir John Summerson and Nicholas Taylor, but it is the panorama of popular life, health, transportation, housing, suburban development, human migration, education and culture and the rich fabric of urban culture that really makes the volumes the masterpieces of synthesis that they are. Taylor's handling of "the sublime" and Summerson's discussion of the architecture of the Victorian city are masterly and fascinating treatments of urban form.

Eric Lampard's introductory essay establishes the chief value of this topic to those who are not professional historians: what it means to the developing world—facing the prospect of 300 cities of a million or more by the end of this century—that must decide whether to accept this inheritance of the Western model of the city or to strive—perhaps at the United Nations meeting in Vancouver in 1976—for some alternative. At most, they could skip over the anguish and turmoil of the Victorian city that is so well described here, and perhaps develop some new alternative urban model. But for that, one needs to know what is so wisely selected and offered in these pages. *Frederick Gutheim, Hon. AIA, planning consultant, Washington, D.C.*

**Chicago 1910-29.** Carl W. Condit. Chicago: University of Chicago Press, 1973. 354 pp. \$12.50.

Chicago has stood out in my mind ever since I was a child in London. My first impression or curiosity derived from the raised printing on the bottom of nearly every American manufactured product reaching Britain: "Pat Pend, Chicago, Ill." I didn't know who Pat Pend was or why she wasn't well. I still don't; but I do know, with this fine volume, how the great city of Chicago was born, what makes it tick and why, in a sense, it typifies America to the outside world. The book is interesting and stimulating, throwing light on problems in our own communities and solutions which we might use to capitalize on the experience of Chicago.

Inexplicably, the title does not adequately describe the contents. The inside is better than the outside. Very little has to do with 1910-29. In fact, it is not until page 89 that the author starts talking seriously about the period beginning in 1910. Before that, Condit reviews the great building eras of Chicago; the urban community founded in 1830 and its incorporation in 1837, to the fire of 1871; the reconstruction of the city to World War I; the boom of the 1920s, and from

## DOORWAY NOTES.

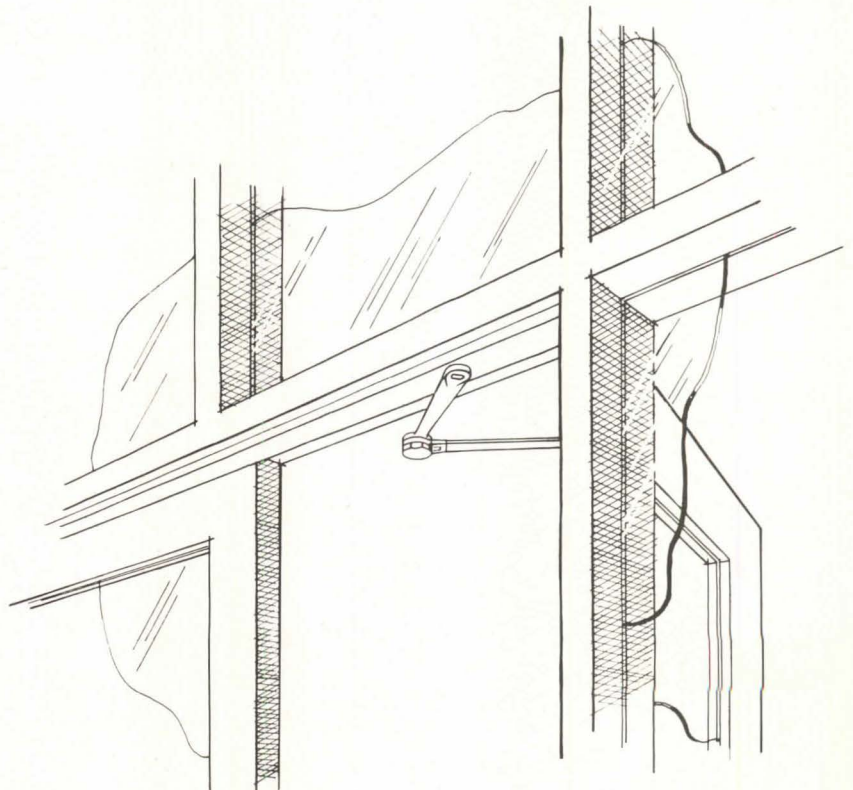
THE LCN 5030 SERIES CLOSER IS CONCEALED WITHIN THE HEADFRAME.

HYDRAULIC BACK CHECK AND ADJUSTABLE TWO SPEED CLOSING PROVIDE POSITIVE CONTROL OF OPENING AND CLOSING SWINGS.

MECHANICAL ADVANTAGES OF DOUBLE LEVER ARM AND ADJUSTABLE SPRING POWER RECOMMEND THIS CLOSER WHERE HIGH WINDS OR INTERNAL PRESSURES ARE ANTICIPATED.

UNIQUE DESIGN INCORPORATES ALL CLOSER CONTROL CHARACTERISTICS, YET FITS INSIDE 1-3/4" x 4-1/2" TRANSOM BAR.

SEND FOR CATALOG. SWEET'S, SEC. 8.



LCN CLOSERS, Princeton, Illinois 61356





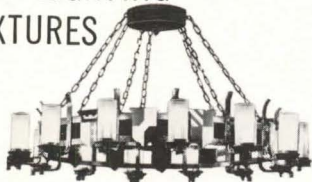




# MEIERJOHAN/ WENGLER

Custom Metalcraftsmen  
for over  
half a century

## ▼ LIGHTING FIXTURES

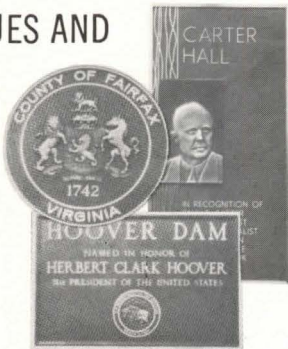


Handcrafted to  
Architectural Specifications



## ▼ PLAQUES AND TABLETS

Creative  
Identification  
Design and  
Fabrication



## ▼ ARCHITECTURAL LETTERS

Custom  
and  
Stock  
Design



## ▼ SPECIAL DESIGN SIGNS



Western-Southern Life

Exacting Specifications  
Honor Rolls / Door and Name Plates  
Literature Upon Request



MEIERJOHAN-WENGLER,  
INC.  
Metalcraftsmen

10330 WAYNE AVE., CINCINNATI, OHIO 45215

1950 to the present. It was in this broad review that I was most stimulated, although it is certainly interesting to explore with Condit the many wonders of the city ("the paradox of brilliant architectural achievement standing by the failure to produce a decent human environment for the majority of its citizens"); the great Burnham plan; the office buildings, civic edifices, universities; the steel frame, etc.

This analysis is significant because, to my mind, it casts light on the growth, problems and solutions of our urban communities today. Condit shows how the geographical factors of water, topography, precipitation and agriculture and the economic and technological influences combined to foster the development of a metropolis. He shows how the horse and pedestrian city of early days gave way in 1860 to the railroad and elevators of skyscrapers, and then to the automobile city beginning in 1920: a lesson for today in our tackling of transportation for urban areas. His recognition of the importance of transportation is stressed by the lengthy chapter on this subject. Yet he does not veer from strict architectural commentary: "The first principle of the steel frame is that it had to be designed in such a way as to satisfy all the economic, utilitarian and environmental requirements of a completed functioning structure."

There is an excellent bibliography, and the references are well documented. It is a scholarly research. Supporting my contention that the title date is rather silly, statistical tables for population, buildings, etc., relate to 1830-1970. Another criticism is that the illustrations are not as clear as they should be. One caption says, "The map shows clearly"—it was not clear to me, and it is a pity because had it been and had the other pictures been of top quality, this excellent documentation of one of America's greatest cities would have almost precluded the necessity of actually going to Chicago to visualize, understand and experience it. *Jeffrey Ellis Aronin, AIA*

**Urban Design as Public Policy: Practical Methods for Improving Cities.** Jonathan Barnett, AIA. New York: McGraw-Hill, 1974. 200 pp. \$15.

Those of us who consider ourselves urban designers have been waiting for a book that describes the urban designer's involvement, hopefully successful, in the development of a major United States city. Jonathan Barnett's book answers this need. His description of the emerging of urban design as a force for city development in New York can serve as an exciting model for other cities. Dallas and San Francisco, among others, remain worthwhile candidates for insightful urban design books.

What Barnett means by urban design

is best illustrated by a listing of the major chapters of the book: 1) Private Enterprise and Public Benefit, 2) Designing Cities Without Designing Buildings, 3) Preserving Landmarks and Ties to the Past, 4) Neighborhood Planning and Community Participation, 5) Helping Downtown Compete with the Suburbs, 6) Transportation, the Urban Armature, 7) Design Review and Environmental Quality. The relationships of the urban designer to public and private decision makers is stressed in each chapter.

Another title for this book could have been "Creative Public Administration." This is the title of the major project being undertaken by the AIA national committee on design. Although we hope to take a more generic approach than Barnett has, the design committee is seeking to study the processes of creative public administration that produces good urban design, not only for large central core cities like New York, but also for smaller cities as well. Barnett is a consultant to the AIA on this program; so his efforts will not end with this exceptionally good exposé of urban design in Manhattan. *Michael B. Barker, Administrator, AIA Department of Environment and Design*

**Architecture for Worship.** Edward A. Sovik, FAIA. Minneapolis: Augsburg Publishing House, 1973. 128 pp. \$3.50.

This is a very timely work. In the preface, the author states: "After a pause following the building surge of the 1950s and '60s, churches are beginning to plan buildings again. It seems proper to me and to many others that they should not simply return to the past that led to some disillusionment and to the pause itself. This book aims to indicate an alternative path."

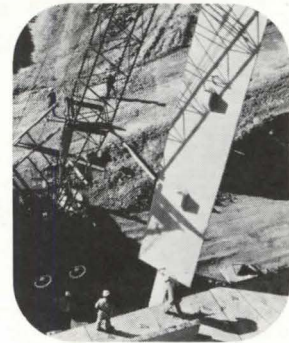
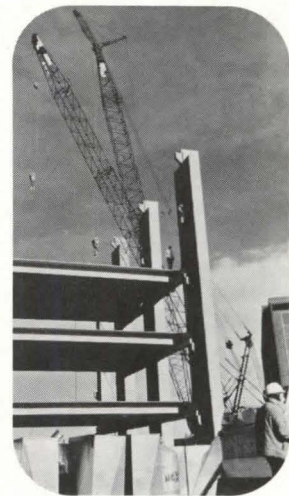
A pervasive theme of the book is integrity through restoration of an elemental sheltering and setting for Christian worship. To establish this, the first three chapters provide scripturally documented historical, philosophical and theological theses or rationale. However, let no one conclude that this is a Fundamental tract! The last two chapters suggest practical contemporary responses and accommodation of these more profound and conceivably startling restatements.

Really, the content should not be too startling to those conscious of the present milieu. Therefore, the book is made more valuable by its synthesizing of the results of conferences, colloquia, diverse publications and sometimes obscure papers which have appeared in the last 10 years. The essence of these studies is to covet for the contemporary worshipper that quality of corporateness in worship and service to the community characteristic of the Christian churches of the first three centuries.

The shelter or scene of their cultic activities was the house. The surroundings



HP CALCULATORS SOLVE YOUR PROBLEMS, YOUR WAY



## Tracking Job Costs On 250 Projects Was A Problem... Until They Got An HP 9830.

Project costs and status reports were always about three weeks behind. Every couple of weeks employee time records were mailed to a service bureau, and about a week later, if all went well, job cost reports were returned. Any errors in the reports meant additional delays.

That was the experience of Wm. F. Freeman and Associates, an architectural-engineering-planning firm in High Point, North Carolina. Then about seven months ago, the firm leased an HP 9830 programmable calculator. Now a secretary can enter and update time records for all sixty employees in about 2½ hours. Then, print project reports *immediately* showing the amount of time and money spent in each phase of each project, the completion status of each job, and the amount to be billed to each client.

Reports are now current and more comprehensive for all of the 200 to 250 projects Freeman Associates handles in various parts of the world. Also, the 9830 provides this consulting firm added computational capability for surveying work, structural problems, in addition to mechanical and electrical engineering design.

There is a good chance that the HP 9830 system can give you a better, faster cost accounting system—and save you money besides. Send in the coupon—and we will provide all the details on the 9830. Or, better yet, we will arrange a hands-on demonstration so you can see for yourself.

094/22

**HEWLETT**  **PACKARD**

Sales and service from 172 offices in 65 countries.  
P.O. Box 301, Loveland, Colorado 80537

Please tell me more about the HP 9830 and your job cost accounting system.

Information only.  Hands-on demonstration.

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_

Zip \_\_\_\_\_ Phone \_\_\_\_\_

Hewlett-Packard Co.

P.O. Box 301, Loveland, Colorado 80537

815A



## YOU MIGHT THINK THAT THE SCHOOLS OF ARCHITECTURE ARE DOING A LOUSY JOB . . .



or you might think that they're doing the very best they can. Regardless of what your opinions are there's only one way to find out for sure and that's to stare us right in the face. You can confirm your suspicions or buoy up your hopes through a membership in the ACSA—which will get you the *Journal of Architectural Education* and the ACSA NEWSLETTER. The *Journal* features breakthroughs in teaching techniques and content, university research, and a variety of comment—not to mention book reviews and conference coverage that takes exception to polite society. The NEWS is a bi-monthly early warning system of events and phenomena related to architectural education: jobs open, grants given, the musical chairs of deanships, "Campus Cartouches," "Back Page," and a calendar of regional and national ACSA events—to which all members are invited. Indeed, as the title implies, this membership is not meant to be passive. You may scream or praise to your heart's content through participation in either the publications or the gatherings. Participating membership is \$20 for the year. If you're a student send \$10 (with a photocopy of your feecard).

OK. You've read this far. That's encouraging. Now let's suppose you *really think* the schools are worth it—and you're willing to publicly say so. You can be a Patron (individual) for \$100 or more—or a Sustaining member (firm) for \$200 or more. Your name (or your firm's name) will appear on a roster in each issue of the *JAE* as witness to your support and you will receive copies of all material produced by ACSA to further clutter up your desk. Not only is it tax deductible but it saves you the \$20 you would have spent on a participating membership. Got'cha. And welcome aboard. We're all architects.

### THE ASSOCIATION OF COLLEGIATE SCHOOLS OF ARCHITECTURE, INC.

1735 New York Avenue NW  
Washington DC 20006

were domestic, for the liturgical action occurred in borrowed hospitable homes. It was *domus ecclesia*, the house of the church, rather than *domus dei*, a monumental house of God which successive centuries saw perverted from a fundamental and a scripturally ordained concept. Sovik quotes Clement of Alexandria (ca. 200 AD): "It is not the place but the assembly of the elect that I call the church."

Sovik traces this concept from Pentecost to Dura-Europus, the earliest known Christian worship structure which was itself actually a dwelling converted to liturgical use. He further delineates the Constantinian influence, the resulting necessity for the sheltering of large groups of worshippers once Christianity became popular by governmental establishment. He traces the further degeneration of tradition to the cult of the martyr adoration and the veneration of relics and the resulting attribution, for the first time, of idolatrous sanctity to buildings. He gives simple explanation and rational suggestion of our contemporary freedom from the emotional dichotomy still so prevalent between the *sacred* and the *profane*.

It is at this point that the work becomes of most significant importance to architects. Response to the thesis of historical and theological integrity demands understanding of purpose and humility in structural interpretation. Indeed, the ultimate would appear to be "no church," but rather a setting, yet to be architecturally stated, in which all "good works" would take place and from which emerge for the fullest expression of the Christian ethic. Ecumenical sharing by all faiths of space in their multiple activities as well as cultic observances is pointed out as a more realizable accommodation to the contemporary role of religious organizations.

The author most pungently, most succinctly capsulizes a valid philosophy of contemporary religious building programming: "Since there are no boundaries between the sacred and the secular in life and architecture of the Christian, all of experience having been seen to be potentially sacred, then all things beautiful may be seen as portals to the transcendent and many works which include no specifically ecclesiastical image may illuminate the religious consciousness. . . . The place which is ultimately faithful to the Christian vision will be one in which the room is devoid of any explicitly cultic images or furnishings. Such a place will be prepared for the event of worship by bringing in and arranging the furnishings and accoutrements of the cult. Such a preparation becomes an event, a part of worship, and there will then be no improper association with worship as a function of place or images or things."

These thoughts give small comfort to



those ambitious pastors who would leave behind them a monument to their ministry; they will be equally unsavory to those congregations who are insistent on preservation of a community status image of Cadillac edifices; the idea is devastating to those hucksters who have palmed off meaningless, tasteless impedimenta in the ecclesiological name of "mood creation"; it will require that architects demand of their clients a *program*, not some vague suggestive reference to an architectural tour-de-force.

The book, while necessarily preoccupied with historical and theological rationalization, does not overlook the practical. The realities of tradition and the insistence of *morés* are recognized and sympathetically discussed. Furnishings and furniture are fully covered and, consistent with the thesis, are treated as movable articles of accommodation of the liturgies. Yes, even flowers and candles and hangings are not only discussed as to contemporary relevance, but there are also helpful, although somewhat indulgent, suggestions for present day practice.

Consistent with its theme, the book is honestly manufactured, simple, pocketable and nonmonumental, save in content. There is a great need for this book to be read by architects. Most important, it must be read by ministers, building committees and, indeed, the congregants. It is unusual and is best described as a stimulating and deeply expressive meditation of one of obvious religious commitment who happens to be one of our distinguished designers. This rare combination has produced a needed and worthwhile work. *Milton L. Grigg, FAIA*

**Seattle Cityscape #2.** Victor Steinbrueck. Seattle: University of Washington Press, 1973. 112 pp. \$10.

On the surface, this book appears to be just another sketchbook that design professionals are so prone to produce. But it becomes apparent to anyone who knows and loves Seattle, including this reviewer who lived there for nearly 10 years, that Steinbrueck has a keenly perceptive eye and pen, and the brief text which accompanies each sketch or series of sketches is on the same par.

As the author, a professor of architecture at the University of Washington, points out: "This is a sketchbook, an effort to communicate one concerned observer's idea of the city. It does not attempt to give answers, but, by showing the way things are, it does indicate problems; and perhaps the delineation of some of the city's positive qualities does suggest solutions." In this regard, *Seattle Cityscape #2* has something to say to architects, urban planners and civic leaders everywhere.

Steinbrueck has that unique capacity to

look at a building or a particular feature, such as Lake Union which is just a stone's throw from downtown, and analyze it in the minutest detail and at the same time relate it to the total urban scene. Of course, he doesn't like everything he sees—far from it. And some of his comments are bound to cause a few sparks to fly among his colleagues. For example, he refers to a number of major structures as being "overpowering," "sterile," etc.

It is a bit annoying that the author is inconsistent regarding the identification of the designers of the projects he includes in the book. If there is any other fault, it is not in the content but in the format. Although the varying sizes of the sketches make for an interesting book, the placement of the text and the necessary changes in width to accommodate the art seem awkward at times.

Be that as it may, it is interesting to note that Steinbrueck begins with a wilderness area a little more than an hour from the city itself and closes with Mount Rainier, explaining, "For many its reality is a symbolic reason for living in Seattle." What he illustrates and writes about in between adds up to the message that although its natural amenities are unrivaled by any other metropolis in the U.S., Seattle has not realized her potential as the "most livable city in America." *Robert E. Koehler, Hon. AIA*

#### **Going Metric: An AMA Survey Report.**

Alex Groner and George A. W. Boehm. New York: AMACOM (a division of American Management Associations), 1973. 38 pp. \$7.50.

This booklet is a research paper based on a thousand questionnaire responses from executives of companies in many fields plus interviews with public and private officials in the U.S. and in recent metric countries. A few large U.S.-based multinational companies (as GM and IBM) are now converting to the international metric system (SI) voluntarily. Most other respondents indicated a readiness to begin an effective conversion program on short notice. Those with metric know-how tend to believe that conversion problems will be minimal, and many favor a short and positive conversion period.

For fast reading, the booklet's first four pages present highlights of the author's research and conclusions on the need for a decisive program for planned metric conversion. A following historical section briefs the search for a simple language of weights and measures in the U.S. and our response to the British changeover. Congress is still debating the issue.

One section covers a little on other countries' experience with metric conversion, including origination of the metric system in Napoleonic France. This discussion is all too brief. Another section

reports statistical data from the survey, indicating that products used by the construction industry are the most "measurement sensitive." Architect readers would find this part to be a bit boring, as construction is only mentioned in passing.

The final section provides suggestions for smoothing the road to metric usage. The difference between "soft" conversion (merely changing numbers) and "hard" conversion (changing product sizes) is touched on, with an indication that the latter process can produce many positive benefits via "spring cleaning." Meeting conversion problems, cost estimates (pro and con), awareness versus education and antitrust concerns are covered.

My assessment of this survey report on going metric is that it has some use in providing the casual reader with some generalities on the subject, though at a relatively steep price. For those who will be seriously involved in providing leadership in metrication and in working out the all-important details, the report is too shallow to be of much use. The main benefit of the booklet is as an awareness document. *Robert Allan Class, AIA, Director, AIA Technical Programs*

**1% Art in Civic Architecture.** RTKL Associates Inc. and Bennard B. Perlman. Baltimore: RTKL Associates, 1973. 48 pp. No price given.

Baltimore has spent more than \$1 million over the past nine years on nearly 150 commissions of art to be incorporated into its civic architecture. This report by the architectural firm of RTKL Associates Inc. and by Bennard B. Perlman, who has served on the city's Civic Design Commission since its inception, was supported by a grant from the National Endowment for the Arts. It tells of Baltimore's experience, but it goes much further than this with chapters on the need for art in architecture, the formulation of community art legislation, the operation of the 1 percent-for-art legislation and the criteria to be used to implement an art in architecture program. The report will be of great assistance to any city or town that is contemplating such a worthwhile program. It is handsomely illustrated with examples of the art associated with Baltimore's civic buildings.

**The Vanishing Depot.** Ranulph Bye. Wynnewood, Pa.: Livingston Publishing Co., 1973. 128 pp. \$20.

Now that railroad stations are rapidly disappearing in this country, there has developed an increased awareness of the uniqueness of this building type. There is legislation proposed to promote their reuse, and a society exists to record their history.

This book offers a record in yet another form, that of the painting. With over 90



pictures, of which more than two-thirds are in color, there is a wide variety of stations, as well as some related railroad structures. Some are still in use, some stand idle and some have disappeared completely. The examples are from the Northeastern states, primarily Pennsylvania and New Jersey, although the artist has ranged from New Hampshire to West Virginia.

The structures that the reviewer knows personally bring back memories; most of the others recall similar scenes. Although possibly lacking some of the exactitude of the photograph, these paintings have a charm which would, in many cases, be difficult to capture effectively, if at all, in a photograph.

This is a different but attractive book to add to the gradually increasing literature on the railroad station. *George E. Petten-gill, Hon. AIA, Librarian Emeritus, AIA.*

**Fire Safety in Buildings: Principles & Practice.** G. J. Langdon-Thomas. New York: St. Martin's Press, 1973. 296 pp. No price given.

In 1970, fire losses in the United Kingdom amounted to 111 million pounds; yearly, about 900 lives are lost in fires. For many years now, there has been a steady increase in annual fire losses in many other countries as well.

This book, written by an English architect, is directed toward lowering the appalling figures in loss of life and of property. It contains a great deal of pertinent information that will help American architects in the same worthy task. There are chapters on such topics as the general principles of fire protection; materials; active fire precaution; means of escape; and fire planning and its influence on design. There is a chapter as well on the application of the principles to specific building types: multistory parking facilities; computer installations; town centers; pneumatic structures; and high-stacked storage warehouses. The appendices cover technical design data.

**Tight Spaces: Hard Architecture and How to Humanize It.** Robert Sommer. Englewood Cliffs, N.J.: Prentice-Hall, 1974. 150 pp. \$6.95.

Because of a national passion to gain security through steel, concrete and electronic equipment, the prison has become the model for housing projects, office buildings, parks, airports, factories, college campuses, etc., etc. Psychologist Robert Sommer writes here for both the architect and the layman about how buildings can be humanized. It's good reading, and he makes points with drive and wit.

By "hard architecture," Sommer means such things as prison fixtures in park restrooms, concrete picnic tables cemented into the earth, guarded cities of suburbia,

windowless concrete buildings, TV cameras everywhere, triple-locked doors, sterile campuses, airports that discourage contact with one's fellow travelers, impersonal and institutional design for classrooms and campuses. The prototype of hard architecture, he says, is the strip cell in a maximum security prison containing nothing but reinforced concrete poured over a steel cage.

From the standpoint of economics, esthetics and human dignity, this hard architecture won't work. So what's the solution? Reverse all this and make buildings more responsive to user needs. Let people put their own imprint on their surroundings; work with people rather than against them. Focus on the causes and not the results of the ills of society.

Readers who liked Sommer's article titled "Equal Time for the User" in the May 1973 AIA JOURNAL will be pleased to know that the book contains an enlarged version of the article.

**Architecture and People.** Eugene Raskin, AIA. Englewood Cliffs, N. J.: Prentice-Hall, 1974. 191 pp. No price given.

This book of essays by a member of the AIA, who is adjunct professor of architecture at Columbia University, will help the layman understand the architect, his problems, his responsibilities in society. Raskin also gives his fellow professionals much to think about as he covers such things as ethics and moral choices, the architectural temperament, the language of architecture, architecture as human environment and the practice of architecture. Raskin has a deft and witty touch while writing about some of the most basic societal problems and the way in which architecture is related to them.

A couple or so of Raskin's aphorisms give the flavor of the book:

"To be an architect is, in a way, to be like a priest; the rewards, if any, are likely to be largely spiritual."

"The old saying, 'Two heads are better than one,' holds true as long as the two heads are not on the same body." (This in connection with architectural teams.)

"Calling it the 'Mother of the Arts' indicates an assumption that architecture is female; it is therefore not surprising that, like all females, she is reluctant to be seen in public unadorned."

"The acoustics of a railway station or air terminal are so much like those of a cathedral that when one sets out on a journey one automatically feels that one is in the hands of God."

**Mortgage on America.** Leonard Downie Jr. New York: Praeger, 1974. 243 pp. \$7.95.

"Every day rules are stretched, laws broken and the public good ignored in the headlong race for real estate profits,"

writes Downie, who is deputy metropolitan editor of the *Washington Post*. He is indignant about mortgage gouging, development rip-offs, slumlords, cheap and sprawling suburbs, fraudulent "vacation and retirement home wastelands" and all the other land misuse and abuse. He names specific people and companies (including federal agencies) who practice "exploitive real estate speculation."

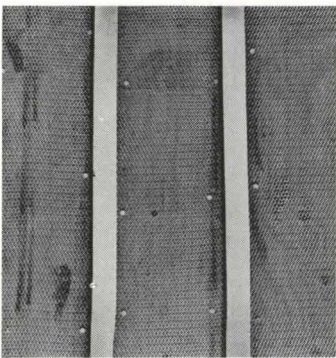
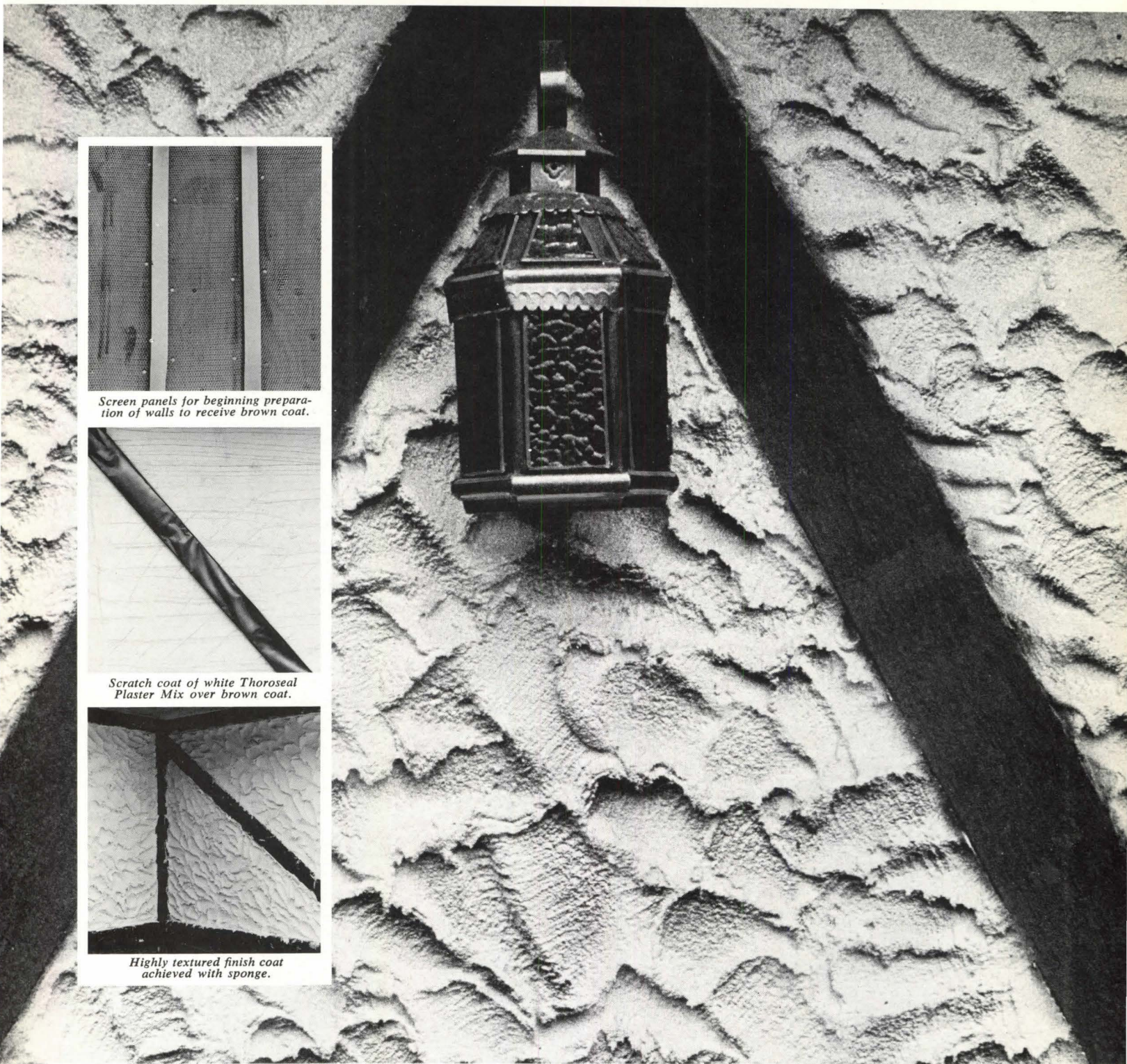
Downie calls new towns a "hoax," writing that they are turning out to be "neither very new in concept nor good examples of complete communities." Even the best of them resemble "large-scale suburbs" and perpetuate their mistakes, "wasting more land and further polluting the environment." He views the Department of Housing and Urban Development's new town program as an "acute embarrassment for a nation with the wealth, daring, technological ability and political determination to put men on the moon."

Downie compares planning in this country with that abroad and urges Americans to "ignore the carping of real estate industry spokesmen who use the shortcomings of foreign experimentation to justify inaction here." He makes some specific suggestions as to the way "destructive real estate speculation" can be reduced, such as the purchase outright by federal and state governments of important and threatened natural areas; prohibitions against razing and redeveloping healthy old city neighborhoods; tax reforms to take the windfall profits out of real estate speculation; creative zoning to ensure more imaginative construction; public land-banking; and greater integration of housing, commerce and community activities. There's no doubt that the book will make many people angry; others will think that it is long overdue.

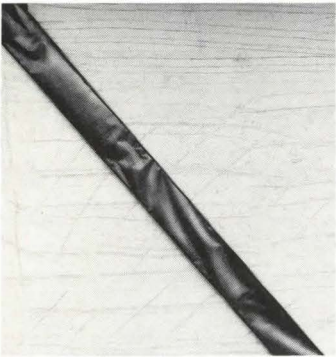
**Time-Saver Standards for Architectural Design Data.** 5th edition. John Hancock Callender, editor-in-chief. New York: McGraw-Hill, 1974. 1042 pp. \$27.50.

Architects and other professionals have used this classic reference book for years to help solve problems of architectural design. Now in a fifth edition, the workbook has been completely revised by 46 experts to give current data on such topics as suspension structures, steel domes, prestressed concrete, design loads, hardware, escalators. Among the new subjects not covered in previous editions are industrialized building systems, design data on earthquake loads, deep longspan steel joists, engineered masonry, waste disposal systems and reflective coated glass. It is divided into four major sections: basic data; structural design; building materials, components and techniques; and environmental control. The last section includes data on fire protection, fallout shelters and design for the handicapped.

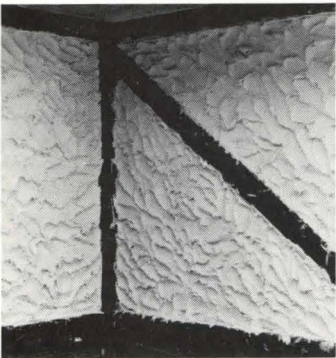




Screen panels for beginning preparation of walls to receive brown coat.



Scratch coat of white Thoroseal Plaster Mix over brown coat.



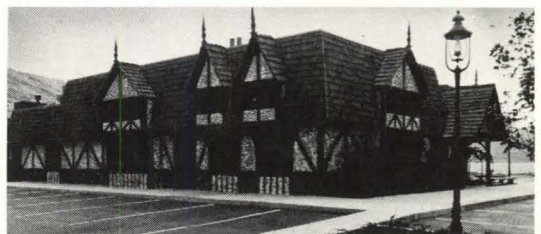
Highly textured finish coat achieved with sponge.

*Steak & Ale, Pleasant Halls, Pittsburgh, Pa.  
Arch.: Max Chapman, Inc., Dallas, Texas; Contr.: C. Rose Plastering Co.*

## **Heavy, rich-textured finish lends the warmth of age**

***Created with THORO SYSTEM PRODUCTS; it is crackfree, carefree and waterproof.***

The rustic charm of an old Tudor inn brought up to date in a restaurant for today. Here achieved through ingenuity of design and the use of modern miracle products—Thoroseal Plaster Mix (plus Acryl 60), a super bonding agent. First, a brown coat of sand and cement plus Acryl 60 on all required wall areas, then a scratch coat of white cement-base Thoroseal Plaster Mix plus Acryl 60. The heavily textured finish coat of regular Thoroseal Plaster Mix plus Acryl 60 was achieved by the use of a sponge. Result: no cracks, no checking, no crazing!



**S T A N D A R D D R Y W A L L P R O D U C T S**

**DEPT. 74-AJ-3 • 7800 N.W. 38th ST., MIAMI, FLORIDA 33166**



# Pleasant under glass.



## Bring the great outdoors indoors with Lord & Burnham glass enclosures.

There's something special about the pleasant living or working environment created by the addition of a glass enclosure. Whatever it's used for, solarium, skylight, greenhouse, living room, working or recreation area, Lord & Burnham glass enclosures add an extra, functional dimension to *any* design, any building application.

Lord & Burnham has been involved in the greening of American architecture for more than 117 years, so we speak your language when it comes to cost control or custom designs. And while a glass enclosure is pleasant for your clients, we go all out to make your planning pleasant by providing complete architectural consultation services at no extra cost.

If you'd like to see some recent examples of our work, just look us up in Sweet's (13.7/Lo) or for complete information or consultation, at no obligation, write or call your nearest district office listed below.

### Lord & Burnham

Irvington-on-Hudson, N.Y. 10533



CALIFORNIA Hayward 94545 / (415) 782-6236  
CONNECTICUT Cheshire 06410 / (203) 272-5321  
ILLINOIS Des Plaines 60016 / (312) 824-2181  
MASSACHUSETTS Belmont 02178 / (617) 484-2716  
NEW JERSEY Cherry Hill 08034 / (609) 795-3434  
NEW YORK Irvington-on-Hudson 10533 / (914) 591-8800  
NORTH CAROLINA Saluda 28773 / (704) 749-3091  
OHIO North Ridgeville 44039 / (216) 327-5622  
CANADA St. Catharines, Ontario / (416) 685-6573

## LETTERS

**Louis Kahn in Iran:** One of Louis Kahn's last trips abroad before his death in March was to Iran, where he and Kenzo Tange were preparing to design a 12,000-acre new town in the heart of the capital city of Tehran. During that visit in February, it was my pleasure to spend several hours with him in absorbed conversation. I came away inspired and happily impressed that the man was equal in stature to his buildings.

Now that he is gone, the memory of that meeting takes on added poignancy—not simply because he was one of this century's greatest architects, but because it was an opportunity to know a man with tremendous sparkle and contagious enthusiasm.

He spoke in epigrams of the sort that made you wish for a tape recorder. Many of his phrases were sharpened and polished with frequent use. Two of his favorites are particularly appropriate to Iran's arid desert culture and an indication of his philosophical affinity with this part of the world: "The sun never knew how great it was until it hit the side of a building" would have fit in well with sun-and-shadow-oriented Persian architecture. "Ask bricks what they want to be and they'll say, 'Make us an arch.' Try to sell them a lintel and they'll still say, 'Make us an arch.'"

The charm of the man, though, was not so much his succinct phrases as his unassuming manner and intensity. Voluble and outgoing, he would come up to people with hand outstretched and disarmingly say, "Hello, I'm Louis Kahn," as if he were the grocer down the street, and you might just not remember his name. When he started to talk, his exuberant concentration transformed him so that you no longer saw the thick glasses and the terrible scars suffered in a fire when he was a child. He became radiant, the personification of mental animation, sitting hunched over with his hands clasped and building his words smoothly until he had constructed the perfect expression of an idea. Then sometimes he would stop to interject, "I just thought of this," so that you could witness the man's act of creation in his speech.

He listened with an uncanny concentration as if every fold of his creative brain were attuned to your words. When he asked about the use of water in Iranian culture or the place of "strolling" in the society, I felt that I should answer him with every possible bit of information, reaming out my mind to yield grist for his creative mill. After he had asked me endless questions about Iran's culture as it is expressed in architecture and the use of spaces, particularly of public spaces, out-

came the humility that marked his greatness. "When we've brought our plans to the place where we're proud of them ourselves," he said, "it is architects like you—sensitive to Iran and its culture—that I'd like to give us their critical views." It was a simple statement, not intended as a compliment, but I was honored.

And Kahn liked to claim that he himself had been made with a little Persian blood mixed into his Russian ancestry. Intuition and the "feel of a place" were important to him. It made sense, then, that he should say, with reference to Iran, "I've always had an affinity for the desert."

We talked about the possibility of Iran's architects developing their own contemporary Iranian design idiom, and I described how Iranian architects who have studied abroad and returned argue with those who have been trained in Iran about which group is more sensitive to cultural roots. Kahn immediately pointed out that it is not a group or a school or a committee which leads the way. It must be one creative individual with the strength of leadership who can evoke in all a sense of "yes, this is right."

He said that what is constantly being sought through different design approaches is the "commonality" of architecture—that which all can accept as being a true and valid expression, even though it may be clothed in different forms. "The rules can be changed but not the law, for it is only the rules that are made by man." Kahn had made some beautiful rules in his lifetime.

When we said goodbye, he clasped my hand for several minutes as if the conversation were continuing through our fingertips. It was a long handshake. I didn't know that it would be the last one.

Moira Moser-Khalili, AIA  
Tehran, Iran

**Antiquated Technique?:** A uniform system for working drawings is long overdue, but the means proposed by the AIA Task Force #1, Committee on Office Practice, in the January issue is a nonsystem and an antiquated process in an age of manual and machine systems utilization. What the task force proposes is largely a dead horse that promises little for a fast track. The "system" does not meet the yearly emerging needs of a changing industry—changing not only in the complexities of building construction and its technologies, but also in the administrative operations that affect the whole building process.

What is needed is a system that will not only accommodate the prime purpose of communicating design and construction contract intent, but also the processes that must generate it and the operations that must utilize it before and after construction. Such a system should also effectively expedite the change of its information to



facilitate the administrative procedures of project development, management, financing, utilization, maintenance and energy and materials conservation.

The miscellaneous elements proposed by the task force bear no family resemblance to one another or a relationship to a unified ordered whole. Where is the system? Where is the uniformity? What is the relationship of these elements to the specifications, the conditions of the contract, the processes of their generation, reproduction, distribution, utilization, etc.? Why is such a formidable list of abbreviations even necessary? Who really prepares this, adheres to it, practices it, monitors its use, updates its entries and checks on its validity? If a project is well designed and documented, this kind of thing is superfluous to good practice, and the crutch of its existence is ridiculous.

Similarly, the proposals of finish and door schedules are short-sighted, inadequate and poorly located. They would be better placed in Division 9 and 5 respectively (UCI format) of the specifications, as are other lengthy schedules like finish hardware and painting. This would save considerable space in the drawings, sensitized paper which is rapidly becoming critical and the cost of reproduction by offset lithography. Their use would be enhanced because the book could be opened on the plan, and the size of the project would not be dependent upon this notion of fixed ad-

gency. The schedules as proposed are also needlessly wasteful of sheet area and could be designed to completely fill each matrix position instead of the occasional locations of the proposed method. These are only a few simple proposals that *can* be done now and *should* be done to lend to more viable and eventually automated systems.

It is time to really start working on a "uniform system of environmental information for facility development"—not a uniform system of working drawings. Construction graphics—not working drawings—would be but a component of such a system. By its own admission, the task force didn't even look beyond its own backyard ("the majority of firms"), and I really question that it did, with all due respects to activities of the professional practice overseer from the laurel valley. Why didn't the task force look into what other industries are doing with their manufacturing information? What does the communication science industry have that could facilitate our needs? Or the automotive and aircraft industries? Believe it or not, quite a bit.

It can be agreed that a uniform system—and science—of construction communication that can serve large and small practices and projects alike is needed. Such a system would admit the utilization of a variety of media in the execution and transmission of construction information,

including manual, audio, photographic, videographic, electronic, etc.

What is not needed at this time is a freezing of an antiquated technique based only on the flimsy criteria of what the stagnant majority is using now and the evaluations of a small task force. Before any such momentous proposals are made, there should be a structured span of events over a two-year period with two or three articles on the subject in the AIA JOURNAL, followed by national symposia at conventions and a call for papers.

This in no way is to fault the activities of the task force. What its members have done is a brave task that should have started at least 10 years ago with the Construction Specifications Institute working in parallel on a correlated system. The work of the task force as presented now is too premature, insufficiently developed and inadequately based to be proposed as a viable national standard.

*Denis Charles Schmiedeke, AIA  
Ypsilanti, Mich.*

I have read with interest Denis Schmiedeke's comments on the uniform system for working drawings. What he says really hits the nail on the head. He says in a more emphatic way items which I find in notes of the 1973 activities of the task force.

The most important part of the article in the January issue is not the abbrevia-

## Questions about Your Subscription

To insure fast service on inquiries concerning your AIA JOURNAL subscription, please include the address label from the most recent issue received.

## Change of Address

Four weeks' notice required for change of address. Include address label from most recent issue and new address information in space provided below.

## NEW SUBSCRIPTION

Please check here if you wish subscription rate information.

Name \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_  
State \_\_\_\_\_ Zip \_\_\_\_\_

MAIL TO:

AIA JOURNAL  
Circulation Dept.  
1735 New York Ave., N.W.  
Washington, D.C. 20006

ATTACH  
LABEL  
HERE

## KEEPING WATER OUT . . . THAT'S OUR BUSINESS

Waterproofing systems are Carlisle's business. Foundations, lab rooms, parking decks, plazas, pools, malls, bridge decks, subways . . . wherever there is moisture and the structure requires a dry condition, there is a Carlisle system to provide architects and contractors with a positive answer.

. . . and there is a Carlisle engineer to provide technical assistance.



- Sure-Seal Butyl Membrane
- Sure-Seal E.P.D.M. Membrane
- Sure-Seal Neoprene Membrane
- Liquiseal Liquid Membrane

**Carlisle**  
ELASTOMERIC MEMBRANES

Construction Materials Department  
CARLISLE TIRE & RUBBER COMPANY  
Division of Carlisle Corporation  
P.O. Box 99, Carlisle, Pa. 17013

**CARLISLE**



tions or symbols or schedules but this statement in the third paragraph:

"The construction documents are of utmost importance to the building process, but they bear the same relationships to the architect/engineer's actual services that the physician's prescription and the lawyer's brief do to their professional services. Producing the documents—communicating design decisions—generally requires approximately twice as much real time and money as the design process—the professional services—*itself*."

When this project began, the task force found itself faced with two tasks: first, defining what *can* be done, and second, defining what *should* be done. We *can* make our present methods of producing documents more efficient. We *should* be looking for better methods of communicating our designs to those who construct these designs. The bulk of the article concerned itself with those things that can be done by existing offices, with existing procedures and existing equipment.

The "what should be done," or "blue sky," part of the task is tougher. Just listing the questions is difficult. And finding answers—well, we're trying. Our present intention is to concentrate on this area, to continue gathering information on new systems of communicating construction information, to propose new systems and to set up means to evaluate these systems. This is a major project which requires the efforts of not only this task force but also of the entire construction industry.

The article has generated a number of other letters and telephone calls. The comments are almost evenly distributed among the abbreviations list, materials designations, graphic symbols and schedule formats. The comments that we have received will be evaluated and answered. Certainly, the system as now proposed will change as we receive more input.

Meanwhile, architects are urged to put the recommended standards into practice and to communicate their experiences to the task force. *Robert D. Holsaple, AIA Chairman, Task Force #1 Knoxville, Tenn.*

**On the Trek:** The theme of the February issue on the environment, ecology and energy was timely and informative. But I was disappointed not to find the League of Women Voters listed in the "Who's Who on the Environment Trek."

The league has been for many years one of the most active organizations in the country to work for clean air, clean water and all the other important environmental issues. Its members studied and actively supported legislation for a better environment long before these issues became popular causes. Concerned members have worked on the national, state and local levels and have published many in-

formative publications that are available to the public.

I am the wife of an architect and have been an active member of the MECCA League of Women Voters for several years. I have always thought that the AIA and the league have shared common concerns and goals. In the Portland area, the two groups have worked together on several projects and concerns.

Please add the name of the League of Women Voters to any future listing of organizations concerned with the environment. Its national address is 1730 M St. N.W., Washington, D.C. 20036.

*Mrs. James J. Routson  
Oregon City, Ore.*

ED. NOTE: Because of limited space, it was impossible to list all of the organizations which have commendable programs on environmental issues. For this reason, we referred our readers to more comprehensive listings, where the League of Women Voters is included. The league promotes political responsibility through informed and active participation of citizens in government. It conducts educational projects and publishes materials on the environment, including water and air quality, land use and planning and solid waste management.

## EVENTS

**July 28-Aug. 2:** Conference on Urban Transportation Problems, New England College, Henniker, N.H. Contact: Engineering Foundation, 345 E. 47 St., New York, N.Y. 10017.

**July 29-Aug. 2:** Fire Safety Design for Buildings Workshop, Lake Mendota, Wis. Contact: University of Wisconsin Extension, 432 N. Lake St., Madison, Wis. 53706.

**July 29-Aug. 9:** School Site Selection, Planning and Development Workshop, School of Education, University of Michigan, Ann Arbor, Mich.

**Aug. 7-9:** Conference on Electronic Computation, Georgia Institute of Technology, Atlanta.

**Aug. 8-10:** Mid-Summer Conference, Michigan Society of Architects, Grand Hotel, Mackinac Island, Mich.

**Aug. 8-22:** AIA President's Tour of European Cities. Contact: Jacquie Watson, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

**Aug. 12-15:** American Health Congress, McCormick Place, Chicago. Contact: AHC, 840 N. Lake Shore Drive, Chicago, Ill. 60611.

**Aug. 19:** Entries due, Exhibition on Architecture for Health at annual meeting of the American Public Health Asso-

ciation, New Orleans, Oct. 20-23. Contact: Sam Lomauro, APHA, 1015 18th St. N.W., Washington, D.C. 20036.

**Aug. 19-20:** Institute on Energy Conservation in Industrial Plants and Facilities, University of Wisconsin, Madison, Wis.

**Aug. 21-22:** Conference on Impact of Public Opinion on Business, Plaza Hotel New York City. Contact: New York Management Center, Department 14NR, 360 Lexington Ave., New York, N.Y. 10017.

**Aug. 23:** Entries due, Plywood Design Awards Program. Contact: American Plywood Association, 1119 A St., Tacoma, Wash. 98401.

**Aug. 23-28:** Continuing Education Afloat, SS Mariposa, Honolulu to San Francisco/Los Angeles. Contact: Stuart Rose, Continuing Education, AIA Headquarters, 1735 New York Ave. N.W., Washington, D.C. 20006.

**Aug. 31:** Entries due, Keep America Beautiful Environmental Awards Program. Contact: KAB, 99 Park Ave., New York, N.Y. 10016.

**Sept. 2:** Entries due, International Competition on Urban, Lowrise, Group Dwellings. Contact: Shinkenchiku-Sha Co., Japan Architect Editorial Staff, 2-31, Yushima 2-Chome, Bunkyo-ku, Tokyo 113, Japan.

**Sept. 8-10:** International Conference on Urban Transportation, Pittsburgh. Contact: ICUT, P.O. Box 2149, Pittsburgh, Pa. 15230.

**Sept. 9-12:** Conference on Information Systems, Coliseum, New York City. Contact: American Management Association, Clapp & Poliak, Inc., 245 Park Ave., New York, N.Y. 10017.

**Sept. 10:** Abstracts due, Call for Papers for International Conference of the Design Methods Group to be held in the summer of 1975 on theme of "The Application of Systematic Methods to Designing." Contact: Donald P. Grant, P.O. Box 5, San Luis Obispo, Calif. 93406.

**Sept. 17-18:** Seminar on Earthquake and Fire Resistant Construction, Washington, D.C. Contact: American Concrete Institute, Box 4754 Redford Station, Detroit, Mich. 48219.

**Sept. 19-22:** New Jersey Society of Architects Convention, Playboy Club, Great Gorge, McAfee, N.J.

**Oct. 1-21:** Urban Study Tour of Soviet Cities. Contact: National Council of American-Soviet Friendship, 156 5th Ave., New York, N.Y. 10010.

**Oct. 3-10:** International Council for Building Research Studies and Documentation Congress, Budapest, Hungary. Contact: Secretariat du Congrès CIB, Institut Scientifique de la Construction, B.P. 71, 1502 Budapest, Hungary.

**Oct. 8-Nov. 3:** Architecture and Gardens Tour of Japan. Contact: Kenneth M. Nishimoto, AIA, 147 S. Los Robles Ave., Pasadena, Calif. 91101. □





## How do electrical contractors improve life-cycle operations?

### NECA study reveals opinions of design professionals.

In a study commissioned by the National Electrical Contractors Association (NECA), the problem of life-cycle building operation and maintenance was considered. Solution?

The majority of participants agreed: the full benefit of complex and sophisticated electrical systems can only be realized when regularly maintained by professional electrical contractors. Reasons? As members of the building team, electrical contractors possess specialized

knowledge and electrical applications experience. They understand the benefits of electricity and the potential operational difficulties that can arise... even in expertly designed buildings. They know that the best way to solve operations and maintenance problems is to correct them before trouble results.

If you can't afford electrical downtime, or a full-time work force for preventive maintenance, you can't afford not to select a professional electrical contractor. Remember him... for maximum maintenance at minimum cost.



National Electrical  
Contractors Association, Inc.  
Washington, D.C. 20014

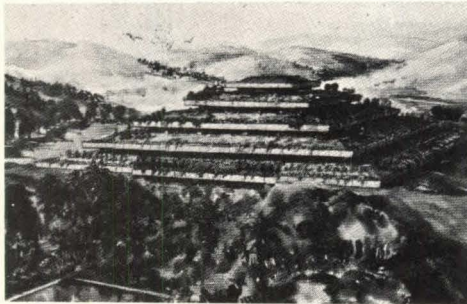
**If electricity makes it possible, electrical contractors make it practical.**



## GOING ON

continued from page 21

sided pyramid on a site of about 100 acres. Each level, smaller than the one beneath it, would be enclosed in glass and landscaped. On the bottom level would be archives, dining and storage areas; on the second, a museum; on the third, library and research facilities; on the fourth,



quarters for research scholars; and the top level would have residential accommodations for President Nixon.

Field is quoted as saying that he has been told that President Nixon doesn't want a "big edification or monstrosity." Field doesn't know what chances he has that his design will be selected for the center. "The original timetable called for a center to be completed by the end of 1976," he told a reporter, "but the Water-gate case has set back the schedule."

## Deaths

**Ray V. Harkless**, Foxburg, Pa.

**Isoya Yoshida, Hon. FAIA**, Tokyo

**Callix E. Miller Sr.**, South Bend, Ind.

**Edwin T. Steffian, FAIA**, Cambridge, Mass.

**Edward W. Tanner**, Kansas City, Mo.

**William H. Young**, St. Thomas, Virgin Islands

**Peter Woytuk, AIA**: Vice president for design and a director of Hugh Stubbins & Associates, Inc., of Cambridge, Mass., Woytuk made significant contributions to the design of such projects as the Bowdoin College senior center, the Francis A. Countway Library of Medicine and the Nathan Marsh Pusey Library at Harvard, graduate student housing at the Massachusetts Institute of Technology and buildings for the Rochester Institute of Technology. He was third prize recipient in a national design competition for the Boston Architectural Center in 1964, having previously, in 1962, been a finalist in the international competition to select an architect for the Boston City Hall.

The recipient of a number of notable scholarships and awards, Woytuk was a member of AIA's committee on design. He died suddenly of a heart attack on May 8 at the age of 44.

## Newslines

**Frank E. Clarke**, senior scientist at the U.S. Geological Survey, has been elected president of the American Society for Testing and Materials.

**The 1974 Royal Gold Medal for Architecture** has been awarded by the Royal Institute of British Architects to the London firm of Powell & Moya. This is the first time that the medal has been awarded to a group rather than to an architect.

**The First Montessori School in Atlanta**, designed by Finch Alexander Barnes Rothschild & Paschal (see Oct. '73, page 52), has been presented the Modern Schools Award by *Modern Schools* magazine.

**Peter S. Hopf, AIA**, is president of the recently established OSHA Research and Development Corp. The organization assists architects in the review of contract documents to conform with standards of the Occupational Safety and Health Act, thus minimizing potential professional liability. For information write to Hopf at 82 N. Broadway, Hicksville, N.Y. 11801.

**Illinois** is the first state to adopt its own comprehensive energy conservation guidelines for new state-funded buildings. The standards, to be enforced by evaluation teams which oversee the work of all state building consultants, will apply to such matters as site orientation; shape of structure; heating, cooling and lighting systems; and maximum use of daylight. It is expected that the new standards could produce an energy saving of 20 to 25 percent.

**Eleazer D. Herreras, FAIA**, who heads his own architectural firm in Tucson, Ariz., recently received a distinguished citizen award from the University of Arizona Alumni Association.

**A gift of \$50,000** has been made to the University of Illinois Foundation for the department of architecture at the Urbana/Champaign campus. The donor is Temple Hoyne Buell, AIA, a graduate of the university, who owns the firm of Buell & Co., in Denver.

**Louis I. Kahn, FAIA**, was awarded the doctor of humane letters degree posthumously by Columbia University at its commencement exercises. The degree was accepted by his widow. Traditionally, a Columbia honorary degree may not be awarded in absentia. This is only the second time in the university's modern history that an honorary degree has been awarded posthumously. In 1971, Mrs. Whitney Young Jr. accepted a degree for her husband, who had died the previous March.

**The Connecticut Society of Architects AIA** reports that a questionnaire to its membership reveals a reduction in the size of the average office of between 15 to 20 percent from 1969 to 1973 and an increase in the proportion of one- and two-man firms by about 25 percent. The architects list as major problems confronting them a full work load, the public's misunderstanding of the profession and a decline in professionalism.

**Cecil A. Alexander, FAIA**, chairman of the board of the Atlanta-based firm of Finch Alexander Barnes Rothschild & Paschal, has been named recipient of the 1974 Brotherhood Award by the Georgia Region, National Conference of Christian and Jews.

**A combined school and community-use facility** in the new town of Gananda near Rochester was exhibited in a school architecture show in Brussels recently. Architects are Urban Design Associates in Pittsburgh. After Brussels, the exhibit will tour the world.

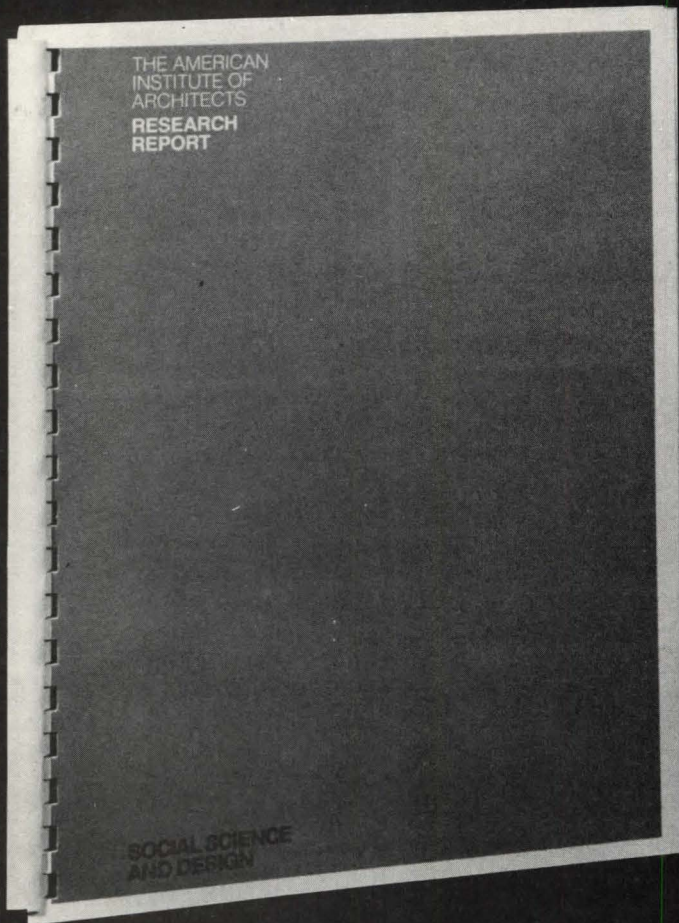
**Richard Saul Wurman, AIA**, and architectural historian Vincent Scully are compiling a book on the late Louis I. Kahn. Any person who has tapes made at lectures or during informal conversations with Kahn—or photographs of the architect—is requested to contact Wurman at 1214 Arch St., Philadelphia, Pa. 19107.

**A new 16mm, 18-minute color film** titled "Human Values in New Construction" shows how new residential projects can preserve the environment without sacrificing amenities. Presented by the General Electric Co.'s Corporate Marketing Developing Operation, the film is available on free loan to civic organizations, schools and community groups. Send requests to Modern Talking Picture Service, 2323 New Hyde Park Road, New Hyde Park, N.Y. 11040.

**The Victorian Society in America** recently elected William J. Murtagh as its new president. Murtagh is Keeper of the National Register. Jared I. Edwards, AIA, of Hartford, Conn., and Richard C. Frank, FAIA, of Columbus, Ga., were moved from positions on the board of directors to become vice presidents of the society.

**The Building Research Advisory Board** will celebrate its 25th anniversary on October 17 with a dinner at the Sheraton Park Hotel in Washington, D.C. Before the dinner, there will be a day-long forum on building science and technology assessment and utilization. For further information, contact Joan D. Finch, BRAB, 2101 Paschal has been named recipient 20418. □





## Environments

Contains a process model for architect and social scientist collaboration in designing environments; also tells how the model was developed.

## Energy & Design

A report on architectural and institutional opportunities to conserve energy in building design, partially written by the AIA Research Corporation.



Publications Marketing, 1735 New York Avenue, N.W., Washington, D.C. 20006

Please send me the following item(s) by return mail:

Note: Please include check with order if total is under \$20.

Check enclosed

Bill me

Energy Conservation (4RC201) ..... 5.00

Social Science and Design (2R110) ..... 2.50 \*

\* Member discount — 20%

Prepaid order — additional 2% discount

NAME \_\_\_\_\_

STREET \_\_\_\_\_

CITY, STATE, ZIP \_\_\_\_\_



# ADVERTISERS

**Michael J. Hanley**  
 Publisher  
**Michael M. Wood**  
 Sales Manager  
**Tom Crow**  
 National Accounts Manager  
**George L. Dant**  
 Manager, Production and Business  
 1735 New York Ave. N.W.  
 Washington, D. C. 20006  
 (202) 785-7300

## ADVERTISING SALES OFFICES

**Chicago** (312) 251-4960  
 John Bradbury  
 Central Sales Manager  
 2206 Elmwood  
 Wilmette, Ill. 60091

**New York** (201) 729-9331  
 Tom Crow  
 79 Hilltop Trail  
 Sparta, N.J. 07871

**Washington, D.C.** (202) 785-7271  
 Michael M. Wood  
 1735 New York Ave. N.W.  
 Washington, D.C. 20006

**West Coast Representative**  
 (213) 459-3278  
 Genia Logan  
 615 Kingman Ave.  
 Santa Monica, Calif. 90402

**Acknowledgements:** Cover photo courtesy of Comsat; 6, Louis Checkman; 10, 14, Carleton Knight III; 30-33, Nels Hall and Toni Poli (the author also wishes to thank Enis Squires, Lenis Williams, Professor Ed Allen, Rena Racki and Anne Ryan); 34-37, Nancy Wolf; 47-48, Steven Silvera; 49, Charles A. Blessing; 51-53, Robert C. Lautman; 54-56, courtesy, University Press of Virginia.

## ADVERTISERS

American Enca Corp. ....	5
<i>DKG, Inc., Advertising</i>	
Buckingham Slate .....	60
<i>Riddick Advertising Art</i>	
Carlisle Tire and Rubber .....	71
<i>George Bond and Associates</i>	
CECO Corporation .....	25
<i>Fensholt Advertising, Inc.</i>	
Construction Specialties .....	21
<i>Keyes, Martin &amp; Company</i>	
DuPont, E. I. de Nemours & Co., Inc. ....	Cov 2 - pg. 1
<i>N. W. Ayer &amp; Son, Inc.</i>	
Electric Energy Association 17-18-19-20	
<i>Chas. E. Root, Inc.</i>	
Elkay Manufacturing Co. ....	7
<i>The Biddle Advertising Co.</i>	
Fixtures Manufacturing Co. ....	16
<i>Sher &amp; Jones, Inc.</i>	
Georgia Marble Corp. ....	8-9
<i>Lowe &amp; Stevens</i>	
Grefco, Inc. ....	15
<i>Boylhart, Lovett &amp; Dean, Inc.</i>	
Haws Drinking Faucet Co. ....	28
<i>Pacific Advertising Staff (PAS)</i>	
Hewlett-Packard .....	65
<i>Tallant/Yates Adv., Inc.</i>	
International Masonry Inst. ....	Cov. 3
<i>Henry J. Kaufman &amp; Assoc., Inc.</i>	
LCN Closers .....	62-63
<i>Alex T. Franz, Inc.</i>	
Lord & Burnham .....	70
<i>Nolan/Johnson, Inc.</i>	
Meierjohan-Wengler .....	64
<i>McCarthy Advertising</i>	
National Electrical Contractors Assoc. (NECA) .....	73
<i>VanSant Dugdale</i>	
PPG Industries, Inc. ....	11-12-13
<i>Ketchum, McLeod &amp; Grove, Inc.</i>	
Red Cedar Shingle & Handsplit Shake Bureau .....	2
<i>Ayer/Baker Advertising</i>	
Scharf, Edward G. & Sons .....	22-23
<i>Sherm-Ad Advertising</i>	
Standard Dry Wall Products .....	69
<i>Owens &amp; Clark Advertising</i>	
United States Steel Corp. ....	26-27
<i>Compton Advertising, Inc.</i>	
Wellco Carpet .....	Cov. 4
<i>Hogan-Rose &amp; Co., Inc.</i>	
Welsbach Lighting Products .....	24
<i>Robert K. Skacel Advertising</i>	

# How to avoid future shock.

Tomorrow won't take care of itself. And, deep down, you know that. So you'd better do something about your future money needs today.

There's a painless way. Simply start building your nest egg a little at a time. It's easy when you buy U.S. Savings Bonds through the Payroll Savings Plan where you work.

You can save as little or as much as you want. Just specify the amount. And it'll be set aside from your paycheck and used to buy Bonds.

Then, when the future arrives, you'll be better fixed to face it. Because Bonds are the best shock absorber around.

Now E Bonds pay 6% interest when held to maturity of 5 years (4 1/2% the first year). Bonds are replaced if lost, stolen or destroyed. When needed, they can be cashed at your bank. Interest is not subject to state or local income taxes, and federal tax may be deferred until redemption.

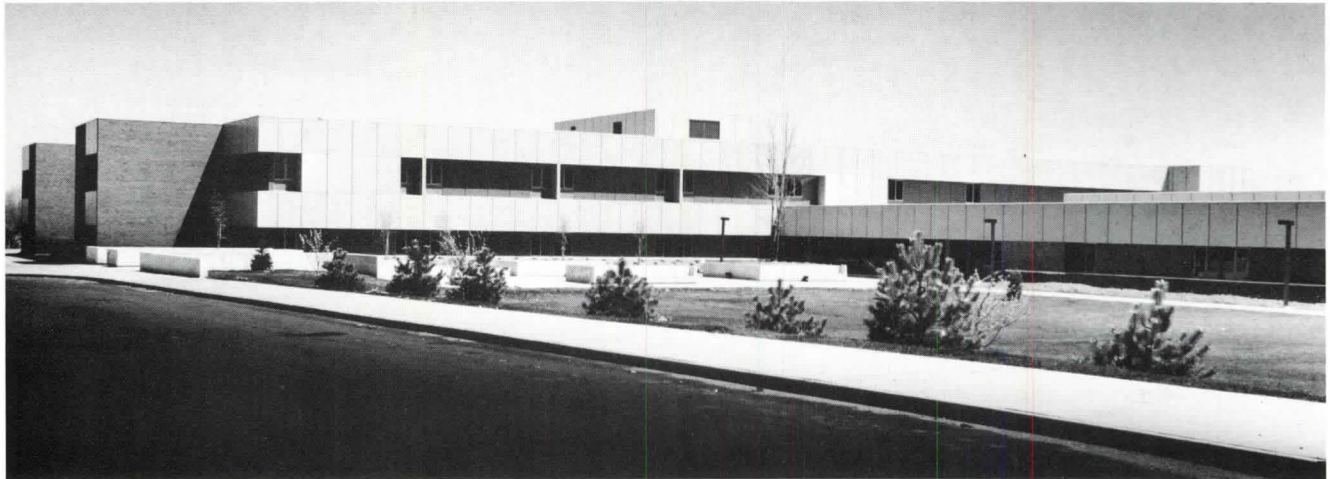


## Take stock in America.

Join the Payroll Savings Plan.



# New Building Design With Cascaded Heat Recovery Systems Could Accelerate Swing Toward "Alternative Education" in Secondary Schools



*Piscataway High School exterior has a solid, permanent look that belies the easy flexibility of the interior classroom arrangement.*

**Often the very bricks and mortar in a school building can stifle administrators' hopes for curriculum innovation. Here is a high school that combines demountable walls and electric "universal core" space conditioning to keep all options open for future change.**

**Piscataway, N.J.** *The way it was is not necessarily the way it should be for every student. And if school is, indeed, a preparation for life, then no education is realistic without alternatives.*

This is the way one educator sums up the philosophy of growing numbers of parents and students who are challenging the traditional rigidity of regular schools. What they want essentially are wider choices in courses and subject matter, their intent being to make education more relevant for individuals of all kinds of interests and aptitudes. Out of the challenge has come what is known as "alternative education," a broad term used for any programs that depart from conventional curricula.

Response to the quest for innovative programs can already be seen in many elementary schools but has only begun to surface in secondary education. The syllabus of an ordinary high school is still structured mainly on the hypothesis that most children will go on to college. Actually only 35 percent do, so that as-

sumption is clearly invalid. Thus, it appears that a strong case can be made for varied programs incorporating intensive instruction in basic skills and tailored to the interest areas of those not contemplating college entrance. Some could argue that regular high schools have offered alternatives for a long time—such as secretarial courses for girls and shops for boys. But measured against the countless number of career paths open to today's young people, these appear hardly enough.

**Occult Could Be Spirited.** On the whole school districts are, indeed, moving to widen the world of alternative education, but slowly. The slow pace is understandable when one considers the range of subject matter that could conceivably qualify as justifiable alternatives. The proposal of any new line of study involves debate among the administrators and the parent body. And while some of this debate might be modest and short term as in the case of a program on paramedical science, it could

be more spirited and longer lived for a course on, say, "The Modern Occult."

A more pragmatic reason for delay can be traced to the structural inflexibility of older high school buildings. Administrators wishing to initiate new programs must provide suitable spaces to accommodate them—a difficult if not impossible task when classrooms are limited in number, shape and size. Many are the ambitious plans that remain on the shelf because the partitioning needed could not be built as a result of budgetary or structural restrictions. It is with good reason, therefore, that school districts planning new construction are being advised to look ahead to what they may want to do in the way of alternative education.

The citizens of this New Jersey township are one group that anticipated such advice. The results of their foresight can be found in the brand new Piscataway High School, which is a model of flexibility from the standpoints of both architecture and engineering. The architects contributed a "consolidated plan" which permits floor layouts to change in conformance with the needs of the community's children. An essential part of the plan is the electric cascaded refrigeration-type heat recovery space conditioning system featuring what its engineers call a "universal core."



**Revision of state code for school design made it possible to treat a greater portion of total floor area as core space and created ideal opportunity for heat recovery**

**Low Profile.** Piscataway High School with nearly ¼-million square feet of floor space rests on 50 acres of land in a suburban setting. The landscaped site includes graded fields for outdoor sports including lacrosse, soccer and track. Construction is one-and two-story steel frame surfaced mostly by beige-enameled prefabricated aluminum panels with some sections of dark brick added to provide a pleasing relief. For lower heat loss, windows have been made small in size and few in number. Yet the building presents a comparatively open face for the windows are set back under wide overhangs. The slot-like configuration that results emphasizes the low, horizontal profile. There are more than 400 rooms to accommodate 2000 students and faculty as well as the administrative staff of the school district.

A person entering the school for the first time is immediately aware that the architects have provided an elegant environment for the young people to learn in. The roominess, conditioned air, carpeted and terrazzo floors, colorful furniture, built-in lab equipment and lockers, all contribute to the aesthetics. The split-level library with spiraling balustrades of form-textured poured concrete and a domed-ceiling mini-planetarium are highlights of the visitor's tour.

**Short Spans, Small Modules.** But the major accomplishment of this architectural approach is the ease with which it can respond to shifts in curriculum. While some interior walls are built to

remain permanently in place, most of the space is divided by demountable prefabricated floor-to-ceiling partitions. Thus the building's floor plan can be re-arranged—extensively if necessary—with relative ease.

"Simple as it sounds, the feasibility of relocatable walls doesn't just happen in a building," says James E. Morton of the architectural firm of Eckert & Gatarz. "The entire design must be predicated on it. The major difficulty in such a building is that there are fewer load-bearing interior walls to support roof and ceiling structures." One answer might have been to resort to wide ceiling spans incorporating heavy self-supporting joists. "But that would have been a very costly approach," says Morton. "We chose instead moderate spans, 25 feet is about the widest, with steel columns for end support. The use of interior columns doesn't inhibit the flexibility concept at all. As classroom layouts change an occasional column may appear out in a teaching area but we can work around it with good planning."

The entire building is laid out in terms of repetitive five-foot-square modules. Each module is self-sufficient in terms of services, having its own lighting fixtures as well as access to HVAC, communications and fire detection.

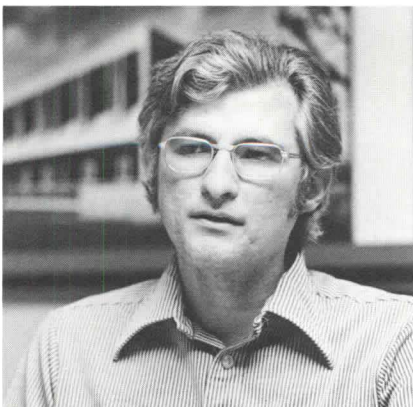
**Table Talk.** The story of Piscataway High School began in the mid-sixties when the administrators saw a need for additional high school space to house the growing teenage population. Some consideration was given early on to expanding an existing building by the addition of conventional double-loaded classroom wings stretching out from the old structure. But the consensus of opinion among officials and parents both was that this approach would merely be a stopgap. It didn't have the flexibility needed to accommodate the changes most could see coming.

As they moved further into planning and design, the architects found that all of the ground rules had changed suddenly. Just off the presses was a revised edition of the "New Jersey Guide for Schoolhouse Planning and Construction." At the time interest in open-plan schools was at a peak and in recognition of this fact, the guide included for the first time design recommendations for them. The guide, for example, removed the requirement for windows in classrooms provided they were air conditioned and gave revised criteria for central HVAC systems and lighting.

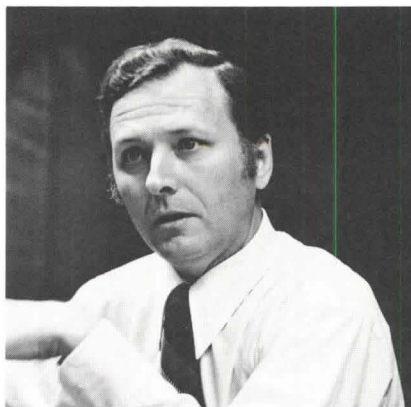
The designers were thus free to move in a new direction. The open plan is the ultimate in flexible classroom layout and Piscataway is in essence an open-plan school—with demountable partitions. "The main benefit to us," says architect Morton, "was that we were able to think 'square' instead of 'long and narrow'. We could bring together—consolidate—teaching areas into locations best suited for them rather than stringing them out along lengthy corridors. And, most important from a first cost standpoint, because less space was needed for corridors we got more assignable space out of a given floor area."

**TABLE OF SPECIAL-PURPOSE CLASSROOMS**

- |                         |                              |
|-------------------------|------------------------------|
| 1. Office Practice      | 18. Instrumental Music       |
| 2. Shorthand            | 19. Ceramics                 |
| 3. Shorthand Lab        | 20. Art                      |
| 4. English (7)          | 21. Health (2)               |
| 5. English Seminar      | 22. Foods Lab                |
| 6. Foreign Language (5) | 23. Consumer Ed              |
| 7. Foreign Language Lab | 24. Home Economics           |
| 8. Typing (3)           | 25. Health Occupations       |
| 9. Data Processing      | 26. Beauty Culture           |
| 10. Business            | 27. Drafting                 |
| 11. Bookkeeping (2)     | 28. Appliance Repair         |
| 12. Social Studies (8)  | 29. Driver Ed                |
| 13. Mathematics (5)     | 30. Distribution Business Ed |
| 14. Biology Lab (2)     | 31. Auto Mechanics           |
| 15. Chemistry Lab (4)   | 32. Print Shop               |
| 16. Physics Lab         | 33. Building Trades          |
| 17. Vocal Music         | 34. Planetarium              |



*Architect James Morton welcomed changes in the ground rules for designing New Jersey schools with optimized partitioning.*



*Engineer Donald Barnickel saw in the perimeter—core ratio of the consolidated plan an excellent opportunity for heat recovery.*



*Fred Koop found a way to avoid asking the architects for high-rise mechanical rooms by substituting smaller heat wheels.*



The accompanying table tells what flexible design immediately makes possible by listing the unusual number of special-purpose areas in the school. It was possible to build classrooms and laboratories exactly suited in shape, size and location to each specific course. Such custom design would not be practical if the spaces were being committed permanently with conventional walls. In Piscataway, the partitioning can change when courses change.

**The Finite Zone.** The electric year-round space conditioning system is a versatile display of a number of approaches toward energy conservation. In fact, the combination of differing techniques used in the hybrid configuration make it hard to classify generically. Designed by Barnickel Engineering, Inc., it is at once a heat-of-light system, a refrigeration-type ducted-air heat recovery system with a *single-bundle* condenser, and a closed-loop water-to-air unitary heat pump system. Additionally, it has heat wheels and an electric off-peak hot water generator for supplementary heat and thermal storage.

"When the architects first outlined to us their plans for the school," says Donald Barnickel, "we recognized immediately the opportunity for installing an energy conservation system, using the heat gains of the core spaces to offset heat losses in the perimeter spaces. My engineers worked with the architects and the school board right from the start, investigating the feasibility of various types of systems, even visiting a number of school installations in this state and Pennsylvania to get the benefits of their operating experience.

"One interesting thing that all of us learned was that the overall cost of an air conditioned school building with this type of squared-off floor plan is not much different from that of a conventional school with double-loaded classroom wings and without HVAC. Perimeter space is expensive to build and more costly to heat than core space. And the simple fact is that with the consolidated plan there is less perimeter and more core for any given amount of floor area."

The design objective of the engineers was to provide the mechanical system with as much flexibility as the architects were giving in their floor layouts. In most heat recovery buildings the perimeter zones are very positively defined. The perimeter zone extends, say, about 15 to 20 feet in from the outer walls and is separated from the core by solid permanent walls. With demountable walls this separation is more vague. The school does have distinct core and perimeter systems, with the latter respon-



*Concealed ducts in chemistry lab worktables carry exhaust from fume hoods down to mains installed beneath floor.*

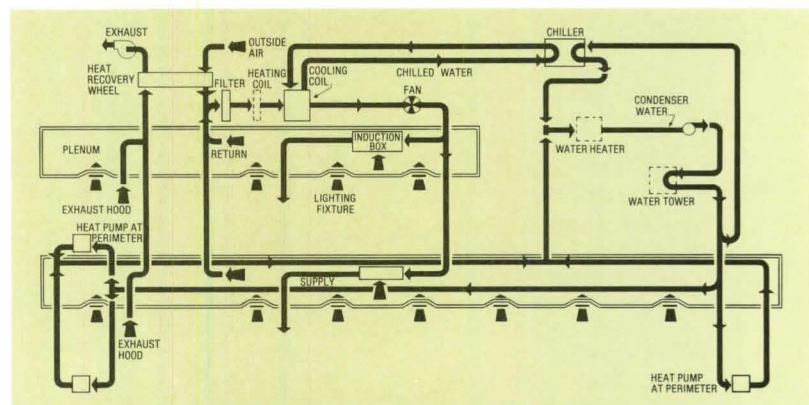
sible mainly for heat gains or losses through the skin. In a sense the perimeter zone may be considered as extending only a matter of inches from the outer walls. Everything else is "core." Therefore, partitions can be shifted freely without concern for core-perimeter boundaries.

**Pumps in Cascade.** The core system consists of three air handling units served by one 550-ton centrifugal chiller and circulating cool air throughout the building. Each individually controlled space has an induction box in the plenum above it, which mixes cool air with warm plenum air as required

to maintain the desired temperatures for the space. Air return is through the fluorescent lighting fixtures, into the plenum and back to the air handlers. Chilled water in the air handler coils removes heat from the return air and transfers it through the chiller compressor to the condenser water. In this application the chiller functions as a *non-reversing* air-to-water heat pump.

The perimeter system consists of unitary water-to-air *reversible* heat pumps installed against the outer walls of the building. Rated at one and two tons and incorporating integral thermostats, these units are coupled by a closed loop of water pipe with the chiller condenser. Depending on whether it is on heating or cooling a perimeter heat pump either absorbs heat from the circulating condenser water or dissipates heat into it. For most of the winter season, the perimeter system is on heating while the core system is on cooling. Under such conditions any heat rejected from the core is transferred through two stages of heat pumps to the perimeter.

**Reinventing the Wheel.** State standards require the ventilation system to make as much as one or more complete air changes per hour in each space depending on use. In quantitative terms this means that under wintertime conditions, for example, 85,000 cubic feet of air are exhausted from inside the build-



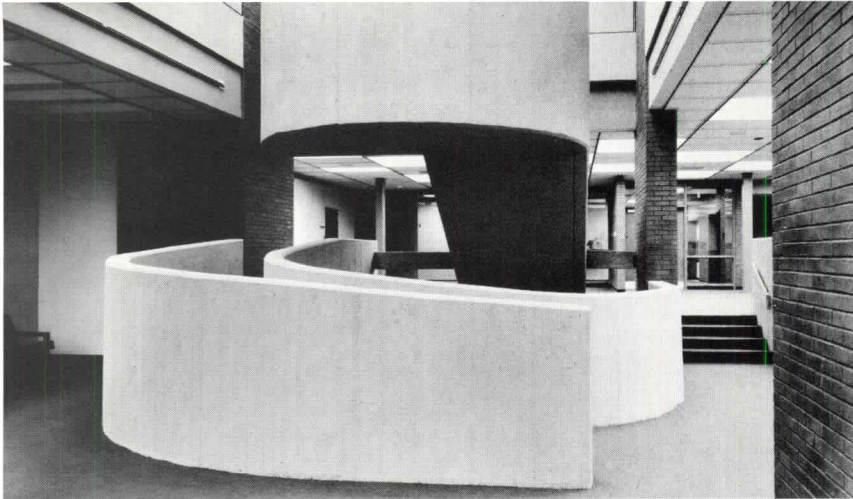
### CASCADED HEAT RECOVERY SYSTEMS

Schematic shows the integration of the HVAC systems for the perimeter and the universal core. The core system incorporates air handling units which supply cool air to induction boxes in plenum above the various zones. Working off independent wall-mounted thermostats the boxes regulate the mix of cool primary air with warm air drawn from plenum and, thus, the temperature of air entering spaces through ceiling registers. Air return is via fluorescent lighting fixtures into plenum. The 550-ton chiller serves as a non-reversing heat pump transferring heat from core to condenser water.

Condenser water circulates in a pipe loop connecting unitary water-to-air heat pumps installed against the perimeter walls. Each unit has its own integral thermostat and can be on heating or cooling regardless of the season. In the heating mode the units absorb energy from loop water. Heat recovered from the core has thereby been transferred through two stages of heat pumps to the perimeter.

The water loop includes a sealed roof-mounted water tower and an off-peak high-temperature (250F) electric hot water generator. The latter is a pressurized thermal storage tank which provides supplementary heat to loop water when its temperature drops to 70F. When temperature rises to 92F, fans and spray tower are sequenced to dissipate heat into the atmosphere. Heat wheels recover heat from all exhaust systems, including ventilating hoods in science laboratories, for preheating makeup air.





photography by Otto Baitz

*Library-resource center has three levels connected by curved reinforced concrete staircase.*

**DESIGN SUMMARY**

**GENERAL DESCRIPTION:**

Area: 243,950 sq ft  
 Volume: 4,043,000 cu ft  
 Number of floors: one and two  
 Number of occupants: 2000  
 Number of rooms: 417  
 Types of rooms: classrooms, science laboratories, music rooms, cafeteria, kitchen, lounge, storage, private and general offices, automotive shop, building trades shop, photographic studio, print shop, library, planetarium, gym, beauty culture shop, auditorium

**CONSTRUCTION DETAILS:**

Glass: single 1/4" plate tinted  
 Exterior walls: insulated metal panels on steel frame, 3" polystyrene foam insulation (R-12); U-factor: 0.07  
 Roof and ceilings: built-up tar and gravel roof on 1" rigid urethane insulation (R-7), concrete deck, suspended acoustical tile ceiling; U-factor: 0.1  
 Floors: concrete slab, perimeter insulation  
 Gross exposed wall area: 50,515 sq ft  
 Glass area: 7035 sq ft

**ENVIRONMENTAL DESIGN CONDITIONS:**

**Heating:**  
 Heat loss Btuh: 9,391,000  
 Normal degree days: 5000  
 Ventilation requirements: 85,000 cfm  
 Design conditions: 0° F outdoors; 75F indoors  
**Cooling:**  
 Heat gain Btuh: 7,020,000  
 Ventilation requirements: 60,160 cfm  
 Design conditions: 95F dbt, 75F wbt outdoors; 75F, 50% rh indoors

**LIGHTING:**  
 Levels in footcandles: 40-70  
 Levels in watts/sq ft: 2 1/2 - 3 1/2  
 Type: fluorescent

**CONNECTED LOADS:**

Heating and Cooling (625 tons)	3260 kw
HVAC Accessories	293 kw
Lighting	600 kw
Water Heating	150 kw
Cooking	500 kw
<b>TOTAL</b>	<b>4803 kw</b>

**PERSONNEL:**  
 Owner: Piscataway Board of Education  
 Architects: Eckert/Gatarz  
 Consulting Engineers: Barnickel Engineering  
 General Contractor: Guimina Constr. Corp.  
 Electrical Contractor: Lessner Elec. Corp.  
 Mechanical Contractor: Boro Plumbing & Heating Corp.  
 Utility: Public Service Electric & Gas Co.

ing each minute and replaced by cold outside air. Preheating large volumes of raw makeup air ordinarily entails the expenditure of a considerable amount of new energy. But in this high school much of this preheating is done by salvaging energy that would otherwise be thrown away.

Six "total" heat wheels installed at various points in the system reclaim heat and moisture from exhaust air and transfer it to incoming air. In summer the process is reversed and the wheels precool and dehumidify makeup air. Aiming for maximum heat transfer, the engineers chose relatively large wheels. Within limits, energy transfer is proportional to wheel diameter and speed.

Dealing with big wheels is not without problems, however. "Our calculations showed that we'd need a 20-foot wheel at each of the two main air handling units," remembers engineer Fred Koop. "And, in fact, wheels that big in prefabricated housings are available from manufacturers. But for them we'd have to have a penthouse 25 to 30 feet high. We didn't dare ask the architects to let us dominate the school's silhouette with something like that."

Koop et al improvised their own wheelhouses in which two 10-foot wheels are substituted for a single large one. The wheels are installed on opposite sites of the enclosures which are divided into inlet and outlet air passages by masonry partitions. The partitions split the incoming airstream, turning it 90 degrees right and left into the wheels. The wheels are rotated by adjustable-speed d-c drives with SCR circuitry. Speed (and, hence, rate of heat transfer) vary with supply-air and condenser water temperatures, changing to maximum rpm only when condenser water drops below the 84F midrange value. Power needed to drive the wheels is

thus less than it would be if they operated constantly at full speed.

**HVAC and P.R.** On passing a common type of heat recovery building late on a dark, windy night in midwinter, more than one conservation-minded citizen have been startled to see the structure's lights flash on suddenly. What was being witnessed, of course, was the routine cycling of the lighting system to maintain setback temperature. But misreading the occurrence as prima facie evidence of energy waste in an unoccupied building, our passersby may well have hurried homeward to fire off stern protests to the owners.

Answering such letters is not an infrequent chore in public relations. A typical reply would explain the energy conservation features of the HVAC system stressing, for example, heat reclaim, economizer controls, programmed ventilation cutoff, and automatic temperature setback. Assurances would be given that cycling the lights is an economical means for preventing indoor temperatures from dropping below a practical minimum and is perfectly consistent with the energy management objectives of the designers.

"We used a different approach in our particular system," points out Fred Koop. "A good portion of our off-hour heating requirements is supplied by the thermal inertia of the water circulating in the hydronic network. When this diminishes to a point, we begin to draw

on the heat stored in the off-peak hot water generator. In addition, we have supplementary strip heaters in the air handling units which can carry the entire heat loss of the building if needs be."

All of which means that in Piscataway High School the lights stay off at night. This is one attribute of the HVAC system that some p.r. people may envy.

**ENERGY MANAGEMENT PROGRAM**

A Resource Conservation Activity Of The **ELECTRIC ENERGY ASSOCIATION**

90 Park Avenue, New York, N.Y. 10016



# Build a 10 story building with loadbearing masonry and get the 11th story free.



When you build with a modern loadbearing masonry system, you can save as much as 10% on construction costs.

Because masonry lets you save on the two biggest expenses of building. Time and materials.

Instead of building separate structural systems and enclosure walls, you can have them both in one step. Masonry walls work together with roof and floor systems to create one solid structural shell. Complete with enclosure walls and inside partitions.

And you can begin finish work on each floor as soon as the masons begin erecting the floor above it. So your building is finished faster. And you can stop paying interim interest and start charging rent.

You save on maintenance costs too. Because masonry doesn't warp, dent, bend, buckle or rot. It gives superior fireproofing and sound control. And with its inherent beauty, it never needs painting.

When you add all these savings up, you can save enough money to add that eleventh story. If that sounds like an interesting prospect to you, mail this coupon. We'll send you the complete story.

Circle 23 on information card



International Masonry Institute  
Suite 1001 823 15th Street, N. W.  
Washington, D. C. 20005 AIA

Send me information on the modern  
loadbearing masonry building system.

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Nature of Business \_\_\_\_\_





# POUND WISE

**Because a good businessman isn't penny foolish.** He expects business-like performance from his carpet. And Pound Wise gives him the rugged durability of 6-ply Celanese PCP Fortrel polyester yarn. Plus the assurance of a 5-year wear guarantee. But there's another plus. Pound Wise has the comfortable, congenial good looks he doesn't expect in a business carpet. Textural, extra-

gant sized rows of quarter-gauge nubby loops. Available in 12 natural colors. This carpet is a wise choice for the man who sets an appreciable value on appearance. For only a few pennies more. Pound Wise is one of five Capital Assets carpets. Rugged commercial carpets for big business. Each different in appearance, for places where appearance is an asset to

business. Capital Assets completes a line of commercial carpets for every installation from the ground floor to the executive suite. Available in every commercial fiber, construction and price range. And all commercial quality, because we make nothing else. Write or call for catalogs.

Fortrel® and Fortrel PCP are trademarks of Fiber Industries, Inc., a subsidiary of Celanese Corporation.

Because we're committed to commercial quality and nothing else.

**wellocarpetcorporation**



**CELANESE FORTREL**

WELLOCARPET CORPORATION □ P. O. BOX 281 □ CALHOUN, GEORGIA 30701 □ TELEPHONE: 404/629-9276 □ A WHOLLY OWNED SUBSIDIARY OF MANNINGTON MILLS, INC. SALEM, N. J.

Circle 24 on information card